



# Daily Briefing - October 02, 2025

Your Daily Tech & Programming Digest

Thursday, October 02, 2025

1000

ARTICLES

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WORDS

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SOURCES



## Today's Top Stories

### Foundation Model for Advancing Healthcare: Challenges, Opportunities and Future Directions

 2024-11-12  1 min  214 words

REVIEWS BIOMEDICAL ENGINEERING

**Summary:** Foundation model, trained on a diverse range of data and adaptable to a myriad of tasks, is advancing healthcare. It fosters the development of healthcare artificial intelligence (AI) models tailored to the intricacies of the medical field, bridging the gap between limited AI models and the varied n...




Read full article:

<http://ieeexplore.ieee.org/document/10750441>

## Diffusion MRI of the prenatal fetal brain: a methodological scoping review

 1  
min

 23  
words

NEUROIMAGE

**Summary:**

Publication date: 15 October 2025


Source: Neurolmage, Volume 320


Author(s): M. Di Stefano, T. Ciceri, A. Leemans, S.M.C. de Zwarte, A. De Luca, D. Peruzzo

 Read full article:


[https://www.sciencedirect.com/science/article/pii/S1053811925004562?dgcid=rss\\_sd\\_all](https://www.sciencedirect.com/science/article/pii/S1053811925004562?dgcid=rss_sd_all)

## Author Correction: Spatial transcriptomics reveals the distinct organization of mouse prefrontal cortex and neuronal subtypes regulating chronic pain

 Yi  
Zhang

 2025-09-16

 1  
min


 26  
words

NATURE NEUROSCIENCE

**Summary:**

Nature Neuroscience, Published online: 16 September 2025; [doi:10.1038/s41593-025-02077-z](https://www.nature.com/articles/s41593-025-02077-z)



Author Correction: Spatial transcriptomics reveals the distinct organization of mouse prefrontal cortex and neuronal subtypes regulating chr...

 Read full article:

<https://www.nature.com/articles/s41593-025-02077-z>


## Coding of tool use independent of body part

Dylan F. Cooke  
Department of Biomedical Physiology and Kinesiology, Simon Fraser University,  
Burnaby, BC V5A 1S6, Canada  
Institute for Neuroscience and Neurotechnology, Simon Fraser  
University, Burnaby, BC V5A 1S6, Canada

 2025-09-22  1 min  15 words

PNAS NEUROSCIENCE


**Summary:** Proceedings of the National Academy of Sciences, Volume 122, Issue 39, September 2025. <br />

 **Read full article:**

<https://www.pnas.org/doi/abs/10.1073/pnas.2520437122?af=R>

## Disentangling metabolic and neurovascular timescales supporting cognitive processes

Francesca SaviolaStefano TambaloLaura BeghiniAsia FerrariBarbara CassoneDimitri Van De VilleJorge JovicichCIMeC, Center for Mind/Brain Sciences, University of Trento, Rovereto 38068, ItalybDepartment of Medical and Surgical Specialties, Radiological Sciences and Public Health, University of Brescia, Brescia 15123, ItalycNeuro-X Institute, Ecole Polytechnique Fédérale de Lausanne, Geneva 1202, SwitzerlandddDepartment of Physics, University of Torino, Torino 10125, ItalyeDepartment of Molecular Biotechnology and Health Sciences, University of Torino, Torino 10124, ItalyfDepartment of Physics, Faculty of Natural Sciences, Norwegian University of Science and Technology, Trondheim 7034, NorwaygDepartment of Clinical and Experimental Sciences, Neurology Unit, University of Brescia, Brescia 15123, ItalyhDepartment of Psychology, University of Milano-Bicocca, Milan 20126, ItalyiDepartment of Radiology and Medical Informatics, University of Geneva, Geneva 1202, Switzerland

 2025-09-22  1 min  43 words


PNAS NEUROSCIENCE

**Summary:** Proceedings of the National Academy of Sciences, Volume 122, Issue 39, September 2025.   
**Significance** This study reveals how excitation/inhibition balance (EIB) kinetics and functional brain network dynamics coevolve during cognitive challenges. Using time-resolved spectroscopy, we demonstrate th...

 **Read full article:**

<https://www.pnas.org/doi/abs/10.1073/pnas.2506513122?af=R>

## Epileptic brain imaging by source localization CLARA supported by ictal-based semiology and VEEG in resource-limited settings

 Aleksandra Kawala-Sterniuk



2025-08-29



1 min



279 words

FRONTIERS NEUROINFORMATICS


**Summary:** Introduction Accurate localization of the epileptogenic zone is essential for surgical treatment of drug-resistant epilepsy. Standard presurgical evaluations rely on multimodal neuroimaging techniques, but these may be limited by availability and interpretive challenges. This study aimed to assess th...



Read full article:

<https://www.frontiersin.org/articles/10.3389/fninf.2025.1661617>

## Closed-loop coupling of both physiological spindle model and spinal pathways for sensorimotor control of human center-out reaching

 Syn Schmitt



2025-08-26



1 min



243 words

FRONTIERS COMPUTATIONAL NEUROSCIENCE


**Summary:** The development of new studies that consider different structures of the hierarchical sensorimotor control system is essential to enable a more holistic understanding about movement. The incorporation of more biological proprioceptive and neuronal circuit models to muscles can turn neuromusculoskele...






Read full article:

<https://www.frontiersin.org/articles/10.3389/fncom.2025.1575630>

## Autonomous retrieval for continuous learning in associative memory networks

 Marcelo  
Rozenberg

 2025-08-26  1  
min

 140  
words


FRONTIERS COMPUTATIONAL NEUROSCIENCE



**Summary:** The brain's faculty to assimilate and retain information, continually updating its memory while limiting the loss of valuable past knowledge, remains largely a mystery. We address this challenge related to continuous learning in the context of associative memory networks, where the sequential storage...


 Read full article:

<https://www.frontiersin.org/articles/10.3389/fncom.2025.1655701>

## Quantitative prediction of intracellular dynamics and synaptic currents in a small neural circuit

 Timothy  
O'Leary

 2025-09-01  1  
min

 238  
words


FRONTIERS COMPUTATIONAL NEUROSCIENCE


**Summary:** Fitting models to experimental intracellular data is challenging. While detailed conductance-based models are difficult to train, phenomenological statistical models often fail to capture the rich intrinsic dynamics of circuits such as central pattern generators (CPGs). A recent trend has been to em...

 Read full article:


<https://www.frontiersin.org/articles/10.3389/fncom.2025.1515194>

## Editorial: Neuro-detection: advancements in pattern detection and segmentation techniques in neuroscience

 Ridha  
Ejbali

 17 2025-09-02

 1  
min


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words


FRONTIERS COMPUTATIONAL NEUROSCIENCE

 Read full article:

<https://www.frontiersin.org/articles/10.3389/fncom.2025.1685174>

## Editorial: AI and inverse methods for building digital twins in neuroscience

 Maik  
Kschischo

 17 2025-09-08

 1  
min

 0  
words

FRONTIERS COMPUTATIONAL NEUROSCIENCE

 Read full article:

<https://www.frontiersin.org/articles/10.3389/fncom.2025.1684335>

## The impact of CSF-filled cavities on scalp EEG and its implications



Maria Carla  
Piastra



2024-06-14



1  
min



64  
words

OOSTENVELD ROBERT

**Summary:** Previous studies have found electroencephalogram (EEG) amplitude and scalp topography differences between neurotypical and neurological/neurosurgical groups, being interpreted at the cognitive level. However, these comparisons are invariably accompanied by anatomical changes. Critical to EEG are the...



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## Motion-BIDS: an extension to the brain imaging data structure to organize motion data for reproducible research



Julius  
Welzel



2024-07-02



1  
min



72  
words

OOSTENVELD ROBERT

**Summary:** We present an extension to the Brain Imaging Data Structure (BIDS) for motion data. Motion data is frequently recorded alongside human brain imaging and electrophysiological data. The goal of Motion-BIDS is to make motion data interoperable across different laboratories and with other data modalities...




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## One hundred years of EEG for brain and behaviour research

 Pedro Valdes-Sosa

 2024-08-22  1 min

 2 words


OOSTENVELD ROBERT



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## Freezing of gait in Parkinson's disease is related to imbalanced stopping-related cortical activity


 Richard J A van Wezel

 2024-09-04  1 min

 65 words

OOSTENVELD ROBERT

**Summary:** Freezing of gait, characterized by involuntary interruptions of walking, is a debilitating motor symptom of Parkinson's disease that restricts people's autonomy. Previous brain imaging studies investigating the mechanisms underlying freezing were restricted to scan people in supine positions and yie...


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## The past, present, and future of the brain imaging data structure (BIDS)

 Krzysztof J  
Gorgolewski

 2024-09-23

 1  
min

 82  
words

OOSTENVELD ROBERT


**Summary:** The Brain Imaging Data Structure (BIDS) is a community-driven standard for the organization of data and metadata from a growing range of neuroscience modalities. This paper is meant as a history of how the standard has developed and grown over time. We outline the principles behind the project, the ...


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## Human cortical high-gamma power scales with movement rate in healthy participants and stroke survivors

 Fanny  
Quandt

 2025-01-09

 1  
min

 65  
words

OOSTENVELD ROBERT


**Summary:** Motor cortical high-gamma oscillations (60-90 Hz) occur at movement onset and are spatially focused over the contralateral primary motor cortex. Although high-gamma oscillations are widely recognized for their significance in human motor control, their precise function on a cortical level remains el...

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## NIRS-BIDS: Brain Imaging Data Structure Extended to Near-Infrared Spectroscopy

 Luca  
Pollonini

 17

2025-01-27



1  
min



70  
words

OOSTENVELD ROBERT


**Summary:** Functional near-infrared spectroscopy (fNIRS) is an increasingly popular neuroimaging technique that measures cortical hemodynamic activity in a non-invasive and portable fashion. Although the fNIRS community has been successful in disseminating open-source processing tools and a standard file forma...

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## Pseudonymisation of neuroimages and data protection: Increasing access to data while retaining scientific utility

 Lyuba  
Zehl

 17

2025-06-26



1  
min



67  
words

OOSTENVELD ROBERT


**Summary:** For a number of years, facial features removal techniques such as 'defacing', 'skull stripping' and 'face masking/blurring', were considered adequate privacy preserving tools to openly share brain images. Scientifically, these measures were already a compromise between data protection requirements a...


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## Cycling on the Freeway: The perilous state of open-source neuroscience software

 Tim M  
Tierney

 17 2025-08-13

 1  
min

 74  
words

OOSTENVELD ROBERT


**Summary:** Most scientists need software to perform their research (Barker et al., 2020;Carver et al., 2022;Hettrick, 2014;Hettrick et al., 2014;Switters & Osimo, 2019), and neuroscientists are no exception. Whether we work with reaction times, electrophysiological signals, or magnetic resonance imaging data, ...


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## Optimal configuration of on-scalp OPMs with fixed channel counts

 Robert  
Oostenveld

 17 2025-08-13

 1  
min

 69  
words

OOSTENVELD ROBERT

**Summary:** Recent technological developments have brought optically pumped magnetometers (OPMs) within reach of the larger neuroscientific community. The current state-of-the-art consists of whole-head systems that measure the magnetic field at >100 locations. OPM sensors can be constructed to measure the fiel...

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## Swin-YOLO-SAM: a hybrid Transformer-based framework integrating Swin Transformer, YOLOv12, and SAM-2.1 for automated identification and segmentation of date palm leaf diseases



Ghassan  
Husnain



2025-10-01



1  
min



68  
words

LOW VISION

**Summary:** The cultivation of date palm (*Phoenix dactylifera* L.) is acutely impacted by numerous fungal, bacterial, and pest-related diseases that diminish yield, spoil fruit quality, and undermine long-term agricultural sustainability. The traditional methods of monitoring diseases, which rely heavily on expe...



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## Chronic endometritis diagnosis and fertility outcomes: an old unresolved question



Yohann  
Dabi



2025-10-01



1  
min



67  
words

LOW VISION

**Summary:** ABSTRACT: Chronic endometritis, defined by chronic inflammation of the endometrium, remains a clinical and biologic challenge even using hysteroscopy allowing a direct vision of the uterine cavity without anesthesia, and conventional histology using Hematoxylin and Eosin staining. Our primary object...



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## DTL: Parameter- and Memory-Efficient Disentangled Vision Learning



Jianxin  
Wu



2025-10-01



1  
min



77  
words

LOW VISION

**Summary:** The cost of finetuning a pretrained model on downstream tasks steadily increases as they grow larger. Parameter-efficient transfer learning (PETL) is proposed to reduce this cost by changing only a tiny subset of trainable parameters. But, the GPU memory footprint during training is not effectively ...



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## Exploring Vision-Based Active 3D Object Detection by Informativeness Characterization



Xi

Li



2025-10-01



1

min



76

words

LOW VISION

**Summary:** Vision-based 3D object detection (3DOD) gains lots of attention due to its low cost for deployment compared to Lidar-based tasks, while it suffers from labor-expensive data annotations. At the same time, active learning (AL) has shown great potential in reducing annotation costs in related tasks, wh...



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## Age-specific associations between intrinsic capacity impairments and self-rated health in community-dwelling adults: Insights from Taiwan longitudinal study on aging



Fei-Yuan

Hsiao



2025-10-01



1

min



32

words

LOW VISION

**Summary:** CONCLUSIONS: Age-specific patterns suggest targeted interventions: mental health support for middle-aged adults, mobility preservation for young-old adults, and vitality enhancement for the oldest adults. These findings provide guidance for age-tailored ICOPE strategies.



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## Artificial intelligence defines spatial patterns of tumor-infiltrating lymphocytes highly associated with outcome - a pan-GI cancer study



A  
Madabhushi



2025-10-01



1  
min



22  
words

LOW VISION

**Summary:** CONCLUSIONS: Our findings suggest that the spatial relationships of TILs and cancer nuclei are prognostic of survival across multiple GI cancer types.



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## Eagle-eye-inspired neuromorphic synaptic transistor array with ultrabroad dynamic range for adaptive machine vision



Wenping  
Hu



2025-10-01



1  
min



2  
words

LOW VISION



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## Recent progress in the patterning of perovskite films for photodetector applications



Huiming  
Cheng



2025-10-01



1  
min



65  
words

LOW VISION

**Summary:** Photodetectors, as the core devices for optical signal conversion, need to balance high efficiency, fast response, and low-cost fabrication. Perovskite, with its advantages of high carrier mobility and tunable band gaps, have become an ideal alternative to silicon-based materials. This paper systema...



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## Benchmarking foundation models as feature extractors for weakly supervised computational pathology



Jakob Nikolas  
Kather



2025-10-01



1  
min



66  
words

LOW VISION

**Summary:** Numerous pathology foundation models have been developed to extract clinically relevant information. There is currently limited literature independently evaluating these foundation models on external cohorts and clinically relevant tasks to uncover adjustments for future improvements. Here we benchm...



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## Comparison of visual quality and optical zones after TransPRK, SMILE, and FS-LASIK myopia correction procedures

 Zhongyi  
Yang



2025-10-01



1  
min



61  
words

LOW VISION

**Summary:** CONCLUSIONS: TransPRK has good postoperative visual quality, but its advantages may be mediated by its larger optical zone design. In terms of night vision performance, SMILE surgery can effectively preserve the biomechanical properties of the cornea, while FS-LASIK achieved comparable 6-month acuit...







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## The taste of trigeminal sensations: relation between taste, lingual tactile acuity, and spicy perception in patients with taste dysfunction

 Thomas Hummel

 2025-05-28  1 min  70 words


TACTILE ACUITY

**Summary:** In the oral cavity, oral stereognosis and chemesthesis refer to the abilities to recognize shapes and detect noxious substances, respectively, through various receptors distributed on the tongue. The absence of standardized methods to assess oral somatosensory perception has led to a lack of consens...

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## Measuring the Distribution of Tactile Acuity at the Index Finger and Thumb Fingertips

 Hiroyuki Kajimoto

 2025-06-17  1 min  75 words

TACTILE ACUITY


**Summary:** In our day-to-day activities, we utilize not only the pads of our fingers but also the sides and hemispherical tips when manipulating objects. For teleoperation systems to replicate these real-life interactions, tactile sensation must be presented and distributed across the entire fingertip. Thus, u...

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## Optimizing Vibrotactile Feedback for Sensory Substitution in the Thigh: Spatial Acuity and Frequency Characteristics

 Leah R  
Bent

 2025-06-27

 1  
min

 69  
words

TACTILE ACUITY


**Summary:** Amputation of a lower limb not only affects mobility but also interferes with sensory feedback, leading to an elevated risk of falls among individuals living with amputation. Sensory substitution, achieved through tactile displays embedded in transfemoral prosthetic sockets, presents a promising non...


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## Directional vibro-tactile hazard warnings for drivers with vision impairments

 Alex R  
Bowers

 2025-07-02

 1  
min

 80  
words

TACTILE ACUITY


**Summary:** Vision impairment may delay responses to hazards when driving. In a proof-of-concept driving simulator study, we evaluated a hazard warning device designed for vision impaired drivers. Three groups participated: 11 persons with central vision loss (CVL; median age 60 years), 12 with homonymous field...


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## Sensitivity and vagal reactivity to C-tactile-mediated affective touch in mild cognitive impairment due to Alzheimer's disease

 Cecilia  
Guariglia

 2025-08-01  1  
min

 64  
words

TACTILE ACUITY

**Summary:** BackgroundC-tactile (CT) afferents preferentially activate in response to slow caress-like touch, evoking a diffuse pleasant sensation and promoting autonomic regulation. According to Braak's classic model, the neurodegenerative process in Alzheimer's disease (AD) only affects somatosensory cortices...



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## Differences in tactile grid localization accuracy between people with back pain compared to individuals without pain

 Eric  
Fjeldheim

 2025-08-24  1  
min

 22  
words

TACTILE ACUITY

**Summary:** OBJECTIVES: The study aimed to investigate the grid localization test (GLT) between patients with lower back pain and those without back pain.

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## Eye Drop Instillation Success and Hand Function in Adults with Glaucoma: A Pilot Study



Paula Anne Newman-  
Casey



2025-09-09



1  
min



74  
words

TACTILE ACUITY

**Summary:** CONCLUSIONS: Despite hand function deficits, in this exploratory pilot study, adults with glaucoma demonstrated eye drop instillation success comparable to those without glaucoma, though with higher rates of bottle tip contact with the eye, skin, or eyelashes, suggesting an increased risk of potenti...



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## Functional evidence for early origin of tactile acuity in the vertebrate somatosensory system



Sviatoslav N  
Bagriantsev



2025-09-13



1  
min



58  
words

TACTILE ACUITY

**Summary:** Mammals and reptiles possess a sophisticated somatosensory system for precise tactile discrimination via mechanosensory end-organs, such as Meissner and Pacinian corpuscles and others. These structures detect sustained pressure, velocity, and vibrations, thereby facilitating nuanced environmental in...






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## The coarse mental map of the breast is anchored on the nipple

 Charles M  
Greenspon

 2025-09-18  1  
min

 86  
words

TACTILE ACUITY

**Summary:** Touch plays a key role in our perception of our body and shapes our interactions with the world, from the objects we manipulate to the people we touch. While the tactile sensibility of the hand has been extensively characterized, much less is known about touch on other parts of the body. Despite the...



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## Haptic Feedback Systems for Lower-Limb Prosthetic Applications: A Review of System Design, User Experience, and Clinical Insights

 Runar  
Unnthorsson

 2025-09-27  1  
min

 65  
words

TACTILE ACUITY


**Summary:** Systems presenting haptic information have emerged as an important technological advance in assisting individuals with sensory impairments or amputations, where the aim is to enhance sensory perception or provide sensory substitution through tactile feedback. These systems provide information on lim...


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## Exploring the use of smartphone applications during navigation-based tasks for individuals who are blind or who have low vision: future directions and priorities

 Joseph Paul  
Nemargut

 2025-08-25

 1  
min

 62  
words

**BRaille**


**Summary:** CONCLUSION: These results provide vital insights for technology developers about the perceived utility of smartphone apps for people with low vision or blindness during navigation. Our results highlight the importance of built-in accessibility features for users with visual impairments. As additiona...


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## Gradient Porous Flexible Pressure Sensors with the Relay Effect for High-Accuracy Braille-to-Speech Recognition

 Jianming  
Xu

 2025-08-25

 1  
min

 62  
words

**BRaille**

**Summary:** The development of highly sensitive, wide linear-range flexible pressure sensors is crucial for practical applications in human-computer interaction, physiological signal detection, and motion monitoring. However, traditional flexible pressure sensors often suffer from limited compressibility in the...

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

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## Individual and community level factors influencing modern contraceptive use among women of reproductive age in South Africa: a multilevel analysis

 Million  
Phiri

 2025-08-26  1  
min

 46  
words

**BRAILLE**


**Summary:** CONCLUSION: Sensory disability status influenced women's contraceptive behaviour in South Africa. Current family planning interventions should target women with sensory disabilities by prioritising accessible communication methods (e.g., braille, sign language), disability awareness training for hea...



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## Explosion-powered eversible tactile displays

 Robert F  
Shepherd

 2025-08-27  1  
min

 64  
words

**BRAILLE**


**Summary:** High-resolution electronic tactile displays stand to transform haptics for remote machine operation, virtual reality, and digital information access for people who are blind or visually impaired. Yet, increasing the resolution of these displays requires increasing the number of individually addressa...


 **Read full article:**

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## A Biomimetic Fiber-Entangled Permeable Electronic Skin for Strain-Insensitive and High-Resolution Tactile Sensing

 Zhijun  
Ma

 2025-08-28

 1  
min

 57  
words

[BRAILLE](#)


**Summary:** Electronic skins (e-skins) incorporating island architectures represent a promising platform for strain-insensitive tactile sensing by mechanically decoupling sensing units from deformations. However, conventional island designs encounter stress concentration issues caused by inherent modulus mismat...


 **Read full article:**

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## High-Density Tactile Sensor Array for Sub-Millimeter Texture Recognition

 Min  
Zhang

 2025-08-28

 1  
min

 64  
words

[BRAILLE](#)

**Summary:** High-density tactile sensor arrays that replicate human touch could restore texture perception in paralyzed individuals. However, conventional tactile sensor arrays face inherent trade-offs between spatial resolution, sensitivity, and crosstalk suppression due to microstructure size limitations and ...

 **Read full article:**

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## A Diachronic Investigation of the Change in Form and Formational-Semantic Systematicity of the Chinese Sign Language Lexicon



Hao  
Lin



2025-09-01



1  
min



72  
words

BRAILLE

**Summary:** It has been argued in previous research that several competing pressures guide the directions of language evolution (economy vs. redundancy; arbitrariness vs. systematicity). For sign languages, however, the effects of competing pressures on their change of lexical systems remain largely unclear. In...



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## Wireless Electrotactile System with Hydrogel-Based Electrodes for Conformal Tactile Interaction



Ji  
Liu



2025-09-02



1  
min



56  
words

BRAILLE

**Summary:** A wireless epidermal electrotactile interface is demonstrated through integration of skin-conformal electrodes and flexible circuitry, addressing existing limitations in haptic technology caused by mechanical mismatch and system-level integration challenges. This electrotactile system achieves low s...



Read full article:

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## Beyond access: rethinking assistive technology for individuals with visual impairments in Türkiye

Önder  
İşlek

17 2025-09-12

1  
min

55  
words

BRaille

**Summary:** CONCLUSION: Despite demonstrating adaptability, individuals with VI in Türkiye face significant structural barriers to equitable AT access. Informal learning limited public support, and a lack of locally adapted tools contribute to digital exclusion. A rights-based approach-emphasizing inclusive fun...

 Read full article:

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## High prevalence of bacterial STI, anal HPV, cytological abnormalities and anal lesions among MSM in Togo, 2021: a baseline analysis of the ANRS I MIE 12,400/DepIST-H cohort

Didier K  
Ekouevi

17 2025-09-27

1  
min

42  
words

BRaille

**Summary:** CONCLUSIONS: These findings emphasize the high prevalence of STIs among MSM and confirm the unusual distribution of HPV types in West Africa, with HPV35 being highly prevalent. A national strategy regarding STI screening and HPV vaccination in this key population is needed.

 Read full article:

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## Preliminary evidence for high-definition transcranial direct current stimulation effects on white matter microstructure and executive function in mild cognitive impairment



Huan

Li



2025-09-30



1

min



62

words

TDCS TACS TRNS

**Summary:** CONCLUSION: The findings suggest that HD-tDCS targeting the L-DLPFC may promote microstructural remodeling in white matter tracts, evidenced by elevated fractional anisotropy within the corticospinal and anterior thalamic pathways. While global cognitive measures remained stable, a trend toward impr...



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[utm\\_source=BucketBot&utm\\_medium=rss&utm\\_campaign=None&utm\\_content=143rKCPgMwbasrj66gQ1r1ebioUg42SIGRyVKSoW4m6X-ecQ00&fc=None&ff=20251002033757&v=2.18.0.post9+e462414](https://pubmed.ncbi.nlm.nih.gov/41025579/?utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=143rKCPgMwbasrj66gQ1r1ebioUg42SIGRyVKSoW4m6X-ecQ00&fc=None&ff=20251002033757&v=2.18.0.post9+e462414)

## Stepwise interventional psychiatry approach for major depression: A case series



Jean-Philippe

Miron



2025-09-30



1

min



46

words

TDCS TACS TRNS

**Summary:** CONCLUSIONS: This case series suggests that a sequential neuromodulation strategy may increase overall response rates in TRD by capturing different responder profiles across modalities. These findings support the feasibility of a pragmatic stepwise approach and highlight the need for controlled stud...






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## On the mechanisms of epidermal stemness and differentiation

 Raghvendra  
Singh

 2025-10-01  1  
min

 70  
words

TDCS TACS TRNS


**Summary:** High Wnt and low Notch activities characterize epidermal stem cells (SCs), while low Wnt and high Notch activities characterize the terminally differentiated epidermal cells (TDCs). However, the mechanism by which transit amplifying cells (TACs) are induced to become terminally differentiated remain...

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## Effects of Transcranial Direct Current Stimulation on pain and pain-related outcomes: an umbrella review

 Dmitriy  
Viderman

 2025-10-01  1  
min

 64  
words

TDCS TACS TRNS


**Summary:** CONCLUSIONS: Our findings suggest that tDCS might be effective for fibromyalgia, migraine, and neuropathic pain associated with spinal cord injury and stroke. However, further evidence is needed for chronic orofacial pain, multiple sclerosis, knee osteoarthritis, central post-stroke pain, intra-abdo...


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## A novel machine learning-based method to quantify the effect of transcranial direct current stimulation on opioid users

 Davoud  
Ahmadi

 2025-10-01

 1  
min

 19  
words

TDCS TACS TRNS

**Summary:** CONCLUSION: These findings suggest that tDCS can be an effective intervention for reducing craving in patients with opioid addiction.


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## Quantitative analysis of [<sup>18</sup>F]CHL2310, a novel PET ligand for cholesterol 24-Hydroxylase, in nonhuman primate brain

 Lu  
Wang

 2025-10-01

 1  
min

 32  
words

TDCS TACS TRNS


**Summary:** CONCLUSION: [<sup>18</sup>F]CHL2310 shows high in vivo specificity, favorable pharmacokinetic properties, and robust quantitative performance in non-human primates. These characteristics support its potential as a PET radiotracer for imaging CYP46A1 in human studies.


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## Dissemination and Impact of a Multimodal Pain Regimen on Analgesia Prescribing at an Academic Hospital

 Avi  
Bhavaraju


 2025-10-01

 1  
min

 30  
words

TDCS TACS TRNS


**Summary:** CONCLUSIONS: Implementation of an MMP protocol by a single division can facilitate the spread of nonopioid adjunctive pain medication use and decrease opioid utilization throughout surgical specialties in a hospital.


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## Developing a Trainee Advisory Committee Within a Pediatric Hospital Medicine Research Network

 Karen L  
Forbes

 2025-10-01

 1  
min

 62  
words

TDCS TACS TRNS

**Summary:** Medical research networks are essential for advancing clinical care. Despite the recognized importance of building research capacity and training future pediatric researchers, trainee engagement within these research networks remains inconsistent. To address this, the Paediatric Inpatient Research N...

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
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## Personalised dual-site alpha transcranial alternating current stimulation (tACS) targeting right frontoparietal network reduces craving in heroin use disorder

 Kai  
Yuan

 2025-10-01  1  
min

 2  
words

TDCS TACS TRNS



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## Effects of transcranial alternating current stimulation on cognitive function in older adults: a systematic review and meta-analysis of randomized controlled trials


 Yuxia  
Ma

 2025-10-01  1  
min

 42  
words

TDCS TACS TRNS

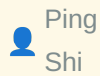
**Summary:** CONCLUSION: tACS intervention significantly improves immediate memory and delayed memory in older adults with AD. Further large-scale RCTs are needed to clarify the specific effects of tACS on various cognitive domains, and optimal stimulation parameters should be investigated to guide clinical prac...

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## AI-Driven Multimodal Brain-State Decoding for Personalized Closed-Loop TENS: A Comprehensive Review



Ping  
Shi



2025-09-27



1  
min



64  
words

FNIRS

**Summary:** Chronic pain is a dynamic, brain-wide condition that eludes effective management by conventional, static treatment approaches. Transcutaneous Electrical Nerve Stimulation (TENS), traditionally perceived as a simple and generic modality, is on the verge of a significant transformation. Guided by adva...



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## Exploring Imagined Movement for Brain-Computer Interface Control: An fNIRS and EEG Review



Jamshed  
Iqbal



2025-09-27



1  
min



66  
words

FNIRS

**Summary:** Brain-Computer Interfaces (BCIs) offer a non-invasive pathway for restoring motor function, particularly for individuals with limb loss. This review explored the effectiveness of Electroencephalography (EEG) and function Near-Infrared Spectroscopy (fNIRS) in decoding Motor Imagery (MI) movements for...



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## Sex Differences in Cortical Hemodynamic Responses During Interactive and Passive Tasks: An fNIRS Study Using the Nefroball System



Aleksandra  
Rył



2025-09-27



1  
min



69  
words

**fNIRS**

**Summary:** The present study aimed to investigate sex differences in the hemodynamic response of the cerebral cortex during interactive and passive tasks using functional near-infrared spectroscopy fNIRS. Ninety-seven healthy adults (63 women, 34 men) participated in the study. Participants performed two tasks...



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## Editorial: Advanced fNIRS applications in neuroscience and neurological disorders



Daifa  
Wang



2025-09-29



1  
min



2  
words

**fNIRS**



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## Brain network evolution in late preterm to term infants: a near-infrared spectroscopy imaging study



Yiwei

Li



2025-09-29



1

min



27

words

FNIRS

**Summary:** CONCLUSIONS: These results underscore the critical role of GA in shaping neonatal brain network functional organization and provide valuable insights for early intervention strategies in preterm infants.



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## Effectiveness and mechanism of moxibustion in treating chronic non-specific low back pain: study protocol for a multicenter randomized controlled trial



Han

Xiang



2025-09-29



1

min



67

words

FNIRS

**Summary:** INTRODUCTION: Chronic non-specific low back pain (CNLBP) represents the most commonly encountered subtype of low back pain (LBP) in clinical practice. It has no clearly identified etiological factors and is prone to recurrence, which severely compromises patients' quality of life. Moxibustion therap...




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## Effects of robot assisted mirror therapy on motor function and cortical activation in patients with right hemisphere damage

 Yifan Wang


 2025-09-29

 1 min

 75 words

FNIRS


**Summary:** Robot-assisted mirror therapy (MRT) is a cutting-edge rehabilitative treatment that combines mirror therapy and rehabilitation robots and can improve stroke patient participation in rehabilitation training. The aim of this study was to investigate the effects of MRT training in patients with right-h...


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## Advancing pain assessment in Alzheimer's disease and related dementias: Functional near-infrared spectroscopy for investigating brain activity

 Hyochol  
Ahn


 17 2025-09-30

 1  
min

 58  
words

**FNIRS**

**Summary:** CONCLUSION: fNIRS demonstrated feasibility as an objective pain assessment tool in ADRD. tDCS served only as a probe to induce cortical modulation for evaluating fNIRS performance. In this study, tDCS functioned as a probe to induce cortical modulation for evaluating fNIRS sensitivity, not as a ther...

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## MEFD dataset and GCSFormer model : Cross-subject emotion recognition based on multimodal physiological signals

 Wenbo Dong



2025-10-01



1 min



62 words

FNIRS

**Summary:** Cross-subject emotion recognition is an important research direction in the fields of affective computing and brain-computer interfaces, aiming to identify the emotional states of different individuals through physiological signals such as functional near-infrared spectroscopy (fNIRS) and electroenc...





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## Analysis of the analgesic mechanism of TENS-WAA in colonoscopy using the EEG-fNIRS system: a study protocol for a randomised controlled trial

 Fanfu  
Fang

 2025-10-01  1  
min

 62  
words

**FNIRS**


**Summary:** INTRODUCTION: Colonoscopy is an essential procedure for the early diagnosis of colorectal conditions; however, over 60% of patients undergoing non-sedated colonoscopy report moderate to severe pain. This study aims to investigate the central analgesic mechanisms of transcutaneous electrical nerve st...



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## Machine learning predictions from unpredictable chaos

 Guo-Wei  
Wei

 2025-09-30  1  
min

 68  
words

**BRAIN COMPUTER INTERFACE**

**Summary:** Chaos is omnipresent in nature, and its understanding provides enormous social and economic benefits. However, the unpredictability of chaotic systems is a textbook concept due to their sensitivity to initial conditions, aperiodic behaviour, fractal dimensions, nonlinearity and strange attractors. I...

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## EEG-based motor execution classification of upper and lower extremities using machine learning

 Cengiz  
Tepe

 2025-10-01

 1  
min

 61  
words

BRAIN COMPUTER INTERFACE

**Summary:** This study classifies upper- and lower-extremity motor execution from electroencephalography (EEG). We compared two feature extractors, statistical features and Common Spatial Patterns (CSP), and four classifiers: K-Nearest Neighbors, Linear Discriminant Analysis (LDA), Multilayer Perceptron, and Su...


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## The Contribution of Wearable Devices and Artificial Intelligence to Promoting Healthy Aging

 Chaiyavat  
Chaiysut

 2025-10-01

 1  
min

 51  
words

BRAIN COMPUTER INTERFACE

**Summary:** CONCLUSION: The evolving landscape of wearable technologies, exemplified by Fitbit®, Acti- Graph™, and other interventions, holds substantial promise for reshaping healthcare approaches for the aging population. Addressing the limitations will be crucial as research progresses to ensure the effectiv...


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## Revolutionizing brain-computer interfaces: Compact and high-speed wireless neural signal acquisition

 Gang  
Wang

 2025-10-01

 1  
min

 64  
words

BRAIN COMPUTER INTERFACE

**Summary:** A brain-computer interface (BCI) facilitates the connection between the human brain and external devices by decoding neurophysiological signals, thereby enabling seamless interaction between humans and machines. However, existing neural signal acquisition systems often suffer from limited channel co...


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## An EEG-EMG-based Hybrid Brain-Computer Interface for Decoding Tones in Silent and Audible Speech

 Chunzhi  
Yi

 2025-10-01

 1  
min

 72  
words

BRAIN COMPUTER INTERFACE

**Summary:** Speech recognition can be widely applied to support people with language disabilities by enabling them to communicate through brain-computer interfaces (BCIs), thus improving their quality of life. Despite the essential role of tonal variations in conveying semantic meaning, there have been limited ...


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## MEFD dataset and GCSFormer model : Cross-subject emotion recognition based on multimodal physiological signals

 Wenbo Dong

 2025-10-01

 1 min

 62 words

BRAIN COMPUTER INTERFACE

**Summary:** Cross-subject emotion recognition is an important research direction in the fields of affective computing and brain-computer interfaces, aiming to identify the emotional states of different individuals through physiological signals such as functional near-infrared spectroscopy (fNIRS) and electroenc...

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## High - Quality Decoding of RGB Images from the Neuronal Signals of the Pigeon Optic Tectum



Songwei  
Wang



2025-10-01



1  
min



38  
words

BRAIN COMPUTER INTERFACE

**Summary:** CONCLUSIONS: This research provides a novel technical pathway for high-quality visual neural decoding, with robust experimental metrics validating its effectiveness. It also offers experimental evidence to support investigations into the information processing mechanisms of the avian visual pathway.



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## Transfer learning via distributed brain recordings enables reliable speech decoding



Nitin  
Tandon



2025-10-01



1  
min



63  
words

BRAIN COMPUTER INTERFACE

**Summary:** Speech brain-computer interfaces (BCIs) combine neural recordings with large language models to achieve real-time intelligible speech. However, these decoders rely on dense, intact cortical coverage and are challenging to scale across individuals with heterogeneous brain organization. To derive scal...



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[tbw4049Wgf\\_RdKXdtNCvGW0IVBZFpHe7zaN4k4DwoD5&fc=None&ff=20251002033746&v=2.18.0.post9+e462414](https://pubmed.ncbi.nlm.nih.gov/41034198/?utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1rSUu--tbw4049Wgf_RdKXdtNCvGW0IVBZFpHe7zaN4k4DwoD5&fc=None&ff=20251002033746&v=2.18.0.post9+e462414)

## Peptide design through binding interface mimicry with PepMimic



Jianzhu  
Ma



2025-10-01



1  
min



71  
words

BRAIN COMPUTER INTERFACE

**Summary:** Peptides offer advantages for targeted therapy, including oral bioavailability, cellular permeability and high specificity, setting them apart from conventional small molecules and biologics. Here we develop an artificial intelligence algorithm, PepMimic, to transform a known receptor or an existing...



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## Physical Activity and Depressive Mood Share the Structural Connectivity Between Motor and Reward Networks



Tianzi  
Jiang



2025-10-01



1  
min



73  
words

BRAIN COMPUTER INTERFACE

**Summary:** In various studies, exercise has been revealed to have a positive effect on alleviating depressive symptoms. However, the neural basis behind this phenomenon remains unknown, as well as its underlying biological mechanism. In this study, we used a large neuroimaging cohort [n = 1,027, major depressi...





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## Implicit learning of melodic structure: A role for pitch?





 2024-01-22  1 min  180 words

PSYCHOMUSICOLOGY

**Summary:** Growing evidence suggests that pitch influences musical processing, with melodic processing being enhanced in higher pitch ranges (e.g., Fujioka et al., 2005) and rhythmic processing being enhanced in lower pitches, and these effects may have a basis in elementary properties of the auditory system (...)

 Read full article:  
<http://doi.org/10.1037/pmu0000303>

## Open Source Google Maps Street View Panorama Scraper.




 /u/ yousephx  2025-10-01  1 min  305 words

REDDIT PYTHON

**Summary:** <!-- SC\_OFF --><div class="md"><p><strong>What My Project Does</strong></p> <p>- With <a href="https://github.com/yousephzidan/gsvp-dl">gsvp-dl</a>, an open source solution written in Python, you are able to download millions of panorama images off Google Maps Street View.</p> <p><strong>Comparison...

 Read full article:  
[https://www.reddit.com/r/Python/comments/1nvnyjr/open\\_source\\_google\\_maps\\_street\\_view\\_panorama/](https://www.reddit.com/r/Python/comments/1nvnyjr/open_source_google_maps_street_view_panorama/)

## F3: Open-source data file format for the future [pdf]

 2025-10-01  1 min  2 words





HACKER NEWS

**Summary:** [Comments](https://news.ycombinator.com/item?id=45437759)

 Read full article:

<https://db.cs.cmu.edu/papers/2025/zeng-sigmod2025.pdf>

## The biggest semantic mess in Futhark

 jmillikin  2025-10-02  1 min  13 words

HACKER NEWS

**Summary:**

Article URL: <https://futhark-lang.org/blog/2025-09-26-the-biggest-semantic-mess.html>

Comments URL: <https://news.ycombinator.com/item?id=45445260>...

 Read full article:

<https://futhark-lang.org/blog/2025-09-26-the-biggest-semantic-mess.html>

## Data- and Physics-Driven Deep Learning Based Reconstruction for Fast MRI: Fundamentals and Methodologies

 2024-10-22  1 min  151 words



REVIEWS BIOMEDICAL ENGINEERING

**Summary:** Magnetic Resonance Imaging (MRI) is a pivotal clinical diagnostic tool, yet its extended scanning times often compromise patient comfort and image quality, especially in volumetric, temporal and quantitative scans. This review elucidates recent advances in MRI acceleration via data and physics-drive...

 Read full article:

<http://ieeexplore.ieee.org/document/10729663>

## Artificial General Intelligence for Medical Imaging Analysis

 2024-11-07  1 min  159 words

REVIEWS BIOMEDICAL ENGINEERING




**Summary:** Large-scale Artificial General Intelligence (AGI) models, including Large Language Models (LLMs) such as ChatGPT/GPT-4, have achieved unprecedented success in a variety of general domain tasks. Yet, when applied directly to specialized domains like medical imaging, which require in-depth expertise, ...

 Read full article:

<http://ieeexplore.ieee.org/document/10746601>




## Exhaled Breath Analysis: From Laboratory Test to Wearable Sensing

 2024-10-16  1 min  182 words



REVIEWS BIOMEDICAL ENGINEERING

**Summary:** Breath analysis and monitoring have emerged as pivotal components in both clinical research and daily health management, particularly in addressing the global health challenges posed by respiratory and metabolic disorders. The advancement of breath analysis strategies necessitates a multidisciplinary...

 Read full article:

<http://ieeexplore.ieee.org/document/10720187>

## Earable Multimodal Sensing and Stimulation: A Prospective Toward Unobtrusive Closed-Loop Biofeedback

 2024-11-29  1 min  200 words




REVIEWS BIOMEDICAL ENGINEERING

**Summary:** The human ear has emerged as a bidirectional gateway to the brain's and body's signals. Recent advances in around-the-ear and in-ear sensors have enabled the assessment of biomarkers and physiomarkers derived from brain and cardiac activity using ear-electroencephalography (ear-EEG), photoplethysmog...

 Read full article:

<http://ieeexplore.ieee.org/document/10771694>



# Editorial: Harnessing Reviews to Advance Biomedical Engineering's New Horizons

 2025-01-28  1 min  1 words

REVIEWS BIOMEDICAL ENGINEERING

 Read full article:  
<http://ieeexplore.ieee.org/document/10856220>




## Table of Contents

 2025-01-28  1 min  1 words

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## IEEE Engineering in Medicine and Biology Society

 2025-01-28  1 min  1 words

REVIEWS BIOMEDICAL ENGINEERING

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## Front Cover

 2025-01-28  1 min  1 words



REVIEWS BIOMEDICAL ENGINEERING



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## Electroencephalographic Functional Connectivity, Heartrate Synchrony, and Eye Movements Reveal Distinct Components within Narrative Engagement and Immersion

 2025-09-08  1 min  220 words

COGNITIVE NEUROSCIENCE



**Summary:** Storytelling is a fundamental and universal human behavior, representing a vehicle for cultural information exchange throughout human history. In the present day, consumption of narrative audiovisual media is one of the most common recreational activities worldwide. Despite the importance and ubiqui...



Read full article:

<http://ieeexplore.ieee.org/document/11153361>

## Object Ownership Processing in Peripersonal Space: An Electroencephalographic Study

 2025-09-08  1 min  251 words

COGNITIVE NEUROSCIENCE

**Summary:** A fundamental aspect of interacting with objects in the environment is the ability to distinguish between objects that can be directly acted upon in the peripersonal space (PPS) and those out of immediate reach in the extrapersonal space (EPS). Performing appropriate actions also requires integratin...

 Read full article:

<http://ieeexplore.ieee.org/document/11153352>

## Neural Signatures of Recollection Are Sensitive to Memory Quality and Specific Event Features

 2025-09-08  1 min  243 words

COGNITIVE NEUROSCIENCE

**Summary:** Episodic memories reflect a bound representation of multimodal features that can be recollected with varying levels of precision. Recent fMRI investigations have demonstrated that the precision and content of information retrieved from memory engage a network of posterior medial-temporal and parieta...

 Read full article:

<http://ieeexplore.ieee.org/document/11153355>

## Transient and Sustained Neuromagnetic Representation of Consonance and Dissonance in Harmonic Sequences



2025-09-08

1  
min244  
words

COGNITIVE NEUROSCIENCE

**Summary:** The perception of musical consonance/dissonance (C/D) relies on basic properties of the auditory system, and prior investigations have shown that C/D sounds elicit strongly divergent neurophysiological activity in human auditory cortex. However, studies are missing that assess transient (P1, N1, P2)...



Read full article:

<http://ieeexplore.ieee.org/document/11153362>

## Disrupted Regional Dynamics of Structure-Function Connectivity Coupling in Euthymic Bipolar Disorder



Ye, Y., Ma, K., Ji, E., Zong, X., Hu, M., Liang, Z., Huang, G., Biswal, B. B., Duan, X., Zhang, L.



2025-10-01

1  
min271  
words

BIORXIV NEUROSCIENCE

**Summary:** Background: Bipolar disorder (BD) is characterized by persistent disturbances in emotional regulation and cognitive function, even during euthymia, yet its neural mechanisms remain unclear. Given evidence of structural and dynamic functional connectivity (dFC) abnormalities in BD, investigating dyna...



Read full article:

<https://www.biorxiv.org/content/10.1101/2025.09.29.679408v1?rss=1>

## A validated set of neural gene reporter mice and chemical tracers tools for mapping knee innervating neurons



Cortez, I., Leynes, C., Belizaire, V., Haelterman, N. A., Lee, B., Ray, R.



2025-10-01



1 min



307 words

BIORXIV NEUROSCIENCE

**Summary:** Joint pain is an increasing concern for our aging population, as current therapies to slow joint disease progression or reduce pain are largely ineffective and often carry significant health and dependency risks. Age and joint disease induce changes to all tissues that make up the joint, including t...



Read full article:

<https://www.biorxiv.org/content/10.1101/2025.09.29.679397v1?rss=1>

## Target engagement in human motor cortex induced by constant sinusoidal and amplitude-modulated transcranial AC stimulation



Takemi, M., Madsen, M. A. J., Kesselheim, J., Siebner, H. R.



2025-10-01



1 min



265 words

BIORXIV NEUROSCIENCE

**Summary:** Transcranial alternating current stimulation (tACS) is a noninvasive technique for modulating brain oscillations. While sinusoidal tACS (sin-tACS) delivers current at a constant amplitude, amplitude-modulated tACS (AM-tACS) uses a high-frequency carrier modulated by a low-frequency envelope. We syst...





Read full article:

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## Hormonal contraceptive use is associated with reduced central serotonergic activity indexed by the loudness dependence of auditory evoked potentials

 Stein  
Andersson

 2025-10-01  1  
min

 206  
words

FRONTIERS HUMAN NEUROSCIENCE



**Summary:** ObjectiveHormonal contraceptives (HCs) are linked to mood disturbances, but the neurobiological mechanisms remain unclear. This study investigated whether HC use is associated with altered central serotonergic activity, using the loudness dependence of auditory evoked potentials (LDAEP).MethodsFifty...


 Read full article:

<https://www.frontiersin.org/articles/10.3389/fnhum.2025.1647425>

## 4D trajectory prediction for inbound flights


 Jie  
Dai

 2025-09-17  1  
min

 177  
words


FRONTIERS NEUROBOTICS


**Summary:** IntroductionTo address the challenges of cumulative errors, insufficient modeling of complex spatiotemporal features, and limitations in computational efficiency and generalization ability in 4D trajectory prediction, this paper proposes a high-precision, robust prediction method.MethodsA hybrid mod...

 Read full article:


<https://www.frontiersin.org/articles/10.3389/fnbot.2025.1625074>

## Correction: Pre-training, personalization, and self-calibration: all a neural network-based myoelectric decoder needs

 Kianoush  
Nazarpour

 2025-09-19

 1  
min


 0  
words



FRONTIERS NEUROBOTICS


 Read full article:

<https://www.frontiersin.org/articles/10.3389/fnbot.2025.1675642>

## Personalized whole-brain models of seizure propagation

 Edmundo Lopez-Sola, Borja Mercadal, Èlia Lleal-Custey, Ricardo Salvador, Roser Sanchez-Todo,  
Fabrice Wendling, Fabrice Bartolomei and Giulio Ruffini

 2025-09-28  1  
min

 216  
words

JOURNAL NEURAL ENGINEERING

**Summary:** Objective. Computational modeling has recently emerged as a powerful tool to better understand seizure dynamics and guide new treatment strategies. This work aims to develop and personalize whole-brain computational models in epilepsy using multimodal clinical data to simulate and evaluate individua...

 Read full article:

<http://iopscience.iop.org/article/10.1088/1741-2552/ae08e9>



## The impact of CSF-filled cavities on scalp EEG and its implications



Maria Carla  
Piastra



2024-06-14



1  
min



64  
words

OOSTENVELD ROBERT

**Summary:** Previous studies have found electroencephalogram (EEG) amplitude and scalp topography differences between neurotypical and neurological/neurosurgical groups, being interpreted at the cognitive level. However, these comparisons are invariably accompanied by anatomical changes. Critical to EEG are the...



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## Motion-BIDS: an extension to the brain imaging data structure to organize motion data for reproducible research



Julius  
Welzel



2024-07-02



1  
min



72  
words

OOSTENVELD ROBERT

**Summary:** We present an extension to the Brain Imaging Data Structure (BIDS) for motion data. Motion data is frequently recorded alongside human brain imaging and electrophysiological data. The goal of Motion-BIDS is to make motion data interoperable across different laboratories and with other data modalities...






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## One hundred years of EEG for brain and behaviour research

 Pedro Valdes-Sosa

 2024-08-22  1 min

 2 words

OOSTENVELD ROBERT



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## Freezing of gait in Parkinson's disease is related to imbalanced stopping-related cortical activity


 Richard J A van Wezel

 2024-09-04  1 min

 65 words

OOSTENVELD ROBERT

**Summary:** Freezing of gait, characterized by involuntary interruptions of walking, is a debilitating motor symptom of Parkinson's disease that restricts people's autonomy. Previous brain imaging studies investigating the mechanisms underlying freezing were restricted to scan people in supine positions and yie...

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## The past, present, and future of the brain imaging data structure (BIDS)



Krzysztof J  
Gorgolewski



2024-09-23



1  
min



82  
words

OOSTENVELD ROBERT

**Summary:** The Brain Imaging Data Structure (BIDS) is a community-driven standard for the organization of data and metadata from a growing range of neuroscience modalities. This paper is meant as a history of how the standard has developed and grown over time. We outline the principles behind the project, the ...



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## Human cortical high-gamma power scales with movement rate in healthy participants and stroke survivors



Fanny  
Quandt



2025-01-09



1  
min



65  
words

OOSTENVELD ROBERT

**Summary:** Motor cortical high-gamma oscillations (60-90 Hz) occur at movement onset and are spatially focused over the contralateral primary motor cortex. Although high-gamma oscillations are widely recognized for their significance in human motor control, their precise function on a cortical level remains el...





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## NIRS-BIDS: Brain Imaging Data Structure Extended to Near-Infrared Spectroscopy

 Luca  
Pollonini

 2025-01-27

 1  
min

 70  
words

OOSTENVELD ROBERT


**Summary:** Functional near-infrared spectroscopy (fNIRS) is an increasingly popular neuroimaging technique that measures cortical hemodynamic activity in a non-invasive and portable fashion. Although the fNIRS community has been successful in disseminating open-source processing tools and a standard file forma...


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## Pseudonymisation of neuroimages and data protection: Increasing access to data while retaining scientific utility

 Lyuba  
Zehl

 2025-06-26

 1  
min

 67  
words

OOSTENVELD ROBERT


**Summary:** For a number of years, facial features removal techniques such as 'defacing', 'skull stripping' and 'face masking/blurring', were considered adequate privacy preserving tools to openly share brain images. Scientifically, these measures were already a compromise between data protection requirements a...


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## Cycling on the Freeway: The perilous state of open-source neuroscience software

 Tim M  
Tierney

 17 2025-08-13

 1  
min

 74  
words

OOSTENVELD ROBERT


**Summary:** Most scientists need software to perform their research (Barker et al., 2020;Carver et al., 2022;Hettrick, 2014;Hettrick et al., 2014;Switters & Osimo, 2019), and neuroscientists are no exception. Whether we work with reaction times, electrophysiological signals, or magnetic resonance imaging data, ...


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## Optimal configuration of on-scalp OPMs with fixed channel counts

 Robert  
Oostenveld

 17 2025-08-13

 1  
min

 69  
words

OOSTENVELD ROBERT

**Summary:** Recent technological developments have brought optically pumped magnetometers (OPMs) within reach of the larger neuroscientific community. The current state-of-the-art consists of whole-head systems that measure the magnetic field at >100 locations. OPM sensors can be constructed to measure the fiel...

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## Swin-YOLO-SAM: a hybrid Transformer-based framework integrating Swin Transformer, YOLOv12, and SAM-2.1 for automated identification and segmentation of date palm leaf diseases



Ghassan  
Husnain



2025-10-01



1  
min



68  
words

LOW VISION

**Summary:** The cultivation of date palm (*Phoenix dactylifera* L.) is acutely impacted by numerous fungal, bacterial, and pest-related diseases that diminish yield, spoil fruit quality, and undermine long-term agricultural sustainability. The traditional methods of monitoring diseases, which rely heavily on expe...



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## Chronic endometritis diagnosis and fertility outcomes: an old unresolved question



Yohann  
Dabi



2025-10-01



1  
min



67  
words

LOW VISION

**Summary:** ABSTRACT: Chronic endometritis, defined by chronic inflammation of the endometrium, remains a clinical and biologic challenge even using hysteroscopy allowing a direct vision of the uterine cavity without anesthesia, and conventional histology using Hematoxylin and Eosin staining. Our primary object...



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## DTL: Parameter- and Memory-Efficient Disentangled Vision Learning



Jianxin  
Wu



2025-10-01



1  
min



77  
words

LOW VISION

**Summary:** The cost of finetuning a pretrained model on downstream tasks steadily increases as they grow larger. Parameter-efficient transfer learning (PETL) is proposed to reduce this cost by changing only a tiny subset of trainable parameters. But, the GPU memory footprint during training is not effectively ...



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## Exploring Vision-Based Active 3D Object Detection by Informativeness Characterization



Xi

Li



2025-10-01



1

min



76

words

LOW VISION

**Summary:** Vision-based 3D object detection (3DOD) gains lots of attention due to its low cost for deployment compared to Lidar-based tasks, while it suffers from labor-expensive data annotations. At the same time, active learning (AL) has shown great potential in reducing annotation costs in related tasks, wh...



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## Age-specific associations between intrinsic capacity impairments and self-rated health in community-dwelling adults: Insights from Taiwan longitudinal study on aging



Fei-Yuan

Hsiao



2025-10-01



1

min



32

words

LOW VISION

**Summary:** CONCLUSIONS: Age-specific patterns suggest targeted interventions: mental health support for middle-aged adults, mobility preservation for young-old adults, and vitality enhancement for the oldest adults. These findings provide guidance for age-tailored ICOPE strategies.



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## Artificial intelligence defines spatial patterns of tumor-infiltrating lymphocytes highly associated with outcome - a pan-GI cancer study



A  
Madabhushi



2025-10-01



1  
min



22  
words

LOW VISION

**Summary:** CONCLUSIONS: Our findings suggest that the spatial relationships of TILs and cancer nuclei are prognostic of survival across multiple GI cancer types.



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## Eagle-eye-inspired neuromorphic synaptic transistor array with ultrabroad dynamic range for adaptive machine vision



Wenping  
Hu



2025-10-01



1  
min



2  
words

LOW VISION



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## Recent progress in the patterning of perovskite films for photodetector applications



Huiming  
Cheng



2025-10-01



1  
min



65  
words

LOW VISION

**Summary:** Photodetectors, as the core devices for optical signal conversion, need to balance high efficiency, fast response, and low-cost fabrication. Perovskite, with its advantages of high carrier mobility and tunable band gaps, have become an ideal alternative to silicon-based materials. This paper systema...



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## Benchmarking foundation models as feature extractors for weakly supervised computational pathology



Jakob Nikolas  
Kather



2025-10-01



1  
min



66  
words

LOW VISION

**Summary:** Numerous pathology foundation models have been developed to extract clinically relevant information. There is currently limited literature independently evaluating these foundation models on external cohorts and clinically relevant tasks to uncover adjustments for future improvements. Here we benchm...





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## Comparison of visual quality and optical zones after TransPRK, SMILE, and FS-LASIK myopia correction procedures

 Zhongyi  
Yang

 2025-10-01

 1  
min

 61  
words

LOW VISION

**Summary:** CONCLUSIONS: TransPRK has good postoperative visual quality, but its advantages may be mediated by its larger optical zone design. In terms of night vision performance, SMILE surgery can effectively preserve the biomechanical properties of the cornea, while FS-LASIK achieved comparable 6-month acuit...




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## The taste of trigeminal sensations: relation between taste, lingual tactile acuity, and spicy perception in patients with taste dysfunction

 Thomas Hummel

 2025-05-28  1 min  70 words


TACTILE ACUITY

**Summary:** In the oral cavity, oral stereognosis and chemesthesis refer to the abilities to recognize shapes and detect noxious substances, respectively, through various receptors distributed on the tongue. The absence of standardized methods to assess oral somatosensory perception has led to a lack of consens...

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## Measuring the Distribution of Tactile Acuity at the Index Finger and Thumb Fingertips

 Hiroyuki Kajimoto

 2025-06-17  1 min  75 words


TACTILE ACUITY


**Summary:** In our day-to-day activities, we utilize not only the pads of our fingers but also the sides and hemispherical tips when manipulating objects. For teleoperation systems to replicate these real-life interactions, tactile sensation must be presented and distributed across the entire fingertip. Thus, u...

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## Optimizing Vibrotactile Feedback for Sensory Substitution in the Thigh: Spatial Acuity and Frequency Characteristics

 Leah R  
Bent

 2025-06-27

 1  
min

 69  
words

TACTILE ACUITY


**Summary:** Amputation of a lower limb not only affects mobility but also interferes with sensory feedback, leading to an elevated risk of falls among individuals living with amputation. Sensory substitution, achieved through tactile displays embedded in transfemoral prosthetic sockets, presents a promising non...


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## Directional vibro-tactile hazard warnings for drivers with vision impairments

 Alex R  
Bowers

 2025-07-02

 1  
min

 80  
words

TACTILE ACUITY


**Summary:** Vision impairment may delay responses to hazards when driving. In a proof-of-concept driving simulator study, we evaluated a hazard warning device designed for vision impaired drivers. Three groups participated: 11 persons with central vision loss (CVL; median age 60 years), 12 with homonymous field...



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## Sensitivity and vagal reactivity to C-tactile-mediated affective touch in mild cognitive impairment due to Alzheimer's disease

 Cecilia  
Guariglia

 17 2025-08-01  1  
min

 64  
words

TACTILE ACUITY

**Summary:** BackgroundC-tactile (CT) afferents preferentially activate in response to slow caress-like touch, evoking a diffuse pleasant sensation and promoting autonomic regulation. According to Braak's classic model, the neurodegenerative process in Alzheimer's disease (AD) only affects somatosensory cortices...



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## Differences in tactile grid localization accuracy between people with back pain compared to individuals without pain

 Eric  
Fjeldheim

 17 2025-08-24  1  
min

 22  
words

TACTILE ACUITY

**Summary:** OBJECTIVES: The study aimed to investigate the grid localization test (GLT) between patients with lower back pain and those without back pain.

 **Read full article:**

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## Eye Drop Instillation Success and Hand Function in Adults with Glaucoma: A Pilot Study



Paula Anne Newman-  
Casey



2025-09-09



1  
min



74  
words

TACTILE ACUITY

**Summary:** CONCLUSIONS: Despite hand function deficits, in this exploratory pilot study, adults with glaucoma demonstrated eye drop instillation success comparable to those without glaucoma, though with higher rates of bottle tip contact with the eye, skin, or eyelashes, suggesting an increased risk of potenti...



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## Functional evidence for early origin of tactile acuity in the vertebrate somatosensory system



Sviatoslav N  
Bagriantsev



2025-09-13



1  
min



58  
words

TACTILE ACUITY

**Summary:** Mammals and reptiles possess a sophisticated somatosensory system for precise tactile discrimination via mechanosensory end-organs, such as Meissner and Pacinian corpuscles and others. These structures detect sustained pressure, velocity, and vibrations, thereby facilitating nuanced environmental in...





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## The coarse mental map of the breast is anchored on the nipple

 Charles M  
Greenspon

 2025-09-18  1  
min

 86  
words

TACTILE ACUITY

**Summary:** Touch plays a key role in our perception of our body and shapes our interactions with the world, from the objects we manipulate to the people we touch. While the tactile sensibility of the hand has been extensively characterized, much less is known about touch on other parts of the body. Despite the...



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## Haptic Feedback Systems for Lower-Limb Prosthetic Applications: A Review of System Design, User Experience, and Clinical Insights

 Runar  
Unnthorsson

 2025-09-27  1  
min

 65  
words

TACTILE ACUITY

**Summary:** Systems presenting haptic information have emerged as an important technological advance in assisting individuals with sensory impairments or amputations, where the aim is to enhance sensory perception or provide sensory substitution through tactile feedback. These systems provide information on lim...


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## Exploring the use of smartphone applications during navigation-based tasks for individuals who are blind or who have low vision: future directions and priorities

 Joseph Paul  
Nemargut

 2025-08-25  1 min  62 words


**BRaille**




**Summary:** CONCLUSION: These results provide vital insights for technology developers about the perceived utility of smartphone apps for people with low vision or blindness during navigation. Our results highlight the importance of built-in accessibility features for users with visual impairments. As additiona...

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## Gradient Porous Flexible Pressure Sensors with the Relay Effect for High-Accuracy Braille-to-Speech Recognition

 Jianming  
Xu

 2025-08-25  1 min  62 words

**BRaille**



**Summary:** The development of highly sensitive, wide linear-range flexible pressure sensors is crucial for practical applications in human-computer interaction, physiological signal detection, and motion monitoring. However, traditional flexible pressure sensors often suffer from limited compressibility in the...


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## Individual and community level factors influencing modern contraceptive use among women of reproductive age in South Africa: a multilevel analysis

 Million  
Phiri

 2025-08-26  1  
min

 46  
words

**BRAILLE**


**Summary:** CONCLUSION: Sensory disability status influenced women's contraceptive behaviour in South Africa. Current family planning interventions should target women with sensory disabilities by prioritising accessible communication methods (e.g., braille, sign language), disability awareness training for hea...



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## Explosion-powered eversible tactile displays

 Robert F  
Shepherd

 2025-08-27  1  
min

 64  
words

**BRAILLE**


**Summary:** High-resolution electronic tactile displays stand to transform haptics for remote machine operation, virtual reality, and digital information access for people who are blind or visually impaired. Yet, increasing the resolution of these displays requires increasing the number of individually addressa...


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## A Biomimetic Fiber-Entangled Permeable Electronic Skin for Strain-Insensitive and High-Resolution Tactile Sensing

 Zhijun  
Ma

 2025-08-28

 1  
min

 57  
words

[BRAILLE](#)


**Summary:** Electronic skins (e-skins) incorporating island architectures represent a promising platform for strain-insensitive tactile sensing by mechanically decoupling sensing units from deformations. However, conventional island designs encounter stress concentration issues caused by inherent modulus mismat...


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## High-Density Tactile Sensor Array for Sub-Millimeter Texture Recognition

 Min  
Zhang

 2025-08-28

 1  
min

 64  
words

[BRAILLE](#)

**Summary:** High-density tactile sensor arrays that replicate human touch could restore texture perception in paralyzed individuals. However, conventional tactile sensor arrays face inherent trade-offs between spatial resolution, sensitivity, and crosstalk suppression due to microstructure size limitations and ...

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## A Diachronic Investigation of the Change in Form and Formational-Semantic Systematicity of the Chinese Sign Language Lexicon



Hao  
Lin



2025-09-01



1  
min



72  
words

BRAILLE

**Summary:** It has been argued in previous research that several competing pressures guide the directions of language evolution (economy vs. redundancy; arbitrariness vs. systematicity). For sign languages, however, the effects of competing pressures on their change of lexical systems remain largely unclear. In...



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## Wireless Electrotactile System with Hydrogel-Based Electrodes for Conformal Tactile Interaction



Ji  
Liu



2025-09-02



1  
min



56  
words

BRAILLE

**Summary:** A wireless epidermal electrotactile interface is demonstrated through integration of skin-conformal electrodes and flexible circuitry, addressing existing limitations in haptic technology caused by mechanical mismatch and system-level integration challenges. This electrotactile system achieves low s...



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## Beyond access: rethinking assistive technology for individuals with visual impairments in Türkiye

Önder  
İşlek



2025-09-12



1  
min



55  
words

BRILLE

**Summary:** CONCLUSION: Despite demonstrating adaptability, individuals with VI in Türkiye face significant structural barriers to equitable AT access. Informal learning limited public support, and a lack of locally adapted tools contribute to digital exclusion. A rights-based approach-emphasizing inclusive fun...

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## High prevalence of bacterial STI, anal HPV, cytological abnormalities and anal lesions among MSM in Togo, 2021: a baseline analysis of the ANRS I MIE 12,400/DepIST-H cohort

Didier K  
Ekouevi



2025-09-27



1  
min



42  
words

BRILLE

**Summary:** CONCLUSIONS: These findings emphasize the high prevalence of STIs among MSM and confirm the unusual distribution of HPV types in West Africa, with HPV35 being highly prevalent. A national strategy regarding STI screening and HPV vaccination in this key population is needed.

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## Preliminary evidence for high-definition transcranial direct current stimulation effects on white matter microstructure and executive function in mild cognitive impairment



Huan

Li



2025-09-30



1

min



62

words

TDCS TACS TRNS

**Summary:** CONCLUSION: The findings suggest that HD-tDCS targeting the L-DLPFC may promote microstructural remodeling in white matter tracts, evidenced by elevated fractional anisotropy within the corticospinal and anterior thalamic pathways. While global cognitive measures remained stable, a trend toward impr...



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## Stepwise interventional psychiatry approach for major depression: A case series



Jean-Philippe

Miron



2025-09-30



1

min



46

words

TDCS TACS TRNS

**Summary:** CONCLUSIONS: This case series suggests that a sequential neuromodulation strategy may increase overall response rates in TRD by capturing different responder profiles across modalities. These findings support the feasibility of a pragmatic stepwise approach and highlight the need for controlled stud...






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## On the mechanisms of epidermal stemness and differentiation

 Raghvendra  
Singh

 2025-10-01  1  
min

 70  
words

TDCS TACS TRNS


**Summary:** High Wnt and low Notch activities characterize epidermal stem cells (SCs), while low Wnt and high Notch activities characterize the terminally differentiated epidermal cells (TDCs). However, the mechanism by which transit amplifying cells (TACs) are induced to become terminally differentiated remain...


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## Effects of Transcranial Direct Current Stimulation on pain and pain-related outcomes: an umbrella review

 Dmitriy  
Viderman

 2025-10-01  1  
min

 64  
words

TDCS TACS TRNS


**Summary:** CONCLUSIONS: Our findings suggest that tDCS might be effective for fibromyalgia, migraine, and neuropathic pain associated with spinal cord injury and stroke. However, further evidence is needed for chronic orofacial pain, multiple sclerosis, knee osteoarthritis, central post-stroke pain, intra-abdo...


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## A novel machine learning-based method to quantify the effect of transcranial direct current stimulation on opioid users

 Davoud  
Ahmadi

 2025-10-01

 1  
min

 19  
words

TDCS TACS TRNS

**Summary:** CONCLUSION: These findings suggest that tDCS can be an effective intervention for reducing craving in patients with opioid addiction.


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## Quantitative analysis of [<sup>18</sup>F]CHL2310, a novel PET ligand for cholesterol 24-Hydroxylase, in nonhuman primate brain

 Lu  
Wang

 2025-10-01

 1  
min

 32  
words

TDCS TACS TRNS

**Summary:** CONCLUSION: [<sup>18</sup>F]CHL2310 shows high in vivo specificity, favorable pharmacokinetic properties, and robust quantitative performance in non-human primates. These characteristics support its potential as a PET radiotracer for imaging CYP46A1 in human studies.


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## Dissemination and Impact of a Multimodal Pain Regimen on Analgesia Prescribing at an Academic Hospital

 Avi  
Bhavaraju

 17 2025-10-01

 1  
min

 30  
words

TDCS TACS TRNS


**Summary:** CONCLUSIONS: Implementation of an MMP protocol by a single division can facilitate the spread of nonopioid adjunctive pain medication use and decrease opioid utilization throughout surgical specialties in a hospital.


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## Developing a Trainee Advisory Committee Within a Pediatric Hospital Medicine Research Network

 Karen L  
Forbes

 17 2025-10-01

 1  
min

 62  
words

TDCS TACS TRNS

**Summary:** Medical research networks are essential for advancing clinical care. Despite the recognized importance of building research capacity and training future pediatric researchers, trainee engagement within these research networks remains inconsistent. To address this, the Paediatric Inpatient Research N...


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
[https://pubmed.ncbi.nlm.nih.gov/41033682/?](https://pubmed.ncbi.nlm.nih.gov/41033682/?utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=143rKCPgMwbasrj66gQ1r1ebioUg42SIGRyVKSoW4m6X-ecQ00&fc=None&ff=20251002031823&v=2.18.0.post9+e462414)

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## Personalised dual-site alpha transcranial alternating current stimulation (tACS) targeting right frontoparietal network reduces craving in heroin use disorder

 Kai  
Yuan

 2025-10-01  1  
min

 2  
words

TDCS TACS TRNS



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## Effects of transcranial alternating current stimulation on cognitive function in older adults: a systematic review and meta-analysis of randomized controlled trials


 Yuxia  
Ma

 2025-10-01  1  
min

 42  
words

TDCS TACS TRNS

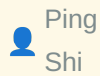
**Summary:** CONCLUSION: tACS intervention significantly improves immediate memory and delayed memory in older adults with AD. Further large-scale RCTs are needed to clarify the specific effects of tACS on various cognitive domains, and optimal stimulation parameters should be investigated to guide clinical prac...

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## AI-Driven Multimodal Brain-State Decoding for Personalized Closed-Loop TENS: A Comprehensive Review

Ping  
Shi

2025-09-27

1  
min64  
words

FNIRS

**Summary:** Chronic pain is a dynamic, brain-wide condition that eludes effective management by conventional, static treatment approaches. Transcutaneous Electrical Nerve Stimulation (TENS), traditionally perceived as a simple and generic modality, is on the verge of a significant transformation. Guided by adva...

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## Exploring Imagined Movement for Brain-Computer Interface Control: An fNIRS and EEG Review

Jamshed  
Iqbal

2025-09-27


1  
min66  
words

FNIRS

**Summary:** Brain-Computer Interfaces (BCIs) offer a non-invasive pathway for restoring motor function, particularly for individuals with limb loss. This review explored the effectiveness of Electroencephalography (EEG) and function Near-Infrared Spectroscopy (fNIRS) in decoding Motor Imagery (MI) movements for...

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## Sex Differences in Cortical Hemodynamic Responses During Interactive and Passive Tasks: An fNIRS Study Using the Nefroball System

 Aleksandra  
Ryl

 17

2025-09-27



1  
min



69  
words

**fNIRS**

**Summary:** The present study aimed to investigate sex differences in the hemodynamic response of the cerebral cortex during interactive and passive tasks using functional near-infrared spectroscopy fNIRS. Ninety-seven healthy adults (63 women, 34 men) participated in the study. Participants performed two tasks...

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## Editorial: Advanced fNIRS applications in neuroscience and neurological disorders

 Daifa  
Wang

 17

2025-09-29




1  
min



2  
words

**fNIRS**

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## Brain network evolution in late preterm to term infants: a near-infrared spectroscopy imaging study



Yiwei

Li



2025-09-29



1

min



27

words

FNIRS

**Summary:** CONCLUSIONS: These results underscore the critical role of GA in shaping neonatal brain network functional organization and provide valuable insights for early intervention strategies in preterm infants.



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## Effectiveness and mechanism of moxibustion in treating chronic non-specific low back pain: study protocol for a multicenter randomized controlled trial



Han

Xiang



2025-09-29



1

min



67

words

FNIRS

**Summary:** INTRODUCTION: Chronic non-specific low back pain (CNLBP) represents the most commonly encountered subtype of low back pain (LBP) in clinical practice. It has no clearly identified etiological factors and is prone to recurrence, which severely compromises patients' quality of life. Moxibustion therap...




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## Effects of robot assisted mirror therapy on motor function and cortical activation in patients with right hemisphere damage

 Yifan Wang


 2025-09-29

 1 min

 75 words

FNIRS


**Summary:** Robot-assisted mirror therapy (MRT) is a cutting-edge rehabilitative treatment that combines mirror therapy and rehabilitation robots and can improve stroke patient participation in rehabilitation training. The aim of this study was to investigate the effects of MRT training in patients with right-h...


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## Advancing pain assessment in Alzheimer's disease and related dementias: Functional near-infrared spectroscopy for investigating brain activity

 Hyochol  
Ahn


 17 2025-09-30

 1  
min

 58  
words

**FNIRS**

**Summary:** CONCLUSION: fNIRS demonstrated feasibility as an objective pain assessment tool in ADRD. tDCS served only as a probe to induce cortical modulation for evaluating fNIRS performance. In this study, tDCS functioned as a probe to induce cortical modulation for evaluating fNIRS sensitivity, not as a ther...

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## MEFD dataset and GCSFormer model : Cross-subject emotion recognition based on multimodal physiological signals

 Wenbo Dong



2025-10-01



1 min



62 words

FNIRS

**Summary:** Cross-subject emotion recognition is an important research direction in the fields of affective computing and brain-computer interfaces, aiming to identify the emotional states of different individuals through physiological signals such as functional near-infrared spectroscopy (fNIRS) and electroenc...




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## Analysis of the analgesic mechanism of TENS-WAA in colonoscopy using the EEG-fNIRS system: a study protocol for a randomised controlled trial

 Fanfu  
Fang

 2025-10-01  1  
min

 62  
words

**FNIRS**


**Summary:** INTRODUCTION: Colonoscopy is an essential procedure for the early diagnosis of colorectal conditions; however, over 60% of patients undergoing non-sedated colonoscopy report moderate to severe pain. This study aims to investigate the central analgesic mechanisms of transcutaneous electrical nerve st...



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## Machine learning predictions from unpredictable chaos

 Guo-Wei  
Wei

 2025-09-30  1  
min

 68  
words

**BRAIN COMPUTER INTERFACE**

**Summary:** Chaos is omnipresent in nature, and its understanding provides enormous social and economic benefits. However, the unpredictability of chaotic systems is a textbook concept due to their sensitivity to initial conditions, aperiodic behaviour, fractal dimensions, nonlinearity and strange attractors. I...


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## EEG-based motor execution classification of upper and lower extremities using machine learning

 Cengiz  
Tepe

 2025-10-01

 1  
min

 61  
words

BRAIN COMPUTER INTERFACE

**Summary:** This study classifies upper- and lower-extremity motor execution from electroencephalography (EEG). We compared two feature extractors, statistical features and Common Spatial Patterns (CSP), and four classifiers: K-Nearest Neighbors, Linear Discriminant Analysis (LDA), Multilayer Perceptron, and Su...


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## The Contribution of Wearable Devices and Artificial Intelligence to Promoting Healthy Aging

 Chaiyavat  
Chaiysut

 2025-10-01

 1  
min

 51  
words

BRAIN COMPUTER INTERFACE

**Summary:** CONCLUSION: The evolving landscape of wearable technologies, exemplified by Fitbit®, Acti- Graph™, and other interventions, holds substantial promise for reshaping healthcare approaches for the aging population. Addressing the limitations will be crucial as research progresses to ensure the effectiv...


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## Revolutionizing brain-computer interfaces: Compact and high-speed wireless neural signal acquisition

 Gang  
Wang

 2025-10-01

 1  
min

 64  
words

BRAIN COMPUTER INTERFACE

**Summary:** A brain-computer interface (BCI) facilitates the connection between the human brain and external devices by decoding neurophysiological signals, thereby enabling seamless interaction between humans and machines. However, existing neural signal acquisition systems often suffer from limited channel co...


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## An EEG-EMG-based Hybrid Brain-Computer Interface for Decoding Tones in Silent and Audible Speech

 Chunzhi  
Yi

 2025-10-01

 1  
min

 72  
words

BRAIN COMPUTER INTERFACE


**Summary:** Speech recognition can be widely applied to support people with language disabilities by enabling them to communicate through brain-computer interfaces (BCIs), thus improving their quality of life. Despite the essential role of tonal variations in conveying semantic meaning, there have been limited ...


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## MEFD dataset and GCSFormer model : Cross-subject emotion recognition based on multimodal physiological signals

 Wenbo Dong


 2025-10-01

 1 min

 62 words

BRAIN COMPUTER INTERFACE

**Summary:** Cross-subject emotion recognition is an important research direction in the fields of affective computing and brain-computer interfaces, aiming to identify the emotional states of different individuals through physiological signals such as functional near-infrared spectroscopy (fNIRS) and electroenc...

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[tbw4049Wgf\\_RdKXdtnCvGW0lVBZFpHe7zaN4k4DwoD5&fc=None&ff=20251002031803&v=2.18.0.post9+e462414](https://pubmed.ncbi.nlm.nih.gov/41033328/?utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1rSUu--tbw4049Wgf_RdKXdtnCvGW0lVBZFpHe7zaN4k4DwoD5&fc=None&ff=20251002031803&v=2.18.0.post9+e462414)

## High - Quality Decoding of RGB Images from the Neuronal Signals of the Pigeon Optic Tectum



Songwei  
Wang



2025-10-01



1  
min



38  
words

BRAIN COMPUTER INTERFACE

**Summary:** CONCLUSIONS: This research provides a novel technical pathway for high-quality visual neural decoding, with robust experimental metrics validating its effectiveness. It also offers experimental evidence to support investigations into the information processing mechanisms of the avian visual pathway.



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[tbw4049Wgf\\_RdKXdtNCvGW0IVBZFpHe7zaN4k4DwoD5&fc=None&ff=20251002031803&v=2.18.0.post9+e462414](https://pubmed.ncbi.nlm.nih.gov/41033466/?utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1rSUu--tbw4049Wgf_RdKXdtNCvGW0IVBZFpHe7zaN4k4DwoD5&fc=None&ff=20251002031803&v=2.18.0.post9+e462414)

## Transfer learning via distributed brain recordings enables reliable speech decoding



Nitin  
Tandon



2025-10-01



1  
min



63  
words

BRAIN COMPUTER INTERFACE

**Summary:** Speech brain-computer interfaces (BCIs) combine neural recordings with large language models to achieve real-time intelligible speech. However, these decoders rely on dense, intact cortical coverage and are challenging to scale across individuals with heterogeneous brain organization. To derive scal...



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[tbw4049Wgf\\_RdKXdtNCvGW0IVBZFpHe7zaN4k4DwoD5&fc=None&ff=20251002031803&v=2.18.0.post9+e462414](https://pubmed.ncbi.nlm.nih.gov/41034198/?utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1rSUu--tbw4049Wgf_RdKXdtNCvGW0IVBZFpHe7zaN4k4DwoD5&fc=None&ff=20251002031803&v=2.18.0.post9+e462414)

## Peptide design through binding interface mimicry with PepMimic



Jianzhu  
Ma



2025-10-01



1  
min



71  
words

BRAIN COMPUTER INTERFACE

**Summary:** Peptides offer advantages for targeted therapy, including oral bioavailability, cellular permeability and high specificity, setting them apart from conventional small molecules and biologics. Here we develop an artificial intelligence algorithm, PepMimic, to transform a known receptor or an existing...



Read full article:

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## Physical Activity and Depressive Mood Share the Structural Connectivity Between Motor and Reward Networks



Tianzi  
Jiang



2025-10-01



1  
min



73  
words

BRAIN COMPUTER INTERFACE

**Summary:** In various studies, exercise has been revealed to have a positive effect on alleviating depressive symptoms. However, the neural basis behind this phenomenon remains unknown, as well as its underlying biological mechanism. In this study, we used a large neuroimaging cohort [n = 1,027, major depressi...






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## The sound of manufactured music: Reviewing the role of artificial stimuli in music cognition research.

 2024-01-22  1 min  259 words

PSYCHOMUSICOLOGY

**Summary:** Having participants listen and react to musical stimuli is one of music cognition's foundational methods. Whereas most researchers have used stimuli adapted from existing musical traditions in such work, others have incorporated artificial stimuli (i.e., stimuli generated specifically for research t...

 Read full article:

<http://doi.org/10.1037/pmu0000304>

## Music-evoked nostalgia and charitable giving: A cross-cultural study in the United States and Mexico.

 2024-01-22  1 min  192 words




PSYCHOMUSICOLOGY

**Summary:** Nostalgia, a past-oriented emotion characterized by complex affective responses, is a pervasive and fundamental human experience. Prior research has demonstrated that nostalgia serves various socioemotional functions, such as promoting a sense of belonging, enhancing one's perception of meaning in l...

 Read full article:

<http://doi.org/10.1037/pmu0000302>

## Preferred music listening does not affect cognitive inhibition in young and older adults.




 2023-10-12  1 min  227 words

PSYCHOMUSICOLOGY

**Summary:** Previous literature has found links between music listening and cognitive performance. Specifically, background music may play a role in modulating cognitive inhibition. However, determining what type of background music affects cognitive inhibition throughout the lifespan has not been studied. The ...

 **Read full article:**  
<http://doi.org/10.1037/pmu0000300>

## Absolute pitch: A literature review of underlying factors, with special regard to music pedagogy.

 2023-07-10  1 min  202 words

PSYCHOMUSICOLOGY

**Summary:** Absolute pitch (AP) is a fairly rare and special phenomenon that has relevance for musicology, psychology, genetics, and neuroscience. AP possessors are able to identify the pitch of an isolated sound or to produce that sound without a reference point. The authors' aim is to review the literature on...

 **Read full article:**  
<http://doi.org/10.1037/pmu0000298>



## Capturing coordination and intentionality in joint musical improvisation.



2023-08-03

1  
min217  
words

PSYCHOMUSICOLOGY

**Summary:** Humans collaborate with each other on a wide variety of tasks that are often largely improvised and unscripted. In this study, we investigated the dynamics of coordination in a joint musical improvisation task, what the effect of intentions is on coordination, and how musicians propagate these inten...



Read full article:

<http://doi.org/10.1037/pmu0000299>

## Continuous affect responses to a large diverse set of unfamiliar music: Bayesian time-series and cluster analyses.



2023-04-20

1  
min252  
words

PSYCHOMUSICOLOGY



**Summary:** Sixty-nine participants made continuous response judgments of perceived arousal and valence while listening to 30-s extracts of 100 unfamiliar pieces within a novel recommender system. Our purpose was to take advantage of the relatively large number of participants and pieces studied (compared with ...



Read full article:

<http://doi.org/10.1037/pmu0000295>

## <em>Psychomusicology</em>: A resounding closing cadence.



 2024-01-22  1 min  256 words

PSYCHOMUSICOLOGY

**Summary:** From 2012 to 2023, the American Psychological Association served as publisher of <em>Psychomusicology: Music, Mind, and Brain</em>. Annabel Cohen and Mark Schmuckler were the successive editors-in-chiefs during this time. As the journal is ceasing publication, the two editors reflect on the developm...

 Read full article:  
<http://doi.org/10.1037/pmu0000305>

## How to deal with regression to the mean when selecting out conscious trials in order to analyze unconscious trials.



 2024-09-09  1 min  261 words

CLINICAL NEUROSCIENCE

**Summary:** In implicit cognition research generally, one standard strategy is to measure the conscious status of knowledge on each trial (e.g., with confidence, structural knowledge attributions, visual clarity ratings) and then subselect the trials where the knowledge is measured to be unconscious. If the acc...

 Read full article:  
<http://doi.org/10.1037/cns0000399>

## Anomalous experiences are associated with high subconscious connectedness.


 2025-04-17  1 min  264 words

CLINICAL NEUROSCIENCE

**Summary:** A series of three studies in the United States, collectively involving 2,216 research participants and including two nationwide Internet surveys, examined the relationship of anomalous experiences with the psychological trait of subconscious connectedness, as well as with several other psychological...

 **Read full article:**  
<http://doi.org/10.1037/cns0000428>

## When the unconscious contents are expressed in both Rorschach Performance Assessment System (R-PAS) and dreams: An experimental study.



 2024-07-11  1 min  249 words

CLINICAL NEUROSCIENCE

**Summary:** The Rorschach cards may elicit components of personality functioning that escape consciousness but which may influence observable performance during the test. Similarly, the manifest content of dreams may contain unconscious experiential elements that contribute to the formation of the content that ...

 **Read full article:**  
<http://doi.org/10.1037/cns0000397>

## Ignorance is bliss: A meta-analysis of the fear-reducing effects of very brief exposure.

 2025-07-31  1 min  268 words

CLINICAL NEUROSCIENCE

**Summary:** Neuroscientific research on the unconscious basis of fear has been translated into novel interventions designed to reduce fear without conscious awareness. To date, the most empirically supported nonconscious exposure intervention is *very brief exposure* (VBE), the continuous presentation of...

 **Read full article:**  
<http://doi.org/10.1037/cns0000435>

## Testing the theoretical position that subconscious phenomena are conscious but not self-conscious.




 2024-12-05  1 min  98 words

CLINICAL NEUROSCIENCE

**Summary:** Building on Fechner's theory of subliminal perception (perception below the absolute threshold for self-conscious apperception) and Morton Prince's theory that subconscious experiences are conscious but not self-conscious, source-monitoring theory attributes the generic self-conscious inference...

 **Read full article:**  
<http://doi.org/10.1037/cns0000414>

## Paradigm's relevance in empirical research biases: Hypnotizability, resilience, and self-control, an empty systematic review.




 2023-12-21  1 min  193 words

CLINICAL NEUROSCIENCE

**Summary:** There are different perspectives on the psychological constructs of resilience and hypnotizability, and both are related to aspects of mental health. Resilience has been associated with protective variables, whereas hypnotizability has been related to psychopathological variables. This systematic re...

 Read full article:  
<http://doi.org/10.1037/cns0000384>

## Monthly Updates [Oct]

 2025-10-01  3 min  722 words

FMHY

**Summary:**


INFO

These update threads only contains major updates. If you're interested in seeing all minor changes you can follow our [Commits Page](https://github.com/fmhy/FMHYedit/commits/main) on ...


 Read full article:  
<https://fmhy.net/posts/oct-2025>

## OneCode — Python library to turn scripts into deployable apps

/u/  
goochop

 2025-10-02

 1  
min

 397  
words


REDDIT PYTHON

**Summary:** <!-- SC\_OFF --><div class="md"><h1>What My Project Does</h1>  
<p><strong>OneCode</strong> is an open-source Python library that lets you convert your scripts to apps with minimal boilerplate. Using simple decorators/parameters, you define inputs/outputs, and OneCode automatically generates a UI for y...

 Read full article:

[https://www.reddit.com/r/Python/comments/1nvvsb/onecode\\_python\\_library\\_to\\_turn\\_scripts\\_into/](https://www.reddit.com/r/Python/comments/1nvvsb/onecode_python_library_to_turn_scripts_into/)

## Ask HN: Who is hiring? (October 2025)


 2025-10-01

 1  
min

 2  
words



HACKER NEWS

**Summary:** <a href="https://news.ycombinator.com/item?id=45438503">Comments</a>

 Read full article:

<https://news.ycombinator.com/item?id=45438503>

## Cormac McCarthy's personal library

 2025-10-01  1 min  2 words





HACKER NEWS

**Summary:** [Comments](https://news.ycombinator.com/item?id=45444694)

 **Read full article:**

<https://www.smithsonianmag.com/arts-culture/two-years-cormac-mccarthys-death-rare-access-to-personal-library-reveals-man-behind-myth-180987150/>

## Cormac McCarthy's personal library

 bigflern  2025-10-01  1 min  13 words

HACKER NEWS




**Summary:**

Article URL: <https://www.smithsonianmag.com/arts-culture/two-years-cormac-mccarthys-death-rare-access-to-personal-library-reveals-man-behind-myth-180987150/>

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<https://www.smithsonianmag.com/arts-culture/two-years-cormac-mccarthys-death-rare-access-to-personal-library-reveals-man-behind-myth-180987150/>

## An Emergentist Account of Language in the Brain—Seeking Neural Synergies Behind Human Uniqueness

 2025-09-08  1 min  176 words

COGNITIVE NEUROSCIENCE

**Summary:** Cognitive neuroscience has become increasingly open to views of human cognitive faculties as emergent properties—as higher-level products of synergies between brain structures handling qualitatively different functions. This new perspective mitigates claims that cognitive abilities are tied to local...

 Read full article:

<http://ieeexplore.ieee.org/document/11153357>

## Impact of Transcutaneous Vagus Nerve Stimulation on Event-related Potentials during a Response Inhibition Task

 2025-09-08  1 min  157 words

COGNITIVE NEUROSCIENCE

**Summary:** As an emerging neuromodulation technique, transcutaneous auricular vagus nerve stimulation (taVNS) has shown promise in enhancing cognitive abilities. The present study used a combination of the go/no-go task and the stop-signal task experimental paradigm to examine the cognitive effects of taVNS on...

 Read full article:

<http://ieeexplore.ieee.org/document/11153359>



## Confidence and Insight into Working Memory Are Shaped by Attention and Recent Performance



2025-09-08

1  
min215  
words

COGNITIVE NEUROSCIENCE

**Summary:** Working memory is capacity-limited, and our ability to access information from working memory is variable, but selective attention to working memory contents can improve performance. People are able to make introspective judgments regarding the quality of their memories, and these judgments are link...



Read full article:

<http://ieeexplore.ieee.org/document/11153356>

## On carrier frequency in transcutaneous spinal cord electrical stimulation: a narrative review



Natalia Shamantseva and Tatiana  
Moshonkina



2025-09-28

1  
min264  
words

JOURNAL NEURAL ENGINEERING

**Summary:** Objective. Transcutaneous spinal cord stimulation (tSCS) using kilohertz frequency carrier modulation has emerged as a non-invasive neuromodulation approach to improve motor recovery and reduce pain. Early application of 5–10 kHz modulated pulses for tSCS has shown promising results in spinal cord (...)





Read full article:

<http://iopscience.iop.org/article/10.1088/1741-2552/ae08e8>

## Helical neural implants for intracerebral drug delivery

Batoul Khlaifat, Mahmoud Elbeh, Shreya Manjrekar, Seung-Jean Kang, Yusheng Zhang, Parima

 Phowarasontorn, Sadaf Usmani, Abdel-Hameed Dabbour, Heba T Naser, Hanan Mohammed, Minsoo Kim and Khalil B Ramadi

 2025-09-28  1 min  280 words

JOURNAL NEURAL ENGINEERING

**Summary:** Objective. Neurological disorders often arise from specific regions of dysfunction in the brain. One approach to target these pathologic regions is through chemical delivery using intracerebral implants. Previous works have designed implants that are small and flexible, minimizing the mechanical mis...

 Read full article:

<http://iopscience.iop.org/article/10.1088/1741-2552/ae0523>

## The impact of CSF-filled cavities on scalp EEG and its implications

 Maria Carla Piastra

 2024-06-14  1 min  64 words

OOSTENVELD ROBERT

**Summary:** Previous studies have found electroencephalogram (EEG) amplitude and scalp topography differences between neurotypical and neurological/neurosurgical groups, being interpreted at the cognitive level. However, these comparisons are invariably accompanied by anatomical changes. Critical to EEG are the...

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## Motion-BIDS: an extension to the brain imaging data structure to organize motion data for reproducible research

 Julius  
Welzel



2024-07-02


1  
min72  
words

OOSTENVELD ROBERT

**Summary:** We present an extension to the Brain Imaging Data Structure (BIDS) for motion data. Motion data is frequently recorded alongside human brain imaging and electrophysiological data. The goal of Motion-BIDS is to make motion data interoperable across different laboratories and with other data modalitie...

**Read full article:**[https://pubmed.ncbi.nlm.nih.gov/38956071/?](https://pubmed.ncbi.nlm.nih.gov/38956071/?utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1BUB2BG5RbxOblm-hBbiJWEhGG43qIVrvGNHOTqBKva9wWrltM&fc=None&ff=20251002024952&v=2.18.0.post9+e462414)[utm\\_source=BucketBot&utm\\_medium=rss&utm\\_campaign=None&utm\\_content=1BUB2BG5RbxOblm-hBbiJWEhGG43qIVrvGNHOTqBKva9wWrltM&fc=None&ff=20251002024952&v=2.18.0.post9+e462414](https://pubmed.ncbi.nlm.nih.gov/38956071/?utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1BUB2BG5RbxOblm-hBbiJWEhGG43qIVrvGNHOTqBKva9wWrltM&fc=None&ff=20251002024952&v=2.18.0.post9+e462414)

## One hundred years of EEG for brain and behaviour research

 Pedro Valdes-  
Sosa



2024-08-22

1  
min2  
words

OOSTENVELD ROBERT

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## Freezing of gait in Parkinson's disease is related to imbalanced stopping-related cortical activity



Richard J A van  
Wezel



2024-09-04



1  
min



65  
words

OOSTENVELD ROBERT

**Summary:** Freezing of gait, characterized by involuntary interruptions of walking, is a debilitating motor symptom of Parkinson's disease that restricts people's autonomy. Previous brain imaging studies investigating the mechanisms underlying freezing were restricted to scan people in supine positions and yie...



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## The past, present, and future of the brain imaging data structure (BIDS)



Krzysztof J  
Gorgolewski



2024-09-23



1  
min



82  
words

OOSTENVELD ROBERT

**Summary:** The Brain Imaging Data Structure (BIDS) is a community-driven standard for the organization of data and metadata from a growing range of neuroscience modalities. This paper is meant as a history of how the standard has developed and grown over time. We outline the principles behind the project, the ...



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## Human cortical high-gamma power scales with movement rate in healthy participants and stroke survivors

Fanny  
Quandt

17 2025-01-09

1  
min

65  
words

OOSTENVELD ROBERT

**Summary:** Motor cortical high-gamma oscillations (60-90 Hz) occur at movement onset and are spatially focused over the contralateral primary motor cortex. Although high-gamma oscillations are widely recognized for their significance in human motor control, their precise function on a cortical level remains el...

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## NIRS-BIDS: Brain Imaging Data Structure Extended to Near-Infrared Spectroscopy

Luca  
Pollonini

17 2025-01-27

1  
min

70  
words

OOSTENVELD ROBERT


**Summary:** Functional near-infrared spectroscopy (fNIRS) is an increasingly popular neuroimaging technique that measures cortical hemodynamic activity in a non-invasive and portable fashion. Although the fNIRS community has been successful in disseminating open-source processing tools and a standard file forma...



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
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## Pseudonymisation of neuroimages and data protection: **Increasing access to data while retaining scientific utility**

 Lyuba  
Zehl

 2025-06-26  1  
min

 67  
words

OOSTENVELD ROBERT

**Summary:** For a number of years, facial features removal techniques such as 'defacing', 'skull stripping' and 'face masking/blurring', were considered adequate privacy preserving tools to openly share brain images. Scientifically, these measures were already a compromise between data protection requirements a...



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## Cycling on the Freeway: The perilous state of open-source neuroscience software

 Tim M  
Tierney

 2025-08-13  1  
min

 74  
words

OOSTENVELD ROBERT


**Summary:** Most scientists need software to perform their research (Barker et al., 2020;Carver et al., 2022;Hettrick, 2014;Hettrick et al., 2014;Switters & Osimo, 2019), and neuroscientists are no exception. Whether we work with reaction times, electrophysiological signals, or magnetic resonance imaging data, ...


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## Optimal configuration of on-scalp OPMs with fixed channel counts


 Robert  
Oostenveld

 2025-08-13  1  
min

 69  
words

OOSTENVELD ROBERT

**Summary:** Recent technological developments have brought optically pumped magnetometers (OPMs) within reach of the larger neuroscientific community. The current state-of-the-art consists of whole-head systems that measure the magnetic field at >100 locations. OPM sensors can be constructed to measure the fiel...

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## Swin-YOLO-SAM: a hybrid Transformer-based framework integrating Swin Transformer, YOLOv12, and SAM-2.1 for automated identification and segmentation of date palm leaf diseases



Ghassan  
Husnain



2025-10-01



1  
min



68  
words

LOW VISION

**Summary:** The cultivation of date palm (*Phoenix dactylifera* L.) is acutely impacted by numerous fungal, bacterial, and pest-related diseases that diminish yield, spoil fruit quality, and undermine long-term agricultural sustainability. The traditional methods of monitoring diseases, which rely heavily on expe...



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## Chronic endometritis diagnosis and fertility outcomes: an old unresolved question



Yohann  
Dabi



2025-10-01



1  
min



67  
words

LOW VISION

**Summary:** ABSTRACT: Chronic endometritis, defined by chronic inflammation of the endometrium, remains a clinical and biologic challenge even using hysteroscopy allowing a direct vision of the uterine cavity without anesthesia, and conventional histology using Hematoxylin and Eosin staining. Our primary object...



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## DTL: Parameter- and Memory-Efficient Disentangled Vision Learning



Jianxin  
Wu



2025-10-01



1  
min



77  
words

LOW VISION

**Summary:** The cost of finetuning a pretrained model on downstream tasks steadily increases as they grow larger. Parameter-efficient transfer learning (PETL) is proposed to reduce this cost by changing only a tiny subset of trainable parameters. But, the GPU memory footprint during training is not effectively ...



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## Exploring Vision-Based Active 3D Object Detection by Informativeness Characterization



Xi

Li



2025-10-01



1

min



76

words

LOW VISION

**Summary:** Vision-based 3D object detection (3DOD) gains lots of attention due to its low cost for deployment compared to Lidar-based tasks, while it suffers from labor-expensive data annotations. At the same time, active learning (AL) has shown great potential in reducing annotation costs in related tasks, wh...



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## Age-specific associations between intrinsic capacity impairments and self-rated health in community-dwelling adults: Insights from Taiwan longitudinal study on aging



Fei-Yuan

Hsiao



2025-10-01



1

min



32

words

LOW VISION

**Summary:** CONCLUSIONS: Age-specific patterns suggest targeted interventions: mental health support for middle-aged adults, mobility preservation for young-old adults, and vitality enhancement for the oldest adults. These findings provide guidance for age-tailored ICOPE strategies.



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## Artificial intelligence defines spatial patterns of tumor-infiltrating lymphocytes highly associated with outcome - a pan-GI cancer study



A  
Madabhushi



2025-10-01



1  
min



22  
words

LOW VISION

**Summary:** CONCLUSIONS: Our findings suggest that the spatial relationships of TILs and cancer nuclei are prognostic of survival across multiple GI cancer types.



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## Eagle-eye-inspired neuromorphic synaptic transistor array with ultrabroad dynamic range for adaptive machine vision



Wenping  
Hu



2025-10-01



1  
min



2  
words

LOW VISION



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## Recent progress in the patterning of perovskite films for photodetector applications



Huiming  
Cheng



2025-10-01



1  
min



65  
words

LOW VISION

**Summary:** Photodetectors, as the core devices for optical signal conversion, need to balance high efficiency, fast response, and low-cost fabrication. Perovskite, with its advantages of high carrier mobility and tunable band gaps, have become an ideal alternative to silicon-based materials. This paper systema...



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## Benchmarking foundation models as feature extractors for weakly supervised computational pathology



Jakob Nikolas  
Kather



2025-10-01



1  
min



66  
words

LOW VISION

**Summary:** Numerous pathology foundation models have been developed to extract clinically relevant information. There is currently limited literature independently evaluating these foundation models on external cohorts and clinically relevant tasks to uncover adjustments for future improvements. Here we benchm...





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## Comparison of visual quality and optical zones after TransPRK, SMILE, and FS-LASIK myopia correction procedures

 Zhongyi  
Yang


 2025-10-01

 1  
min

 61  
words

LOW VISION

**Summary:** CONCLUSIONS: TransPRK has good postoperative visual quality, but its advantages may be mediated by its larger optical zone design. In terms of night vision performance, SMILE surgery can effectively preserve the biomechanical properties of the cornea, while FS-LASIK achieved comparable 6-month acuit...



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## The taste of trigeminal sensations: relation between taste, lingual tactile acuity, and spicy perception in patients with taste dysfunction

 Thomas Hummel

 2025-05-28  1 min  70 words


TACTILE ACUITY

**Summary:** In the oral cavity, oral stereognosis and chemesthesis refer to the abilities to recognize shapes and detect noxious substances, respectively, through various receptors distributed on the tongue. The absence of standardized methods to assess oral somatosensory perception has led to a lack of consens...

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## Measuring the Distribution of Tactile Acuity at the Index Finger and Thumb Fingertips

 Hiroyuki Kajimoto

 2025-06-17  1 min  75 words

TACTILE ACUITY


**Summary:** In our day-to-day activities, we utilize not only the pads of our fingers but also the sides and hemispherical tips when manipulating objects. For teleoperation systems to replicate these real-life interactions, tactile sensation must be presented and distributed across the entire fingertip. Thus, u...

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## Optimizing Vibrotactile Feedback for Sensory Substitution in the Thigh: Spatial Acuity and Frequency Characteristics

 Leah R  
Bent

 2025-06-27

 1  
min

 69  
words

TACTILE ACUITY


**Summary:** Amputation of a lower limb not only affects mobility but also interferes with sensory feedback, leading to an elevated risk of falls among individuals living with amputation. Sensory substitution, achieved through tactile displays embedded in transfemoral prosthetic sockets, presents a promising non...


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## Directional vibro-tactile hazard warnings for drivers with vision impairments

 Alex R  
Bowers

 2025-07-02

 1  
min

 80  
words

TACTILE ACUITY


**Summary:** Vision impairment may delay responses to hazards when driving. In a proof-of-concept driving simulator study, we evaluated a hazard warning device designed for vision impaired drivers. Three groups participated: 11 persons with central vision loss (CVL; median age 60 years), 12 with homonymous field...

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## Sensitivity and vagal reactivity to C-tactile-mediated affective touch in mild cognitive impairment due to Alzheimer's disease

 Cecilia  
Guariglia



2025-08-01



1  
min



64  
words

TACTILE ACUITY

**Summary:** BackgroundC-tactile (CT) afferents preferentially activate in response to slow caress-like touch, evoking a diffuse pleasant sensation and promoting autonomic regulation. According to Braak's classic model, the neurodegenerative process in Alzheimer's disease (AD) only affects somatosensory cortices...



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## Differences in tactile grid localization accuracy between people with back pain compared to individuals without pain

 Eric  
Fjeldheim



2025-08-24



1  
min



22  
words

TACTILE ACUITY

**Summary:** OBJECTIVES: The study aimed to investigate the grid localization test (GLT) between patients with lower back pain and those without back pain.



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## Eye Drop Instillation Success and Hand Function in Adults with Glaucoma: A Pilot Study



Paula Anne Newman-  
Casey



2025-09-09



1  
min



74  
words

TACTILE ACUITY

**Summary:** CONCLUSIONS: Despite hand function deficits, in this exploratory pilot study, adults with glaucoma demonstrated eye drop instillation success comparable to those without glaucoma, though with higher rates of bottle tip contact with the eye, skin, or eyelashes, suggesting an increased risk of potenti...



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## Functional evidence for early origin of tactile acuity in the vertebrate somatosensory system



Sviatoslav N  
Bagriantsev



2025-09-13



1  
min



58  
words

TACTILE ACUITY

**Summary:** Mammals and reptiles possess a sophisticated somatosensory system for precise tactile discrimination via mechanosensory end-organs, such as Meissner and Pacinian corpuscles and others. These structures detect sustained pressure, velocity, and vibrations, thereby facilitating nuanced environmental in...






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## The coarse mental map of the breast is anchored on the nipple

 Charles M  
Greenspon

 2025-09-18  1  
min

 86  
words

TACTILE ACUITY


**Summary:** Touch plays a key role in our perception of our body and shapes our interactions with the world, from the objects we manipulate to the people we touch. While the tactile sensibility of the hand has been extensively characterized, much less is known about touch on other parts of the body. Despite the...



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## Haptic Feedback Systems for Lower-Limb Prosthetic Applications: A Review of System Design, User Experience, and Clinical Insights

 Runar  
Unnthorsson

 2025-09-27  1  
min

 65  
words

TACTILE ACUITY


**Summary:** Systems presenting haptic information have emerged as an important technological advance in assisting individuals with sensory impairments or amputations, where the aim is to enhance sensory perception or provide sensory substitution through tactile feedback. These systems provide information on lim...

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## Exploring the use of smartphone applications during navigation-based tasks for individuals who are blind or who have low vision: future directions and priorities

 Joseph Paul  
Nemargut



2025-08-25



1  
min



62  
words

**BRaille**

**Summary:** CONCLUSION: These results provide vital insights for technology developers about the perceived utility of smartphone apps for people with low vision or blindness during navigation. Our results highlight the importance of built-in accessibility features for users with visual impairments. As additiona...




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## Gradient Porous Flexible Pressure Sensors with the Relay Effect for High-Accuracy Braille-to-Speech Recognition

 Jianming  
Xu



2025-08-25



1  
min



62  
words

**BRaille**

**Summary:** The development of highly sensitive, wide linear-range flexible pressure sensors is crucial for practical applications in human-computer interaction, physiological signal detection, and motion monitoring. However, traditional flexible pressure sensors often suffer from limited compressibility in the...





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
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## Individual and community level factors influencing modern contraceptive use among women of reproductive age in South Africa: a multilevel analysis

 Million  
Phiri

 2025-08-26  1  
min

 46  
words

**BRaille**


**Summary:** CONCLUSION: Sensory disability status influenced women's contraceptive behaviour in South Africa. Current family planning interventions should target women with sensory disabilities by prioritising accessible communication methods (e.g., braille, sign language), disability awareness training for hea...



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## Explosion-powered eversible tactile displays

 Robert F  
Shepherd

 2025-08-27  1  
min

 64  
words

**BRaille**


**Summary:** High-resolution electronic tactile displays stand to transform haptics for remote machine operation, virtual reality, and digital information access for people who are blind or visually impaired. Yet, increasing the resolution of these displays requires increasing the number of individually addressa...


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## A Biomimetic Fiber-Entangled Permeable Electronic Skin for Strain-Insensitive and High-Resolution Tactile Sensing

 Zhijun  
Ma

 2025-08-28

 1  
min

 57  
words

[BRAILLE](#)


**Summary:** Electronic skins (e-skins) incorporating island architectures represent a promising platform for strain-insensitive tactile sensing by mechanically decoupling sensing units from deformations. However, conventional island designs encounter stress concentration issues caused by inherent modulus mismat...


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## High-Density Tactile Sensor Array for Sub-Millimeter Texture Recognition

 Min  
Zhang

 2025-08-28

 1  
min

 64  
words

[BRAILLE](#)

**Summary:** High-density tactile sensor arrays that replicate human touch could restore texture perception in paralyzed individuals. However, conventional tactile sensor arrays face inherent trade-offs between spatial resolution, sensitivity, and crosstalk suppression due to microstructure size limitations and ...

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## A Diachronic Investigation of the Change in Form and Formational-Semantic Systematicity of the Chinese Sign Language Lexicon



Hao  
Lin



2025-09-01



1  
min



72  
words

BRAILLE

**Summary:** It has been argued in previous research that several competing pressures guide the directions of language evolution (economy vs. redundancy; arbitrariness vs. systematicity). For sign languages, however, the effects of competing pressures on their change of lexical systems remain largely unclear. In...



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## Wireless Electrotactile System with Hydrogel-Based Electrodes for Conformal Tactile Interaction



Ji  
Liu



2025-09-02



1  
min



56  
words

BRAILLE

**Summary:** A wireless epidermal electrotactile interface is demonstrated through integration of skin-conformal electrodes and flexible circuitry, addressing existing limitations in haptic technology caused by mechanical mismatch and system-level integration challenges. This electrotactile system achieves low s...



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## Beyond access: rethinking assistive technology for individuals with visual impairments in Türkiye

Önder  
İşlek

17 2025-09-12

1  
min

55  
words

BRILLE

**Summary:** CONCLUSION: Despite demonstrating adaptability, individuals with VI in Türkiye face significant structural barriers to equitable AT access. Informal learning limited public support, and a lack of locally adapted tools contribute to digital exclusion. A rights-based approach-emphasizing inclusive fun...

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## High prevalence of bacterial STI, anal HPV, cytological abnormalities and anal lesions among MSM in Togo, 2021: a baseline analysis of the ANRS I MIE 12,400/DepIST-H cohort

Didier K  
Ekouevi

17 2025-09-27

1  
min

42  
words

BRILLE

**Summary:** CONCLUSIONS: These findings emphasize the high prevalence of STIs among MSM and confirm the unusual distribution of HPV types in West Africa, with HPV35 being highly prevalent. A national strategy regarding STI screening and HPV vaccination in this key population is needed.

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## Preliminary evidence for high-definition transcranial direct current stimulation effects on white matter microstructure and executive function in mild cognitive impairment



Huan

Li



2025-09-30



1

min



62

words

TDCS TACS TRNS

**Summary:** CONCLUSION: The findings suggest that HD-tDCS targeting the L-DLPFC may promote microstructural remodeling in white matter tracts, evidenced by elevated fractional anisotropy within the corticospinal and anterior thalamic pathways. While global cognitive measures remained stable, a trend toward impr...



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## Stepwise interventional psychiatry approach for major depression: A case series



Jean-Philippe

Miron



2025-09-30



1

min



46

words

TDCS TACS TRNS

**Summary:** CONCLUSIONS: This case series suggests that a sequential neuromodulation strategy may increase overall response rates in TRD by capturing different responder profiles across modalities. These findings support the feasibility of a pragmatic stepwise approach and highlight the need for controlled stud...



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## On the mechanisms of epidermal stemness and differentiation

 Raghvendra  
Singh

 2025-10-01  1  
min

 70  
words

TDCS TACS TRNS


**Summary:** High Wnt and low Notch activities characterize epidermal stem cells (SCs), while low Wnt and high Notch activities characterize the terminally differentiated epidermal cells (TDCs). However, the mechanism by which transit amplifying cells (TACs) are induced to become terminally differentiated remain...


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## Effects of Transcranial Direct Current Stimulation on pain and pain-related outcomes: an umbrella review

 Dmitriy  
Viderman

 2025-10-01  1  
min

 64  
words

TDCS TACS TRNS


**Summary:** CONCLUSIONS: Our findings suggest that tDCS might be effective for fibromyalgia, migraine, and neuropathic pain associated with spinal cord injury and stroke. However, further evidence is needed for chronic orofacial pain, multiple sclerosis, knee osteoarthritis, central post-stroke pain, intra-abdo...


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## A novel machine learning-based method to quantify the effect of transcranial direct current stimulation on opioid users

 Davoud  
Ahmadi

 2025-10-01

 1  
min

 19  
words

TDCS TACS TRNS

**Summary:** CONCLUSION: These findings suggest that tDCS can be an effective intervention for reducing craving in patients with opioid addiction.


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## Quantitative analysis of [<sup>18</sup>F]CHL2310, a novel PET ligand for cholesterol 24-Hydroxylase, in nonhuman primate brain

 Lu  
Wang

 2025-10-01

 1  
min

 32  
words

TDCS TACS TRNS


**Summary:** CONCLUSION: [<sup>18</sup>F]CHL2310 shows high in vivo specificity, favorable pharmacokinetic properties, and robust quantitative performance in non-human primates. These characteristics support its potential as a PET radiotracer for imaging CYP46A1 in human studies.


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## Dissemination and Impact of a Multimodal Pain Regimen on Analgesia Prescribing at an Academic Hospital

 Avi  
Bhavaraju

 2025-10-01

 1  
min

 30  
words

TDCS TACS TRNS


**Summary:** CONCLUSIONS: Implementation of an MMP protocol by a single division can facilitate the spread of nonopioid adjunctive pain medication use and decrease opioid utilization throughout surgical specialties in a hospital.


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## Developing a Trainee Advisory Committee Within a Pediatric Hospital Medicine Research Network

 Karen L  
Forbes

 2025-10-01

 1  
min

 62  
words

TDCS TACS TRNS

**Summary:** Medical research networks are essential for advancing clinical care. Despite the recognized importance of building research capacity and training future pediatric researchers, trainee engagement within these research networks remains inconsistent. To address this, the Paediatric Inpatient Research N...


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## Personalised dual-site alpha transcranial alternating current stimulation (tACS) targeting right frontoparietal network reduces craving in heroin use disorder

 Kai  
Yuan

 2025-10-01

 1  
min

 2  
words

TDCS TACS TRNS

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## Effects of transcranial alternating current stimulation on cognitive function in older adults: a systematic review and meta-analysis of randomized controlled trials

 Yuxia  
Ma


 2025-10-01

 1  
min

 42  
words

TDCS TACS TRNS


**Summary:** CONCLUSION: tACS intervention significantly improves immediate memory and delayed memory in older adults with AD. Further large-scale RCTs are needed to clarify the specific effects of tACS on various cognitive domains, and optimal stimulation parameters should be investigated to guide clinical prac...


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## AI-Driven Multimodal Brain-State Decoding for Personalized Closed-Loop TENS: A Comprehensive Review

 Ping  
Shi

 17 2025-09-27

 1  
min

 64  
words

FNIRS


**Summary:** Chronic pain is a dynamic, brain-wide condition that eludes effective management by conventional, static treatment approaches. Transcutaneous Electrical Nerve Stimulation (TENS), traditionally perceived as a simple and generic modality, is on the verge of a significant transformation. Guided by adva...


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## Exploring Imagined Movement for Brain-Computer Interface Control: An fNIRS and EEG Review

 Jamshed  
Iqbal

 17 2025-09-27

 1  
min

 66  
words

FNIRS

**Summary:** Brain-Computer Interfaces (BCIs) offer a non-invasive pathway for restoring motor function, particularly for individuals with limb loss. This review explored the effectiveness of Electroencephalography (EEG) and function Near-Infrared Spectroscopy (fNIRS) in decoding Motor Imagery (MI) movements for...

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## Sex Differences in Cortical Hemodynamic Responses During Interactive and Passive Tasks: An fNIRS Study Using the Nefroball System



Aleksandra  
Ryl



2025-09-27



1  
min



69  
words

**fNIRS**

**Summary:** The present study aimed to investigate sex differences in the hemodynamic response of the cerebral cortex during interactive and passive tasks using functional near-infrared spectroscopy fNIRS. Ninety-seven healthy adults (63 women, 34 men) participated in the study. Participants performed two tasks...



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## Editorial: Advanced fNIRS applications in neuroscience and neurological disorders



Daifa  
Wang



2025-09-29



1  
min



2  
words

**fNIRS**



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## Brain network evolution in late preterm to term infants: a near-infrared spectroscopy imaging study



Yiwei

Li



2025-09-29



1

min



27

words

FNIRS

**Summary:** CONCLUSIONS: These results underscore the critical role of GA in shaping neonatal brain network functional organization and provide valuable insights for early intervention strategies in preterm infants.



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## Effectiveness and mechanism of moxibustion in treating chronic non-specific low back pain: study protocol for a multicenter randomized controlled trial



Han

Xiang



2025-09-29



1

min



67

words

FNIRS

**Summary:** INTRODUCTION: Chronic non-specific low back pain (CNLBP) represents the most commonly encountered subtype of low back pain (LBP) in clinical practice. It has no clearly identified etiological factors and is prone to recurrence, which severely compromises patients' quality of life. Moxibustion therap...




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## Effects of robot assisted mirror therapy on motor function and cortical activation in patients with right hemisphere damage

 Yifan Wang

 2025-09-29

 1 min

 75 words

FNIRS

**Summary:** Robot-assisted mirror therapy (MRT) is a cutting-edge rehabilitative treatment that combines mirror therapy and rehabilitation robots and can improve stroke patient participation in rehabilitation training. The aim of this study was to investigate the effects of MRT training in patients with right-h...


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## Advancing pain assessment in Alzheimer's disease and related dementias: Functional near-infrared spectroscopy for investigating brain activity

 Hyochol  
Ahn


 17 2025-09-30

 1  
min

 58  
words

**FNIRS**

**Summary:** CONCLUSION: fNIRS demonstrated feasibility as an objective pain assessment tool in ADRD. tDCS served only as a probe to induce cortical modulation for evaluating fNIRS performance. In this study, tDCS functioned as a probe to induce cortical modulation for evaluating fNIRS sensitivity, not as a ther...

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## MEFD dataset and GCSFormer model : Cross-subject emotion recognition based on multimodal physiological signals

 Wenbo Dong

 2025-10-01

 1 min

 62 words

**FNIRS**


**Summary:** Cross-subject emotion recognition is an important research direction in the fields of affective computing and brain-computer interfaces, aiming to identify the emotional states of different individuals through physiological signals such as functional near-infrared spectroscopy (fNIRS) and electroenc...

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## Analysis of the analgesic mechanism of TENS-WAA in colonoscopy using the EEG-fNIRS system: a study protocol for a randomised controlled trial

 Fanfu  
Fang

 2025-10-01  1  
min

 62  
words

**FNIRS**


**Summary:** INTRODUCTION: Colonoscopy is an essential procedure for the early diagnosis of colorectal conditions; however, over 60% of patients undergoing non-sedated colonoscopy report moderate to severe pain. This study aims to investigate the central analgesic mechanisms of transcutaneous electrical nerve st...



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## Machine learning predictions from unpredictable chaos

 Guo-Wei  
Wei

 2025-09-30  1  
min

 68  
words

**BRAIN COMPUTER INTERFACE**

**Summary:** Chaos is omnipresent in nature, and its understanding provides enormous social and economic benefits. However, the unpredictability of chaotic systems is a textbook concept due to their sensitivity to initial conditions, aperiodic behaviour, fractal dimensions, nonlinearity and strange attractors. I...


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## EEG-based motor execution classification of upper and lower extremities using machine learning

 Cengiz  
Tepe

 2025-10-01

 1  
min

 61  
words

BRAIN COMPUTER INTERFACE

**Summary:** This study classifies upper- and lower-extremity motor execution from electroencephalography (EEG). We compared two feature extractors, statistical features and Common Spatial Patterns (CSP), and four classifiers: K-Nearest Neighbors, Linear Discriminant Analysis (LDA), Multilayer Perceptron, and Su...


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## The Contribution of Wearable Devices and Artificial Intelligence to Promoting Healthy Aging

 Chaiyavat  
Chaiysut

 2025-10-01

 1  
min

 51  
words

BRAIN COMPUTER INTERFACE

**Summary:** CONCLUSION: The evolving landscape of wearable technologies, exemplified by Fitbit®, Acti- Graph™, and other interventions, holds substantial promise for reshaping healthcare approaches for the aging population. Addressing the limitations will be crucial as research progresses to ensure the effectiv...


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## Revolutionizing brain-computer interfaces: Compact and high-speed wireless neural signal acquisition

 Gang  
Wang

 2025-10-01

 1  
min

 64  
words

BRAIN COMPUTER INTERFACE

**Summary:** A brain-computer interface (BCI) facilitates the connection between the human brain and external devices by decoding neurophysiological signals, thereby enabling seamless interaction between humans and machines. However, existing neural signal acquisition systems often suffer from limited channel co...

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## An EEG-EMG-based Hybrid Brain-Computer Interface for Decoding Tones in Silent and Audible Speech

 Chunzhi  
Yi

 2025-10-01

 1  
min

 72  
words

BRAIN COMPUTER INTERFACE

**Summary:** Speech recognition can be widely applied to support people with language disabilities by enabling them to communicate through brain-computer interfaces (BCIs), thus improving their quality of life. Despite the essential role of tonal variations in conveying semantic meaning, there have been limited ...


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 Wenbo Dong


 2025-10-01

 1 min

 62 words

BRAIN COMPUTER INTERFACE

**Summary:** Cross-subject emotion recognition is an important research direction in the fields of affective computing and brain-computer interfaces, aiming to identify the emotional states of different individuals through physiological signals such as functional near-infrared spectroscopy (fNIRS) and electroenc...

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## High - Quality Decoding of RGB Images from the Neuronal Signals of the Pigeon Optic Tectum



Songwei  
Wang



2025-10-01



1  
min



38  
words

BRAIN COMPUTER INTERFACE

**Summary:** CONCLUSIONS: This research provides a novel technical pathway for high-quality visual neural decoding, with robust experimental metrics validating its effectiveness. It also offers experimental evidence to support investigations into the information processing mechanisms of the avian visual pathway.



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## Transfer learning via distributed brain recordings enables reliable speech decoding



Nitin  
Tandon



2025-10-01



1  
min



63  
words

BRAIN COMPUTER INTERFACE

**Summary:** Speech brain-computer interfaces (BCIs) combine neural recordings with large language models to achieve real-time intelligible speech. However, these decoders rely on dense, intact cortical coverage and are challenging to scale across individuals with heterogeneous brain organization. To derive scal...



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## Peptide design through binding interface mimicry with PepMimic



Jianzhu  
Ma



2025-10-01



1  
min



71  
words

BRAIN COMPUTER INTERFACE

**Summary:** Peptides offer advantages for targeted therapy, including oral bioavailability, cellular permeability and high specificity, setting them apart from conventional small molecules and biologics. Here we develop an artificial intelligence algorithm, PepMimic, to transform a known receptor or an existing...



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## Physical Activity and Depressive Mood Share the Structural Connectivity Between Motor and Reward Networks



Tianzi  
Jiang



2025-10-01



1  
min



73  
words

BRAIN COMPUTER INTERFACE

**Summary:** In various studies, exercise has been revealed to have a positive effect on alleviating depressive symptoms. However, the neural basis behind this phenomenon remains unknown, as well as its underlying biological mechanism. In this study, we used a large neuroimaging cohort [n = 1,027, major depressi...






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## Mechanistic pathways of acceptance: An experimental study.




 2023-08-17  1 min  177 words

CLINICAL NEUROSCIENCE

**Summary:** Acceptance can improve psychological functioning. However, research has yielded inconsistent findings regarding the efficacy of acceptance, which may be related to instructions to accept different aspects of psychological functioning (e.g., thoughts vs. emotion). We compared the effects of self-regu...

 Read full article:  
<http://doi.org/10.1037/cns0000371>

## Examining the associations between nonbelieved memories and memory distrust, self-esteem, and rumination.

 2022-11-10  1 min  175 words

CLINICAL NEUROSCIENCE

**Summary:** When beliefs in autobiographical memories are reduced while recollections remain relatively intact, a phenomenon termed nonbelieved memories (NBMs) unfolds. The current preregistered study ( $N = 104$ ) used a 3-week longitudinal design to investigate the relationships between the frequency of ...

 Read full article:  
<http://doi.org/10.1037/cns0000344>

## Relationship between thought suppression and dissociation and the mediating effect of rumination and unusual sleep experiences.

 2023-08-21  1 min  198 words

CLINICAL NEUROSCIENCE

**Summary:** Dissociation is a phenomenon present in a wide variety of psychiatric disorders as well as in the general population. The objective of this study was to examine the relation between trait thought suppression (TS) and development of dissociative phenomena in the nonclinical population, with emphasis ...

 Read full article:  
<http://doi.org/10.1037/cns0000366>

## Mental pain, boredom, and diffuse nociception.

 2024-11-21  1 min  237 words

CLINICAL NEUROSCIENCE

**Summary:** In this article, I propose a novel theory to explain the possible physiological origins of the relatively mild mental pain that is often labeled as boredom and possibly loneliness or a negative mood, depending on one's situation. My admittedly speculative hypothesis is that most people in modern soc...

 Read full article:  
<http://doi.org/10.1037/cns0000405>

## Typing the test suite



/u/

fjarri



2025-10-01

1  
min173  
words

REDDIT PYTHON

**Summary:** <!-- SC\_OFF --><div class="md"><p>What is everyone's experience with adding type hints to the test suite? Do you do it (or are required to do it at work)? Do you think it is worth it?</p> <p>I tried it with a couple of my own projects recently, and it did uncover some bugs, API inconsistencies, and ...</p></div>



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## OpenTSLM: Language models that understand time series



rjakob



2025-10-01

1  
min225  
words

HACKER NEWS





**Summary:** <p>Paper: <a href="https://www.opentslm.com/OpenTSLM-whitepaper.pdf" rel="nofollow">https://www.opentslm.com/OpenTSLM-whitepaper.pdf</a><p>Repo: <a href="https://github.com/StanfordBDHG/OpenTSLM" rel="nofollow">https://github.com/StanfordBDHG/OpenTSLM</a><p>Foundation models excel at text, images, a...



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<https://www.opentslm.com/>

## Jane Goodall has died





 jaredwiener  17 2025-10-01  1 min  13 words [HACKER NEWS](#)

**Summary:** <p>Article URL: <a href="https://www.latimes.com/obituaries/story/2025-10-01/jane-goodall-chimpanzees-dead">https://www.latimes.com/obituaries/story/2025-10-01/jane-goodall-chimpanzees-dead</a></p> <p>Comments URL: <a href="https://news.ycombinator.com/item?id=45441069">https://news.ycombinator.com/...

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## The Company Man



 surprisetalk  17 2025-10-01  1 min  13 words [HACKER NEWS](#)

**Summary:** <p>Article URL: <a href="https://www.lesswrong.com/posts/JH6tJhYpnoCfFqAct/the-company-man">https://www.lesswrong.com/posts/JH6tJhYpnoCfFqAct/the-company-man</a></p> <p>Comments URL: <a href="https://news.ycombinator.com/item?id=45443298">https://news.ycombinator.com/item?id=45443298</a></p> <p>Poin...

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<https://www.lesswrong.com/posts/JH6tJhYpnoCfFqAct/the-company-man>

## Perceptual Decoupling Underlies Internal Shielding Benefit during Switches between External and Internal Attention: Evidence from Early Sensory Event-related Potential Components

 2025-09-08  1 min  251 words

COGNITIVE NEUROSCIENCE

**Summary:** People need to often switch attention between external and internal sources of information, that is, external and internal attention, respectively. There has been a recent surge of research interest in this type of attentional flexibility, which has revealed that it is characterized by an asymmetric...

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## Lexical and Information Structure Functions of Prosody and Their Relevance for Spoken Communication: Evidence from Psychometric and Electroencephalographic Data

 2025-09-08  1 min  234 words

COGNITIVE NEUROSCIENCE

**Summary:** Prosody not only distinguishes “lexical” meaning but also plays a key role in information packaging by highlighting the most relevant constituent of the discourse, namely, “focus” information. The present study investigated the role of lexical and focus functions of prosody in the coherent interpret...

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## Musical Structure Influences the Perception of Sound Location



2025-09-08

1  
min209  
words

COGNITIVE NEUROSCIENCE

**Summary:** The perception of multilayered auditory stimuli, such as music or speech, relies on the integration of progressively more complex and abstract features as they are processed along the auditory pathway. To investigate whether higher-level musical structure modulates auditory perception or merely the ...



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## Call for Applications: IEEE T-MRB Editor in Chief Search

Deidre  
Artis

2025-04-03

1  
min18  
words

EMBS


**Summary:** <p>The post <a href="https://www.embs.org/uncategorized/call-for-applications-ieee-tmr-editor-in-chief-search/">Call for Applications: IEEE T-MRB Editor in Chief Search</a> appeared first on <a href="https://www.embs.org">IEEE EMBS</a>.</p>




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## Call for Applications Editor-in-Chief: IEEE Open Journal of Engineering in Medicine and Biology

 Deidre  
Artis

 2025-04-04

 1  
min

 22  
words


EMBS


**Summary:** <p>The post <a href="https://www.embs.org/ojemb/search-for-editor-in-chief/#new\_tab">Call for Applications Editor-in-Chief: IEEE Open Journal of Engineering in Medicine and Biology</a> appeared first on <a href="https://www.embs.org">IEEE EMBS</a>.</p>

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## Notice to IEEE EMBS Members: Change to Field of Interest

 Nancy  
Zimmerman

 2025-04-27

 1  
min

 19  
words


EMBS



**Summary:** <p>The post <a href="https://www.embs.org/blog-post/change-foi-for-ieee-embs/">Notice to IEEE EMBS Members: Change to Field of Interest</a> appeared first on <a href="https://www.embs.org">IEEE EMBS</a>.</p>


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## Notice to IEEE EMBS Members: Change to Field of Interest

 Nancy  
Zimmerman

 2025-04-27  1  
min

 19  
words


EMBS



**Summary:** <p>The post <a href="https://www.embs.org/blog-post/change-foi-for-ieee-embs/#new\_tab">Notice to IEEE EMBS Members: Change to Field of Interest</a> appeared first on <a href="https://www.embs.org">IEEE EMBS</a>.</p>


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## Open Call for AdCom Nominations

 Nancy  
Zimmerman

 2025-05-02  1  
min

 14  
words

EMBS


**Summary:** <p>The post <a href="https://www.embs.org/uncategorized/call-for-adcom-nominations/">Open Call for AdCom Nominations</a> appeared first on <a href="https://www.embs.org">IEEE EMBS</a>.</p>



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
<https://www.embs.org/uncategorized/call-for-adcom-nominations/>



## IEEE EMBS Appoints Sunghoon “Ivan” Lee, Ph.D., as Editor-in-Chief of EMBC Proceedings, the Leading Biomedical Engineering Conference Publication

 Nancy  
Zimmerman

 2025-08-19  1  
min

 79  
words

EMBS


**Summary:** <p>(Piscataway, N.J., August 12, 2025) Sunghoon “Ivan” Lee, Ph.D., a Donna M. and Robert J. Manning Faculty Fellow and an Associate Professor of computer science, electrical and computer engineering, and&#8230; <a class="continue" href="https://www.embs.org/press/embc-eic-sunghoon-ivan-lee/">Continu...

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<https://www.embs.org/press/embc-eic-sunghoon-ivan-lee/>

## Associations between reproductive milestones and Alzheimer’s disease risk: a Mendelian randomization study

 1  
min

 23  
words

BRAIN RESEARCH


**Summary:** <p>Publication date: 15 November 2025</p><p><b>Source:</b> Brain Research, Volume 1867</p><p>Author(s): Ye Wang, Danyang Zhao, Tiantian Kong, Yan Ni, Yanlong Liu, Yimin Kang, Fan Wang</p>

 Read full article:

[https://www.sciencedirect.com/science/article/pii/S0006899325005359?dgcid=rss\\_sd\\_all](https://www.sciencedirect.com/science/article/pii/S0006899325005359?dgcid=rss_sd_all)

## DJ-1/PARK7 in Parkinson's disease: mechanisms of pathogenesis and therapeutic potential

 1  
min

 20  
words


NEUROSCIENCE JOURNAL


**Summary:** <p>Publication date: 10 November 2025</p><p><b>Source:</b> Neuroscience, Volume 587</p><p>Author(s): Weicong Bao, Ying Ge, Juan Huang, Yuanyuan Li, Yong Luo, Nanqu Huang</p>

 Read full article:

[https://www.sciencedirect.com/science/article/pii/S0306452225009492?dgcid=rss\\_sd\\_all](https://www.sciencedirect.com/science/article/pii/S0306452225009492?dgcid=rss_sd_all)

## Menstrual cycle phase alters corticospinal excitability and spike-timing-dependent plasticity in healthy females

 Spillane, P., Pastorio, E., Nedelec, E., Piasecki, J., Goodall, S., Hicks, K. M., Ansdell, P.

 2025-10-01

 1  
min

 251  
words

BIORXIV NEUROSCIENCE

**Summary:** The known fluctuations in ovarian hormone concentrations across the eumenorrheic menstrual cycle contribute to modulations in cortical excitability and inhibition. However, how such changes affect spike-timing-dependent plasticity (STDP) has not been systematically studied. This research aimed to de...

 Read full article:

<https://www.biorxiv.org/content/10.1101/2025.09.30.679456v1?rss=1>

## Exploring Single-Cell Gene Regulatory Dynamics in Rett Syndrome



Rodriguez, S. G., Cartas-Espinel, I., Villaman, C., Vidal, M., Perez-Palma, E., Espinal-Enriquez, J., Martin, A. J., Saez, M. A.



2025-10-01



1  
min



342  
words

BIORXIV NEUROSCIENCE

**Summary:** Rett syndrome is a monogenic disorder with an incidence of 95% in women, characterized by the complexity of studying the associated phenotype due to the heterogeneity in patient tissues from the stochastic silencing of the affected X chromosome. Furthermore, we are largely unaware of the cascade of ...



Read full article:

<https://www.biorxiv.org/content/10.1101/2025.10.01.679774v1?rss=1>

## Cerebral Bases and Neural Dynamics of Audiovisual Temporal Binding Window: a TMS study



Leblond, S., Atger, T., Berry, I., Roux, F.-E., Cappe, C., Baures, R.



2025-10-01



1  
min



199  
words

BIORXIV NEUROSCIENCE

**Summary:** The temporal binding window (TBW) refers to the time interval within which two stimuli, typically visual and auditory, are perceived as synchronous. Neural bases underlying this process consistently implicate a large-scale network with superior temporal sulcus (STS) as a central hub, alongside contr...



Read full article:

<https://www.biorxiv.org/content/10.1101/2025.10.01.679698v1?rss=1>

## This Week in The Journal



McKeon,  
P.



2025-10-01



1  
min



0  
words

JOURNAL NEUROSCIENCE THIS WEEK



Read full article:

<http://www.jneurosci.org/cgi/content/short/45/40/etwij45402025?rss=1>

## Annual Renewal: Why the Society for Neuroscience Meeting Keeps Drawing Me Back



Raman, I.  
M.



2025-10-01



1  
min



54  
words

JOURNAL NEUROSCIENCE CURRENT


**Summary:** <p>Registering for my 35th consecutive Society for Neuroscience Annual Meeting in early July 2025, I realized the Conference is the longest standing yearly ritual of my life. I couldn't help wondering, why do I keep doing it? Is it duty or desire, an act of fidelity or of faith? And is it worth it?<...</p></div>




Read full article:

<http://www.jneurosci.org/cgi/content/short/45/40/e1524252025?rss=1>

Page 156 of 539 • Generated October 02, 2025 at 08:24 AM UTC

## The Somatostatin Pathway Projected from the Basal Forebrain to the Lateral Habenula Promotes Isoflurane Anesthesia Recovery

 Wang, Y., Wang, Z., Xu, M., Wang, J., Cai, S., Zheng, D., Tang, A., Yu, T., Wang, Y., Luo, T., Yu, S.

 2025-10-01  1 min  210 words

JOURNAL NEUROSCIENCE CURRENT


**Summary:** <p>The basal forebrain (BF) acts as a pivotal relay station in the transmission of arousal signals, projecting to both cortical and subcortical structures. Among its downstream targets is the lateral habenula (LHb), which recent research has implicated in the modulation of sleep rhythms and in media...






Read full article:

<http://www.jneurosci.org/cgi/content/short/45/40/e1316242025?rss=1>

# Stopping Muscle Contractions and Relaxations during Action Inhibition Involves Global and Targeted Control Dependent on Muscle State

 De Havas, J., Ibanez, J., Gomi, H., Bestmann, S.

 2025-10-01  1 min

 245 words

JOURNAL NEUROSCIENCE CURRENT


**Summary:** <p>The mechanisms underpinning the stopping of muscle contractions and relaxations during action inhibition remain unclear. Central stop commands may be targeted and act on task-active muscles only, or instead be global, acting on task-passive muscles as well. We addressed this question in three sto...




Read full article:

<http://www.jneurosci.org/cgi/content/short/45/40/e1170252025?rss=1>

## Beta and High Gamma Oscillations in the Cortico-striatal Network Reflect Reward Certainty on a Probabilistic Reversal Learning Task

 Koloski, M. F., Salimi, M., Hulyalkar, S., Tang, T., Barnes, S. A., Mishra, J., Ramanathan, D. S.

 2025-10-01  1 min  244 words

JOURNAL NEUROSCIENCE CURRENT


**Summary:** <p>Behavioral outcomes are rarely certain, requiring subjects to discriminate between available choices by using feedback to guide future decisions. Probabilistic reversal learning (PRL) tasks test subjects’s ability to learn and flexibly adapt to changes in reward contingencies. Cortico-striat...



Read full article:

<http://www.jneurosci.org/cgi/content/short/45/40/e0858252025?rss=1>

## Mechanisms of Long-Term Nonexternally Reinforced Preference Change: Functional Connectivity Changes in a Longitudinal Functional MRI Study

 Itzkovitch, A., Oren, S., Chopra, S., Fornito, A., Schonberg, T.



2025-10-01



1 min



210 words

JOURNAL NEUROSCIENCE CURRENT


**Summary:** Behavioral change studies mostly focus on external reinforcements to modify preferences. Cue-approach training (CAT) is a paradigm that influences preferences by the mere association of stimuli, sensory cues, and a rapid motor response, without external reinforcements. The behavioral effect has b...



Read full article:

<http://www.jneurosci.org/cgi/content/short/45/40/e0702252025?rss=1>

## PolyQ-Expansion of Ataxin-2 Disrupts Microtubule Stability and Impairs Axon Outgrowth

 Kim, S. K., Gelfand, V. I.



2025-10-01



1 min



185 words

JOURNAL NEUROSCIENCE CURRENT

**Summary:** Amyotrophic lateral sclerosis (ALS) is a fatal neurodegenerative disease characterized by mislocalization and aggregation of proteins in motor neurons. Ataxin-2 (ATXN2), an RNA-binding protein harboring 22-polyglutamine (polyQ) repeats, is a risk factor for ALS, when its polyQ repeats are expande...




Read full article:

<http://www.jneurosci.org/cgi/content/short/45/40/e0682252025?rss=1>



## Disrupted Calcium Dynamics in Reactive Astrocytes Occur with End Feet-Arteriole Decoupling in an Amyloid Mouse Model of Alzheimer's Disease

 Weiss, B. E., Gant, J. C., Lin, R.-L., Gollihue, J. L., Rogers, C. B., Kraner, S. D., Rucker, E. B., Katsumata, Y., Jiang, Y., Nelson, P. T., Wilcock, D. M., Sompol, P., Thibault, O., Norris, C. M.

 2025-10-01  1 min  233 words

JOURNAL NEUROSCIENCE CURRENT

**Summary:** <p>While cerebrovascular dysfunction and reactive astrocytosis are extensively characterized hallmarks of Alzheimer's disease (AD) and related dementias, the dynamic relationship between reactive astrocytes and cerebral vessels remains poorly understood. Here, we used jGCaMP8f and two-photon microsc...

 **Read full article:**

<http://www.jneurosci.org/cgi/content/short/45/40/e0349252025?rss=1>

## mWAKE in the Central Amygdala Regulates Fear Learning and Memory



Xiong, J., Mehta, A., Liu, Q., Luo, A. X., Li, P. P., Janak, P. H., Wu, M. N.



2025-10-01



1 min



199 words

JOURNAL NEUROSCIENCE CURRENT

**Summary:** <p>The central amygdala (CeA) is an important neuronal hub that integrates external sensory inputs and information about internal states to regulate a range of innate and learned behaviors, including fear learning and memory. Prior studies, leveraging robust fear conditioning assays, have delineated...



Read full article:

<http://www.jneurosci.org/cgi/content/short/45/40/e0225252025?rss=1>

## Attention Defines the Context for Implicit Sensorimotor Adaptation



Wang, T., Li, J., Ivry, R. B.



2025-10-01



1 min



161 words

JOURNAL NEUROSCIENCE CURRENT

**Summary:** <p>The sensorimotor system continuously uses error signals to remain precisely calibrated. We examined how attention influences this automatic and implicit learning process in humans (male and female). Focusing first on spatial attention, we compared conditions in which attention was oriented either...



Read full article:

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## This Week in The Journal



McKeon,  
P.



2025-10-01



1  
min



0  
words

JOURNAL NEUROSCIENCE CURRENT



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## Approaches for retraining sEMG classifiers for upper-limb prostheses



Benjamin  
Metcalf



2025-10-01



1  
min



178  
words

FRONTIERS NEUROBOTICS


**Summary:** Introduction Abandonment rates for myoelectric upper limb prostheses can reach 44%, negatively affecting quality of life and increasing the risk of injury due to compensatory movements. Traditional myoelectric prostheses rely on conventional signal processing for the detection and classification of m...





Read full article:

<https://www.frontiersin.org/articles/10.3389/fnbot.2025.1627872>

## Evaluating the efficacy of probiotics in treating Parkinson's disease model rats using magnetic resonance enhanced gradient echo T2-weighted angiography sequence


 Hongzhi Lu

 2025-10-01  1 min

 267 words


FRONTIERS NEUROSCIENCE


**Summary:** Background Parkinson's disease (PD) involves iron deposition in the substantia nigra (SN) and loss of dopaminergic neurons, with gut microbiota dysbiosis potentially affecting the brain iron via the gut-brain axis, whereas magnetic resonance enhanced gradient echo T2-weighted angiography (ESWAN) enab...


 Read full article:

<https://www.frontiersin.org/articles/10.3389/fnins.2025.1662530>

## Understanding the effects of transcranial direct current stimulation on the neurovascular unit: a narrative review


 Andrew Flood

 2025-10-01  1 min

 205 words

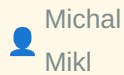
FRONTIERS NEUROSCIENCE

**Summary:** Transcranial direct current stimulation (tDCS) is a non-invasive neuromodulation technique that has demonstrated promise both for treating diverse clinical conditions and for enhancing brain function in healthy adults. Despite increasing popularity, the precise physiological mechanisms underlying it...

 Read full article:

<https://www.frontiersin.org/articles/10.3389/fnins.2025.1667100>

## Smooth dynamic T2\* mapping in fMRI based on a novel, total variation-minimizing algorithm for efficient multi-echo BOLD time series denoising with high signal-to-noise and contrast-to-noise ratios



Michal  
Mikl



2025-10-01



1  
min



336  
words

FRONTIERS NEUROSCIENCE

**Summary:** Introduction This report deals with advanced processing of blood oxygenation-dependent (BOLD) functional magnetic resonance imaging (fMRI) signals. It does not address functional characteristics of the human cortex, such as functional connectivity. fMRI is based on measurement of BOLD variations of t...



Read full article:

<https://www.frontiersin.org/articles/10.3389/fnins.2025.1544748>

## PI-MMNet: a cross-modal neural network for predicting neurological deterioration in pontine infarction



Ruyue  
Huang



2025-10-01



1  
min



159  
words

FRONTIERS NEUROSCIENCE


**Summary:** Introduction Pontine infarction, a subtype of ischemic stroke, often leads to neurological deterioration (ND). Current diagnostic methods rely mainly on imaging and neglect clinical data, while existing multimodal models struggle with small lesions, heterogeneous inputs, and high computational cost. M...




Read full article:


<https://www.frontiersin.org/articles/10.3389/fnins.2025.1637079>

## Differences in dynamic functional connectivity between musicians and non-musicians during naturalistic music listening

 Elvira Brattico


 2025-10-02

 1 min

 209 words

FRONTIERS NEUROSCIENCE


**Summary:** IntroductionBased on tens of neuroimaging studies and a meta-analysis, we know that music expertise is associated with increases in brain volume and activity in structures related to audition, action, and various cognitive functions. What is less known is how music expertise affects the brain's func...

 Read full article:


<https://www.frontiersin.org/articles/10.3389/fnins.2025.1649733>

## Chronotype, cognitive outcomes, and neural dynamics: recent evidence and potential mechanisms with implications for perioperative period

 Yatao Liu

 2025-10-02

 1 min

 192 words


FRONTIERS NEUROSCIENCE

**Summary:** Circadian rhythm plays a fundamental role in regulating biological functions, including sleep–wake preferences, body temperature, hormone secretion, food intake, cognitive function and physical performance. The sleep chronotype, as part of the circadian rhythm, usually refers to an individual's subj...

 Read full article:

<https://www.frontiersin.org/articles/10.3389/fnins.2025.1649396>

## The taste of trigeminal sensations: relation between taste, lingual tactile acuity, and spicy perception in patients with taste dysfunction

 Thomas Hummel



2025-05-28



1 min



70 words

TACTILE ACUITY


**Summary:** In the oral cavity, oral stereognosis and chemesthesis refer to the abilities to recognize shapes and detect noxious substances, respectively, through various receptors distributed on the tongue. The absence of standardized methods to assess oral somatosensory perception has led to a lack of consens...

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## Measuring the Distribution of Tactile Acuity at the Index Finger and Thumb Fingertips

 Hiroyuki Kajimoto



2025-06-17



1 min



75 words

TACTILE ACUITY


**Summary:** In our day-to-day activities, we utilize not only the pads of our fingers but also the sides and hemispherical tips when manipulating objects. For teleoperation systems to replicate these real-life interactions, tactile sensation must be presented and distributed across the entire fingertip. Thus, u...


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## Optimizing Vibrotactile Feedback for Sensory Substitution in the Thigh: Spatial Acuity and Frequency Characteristics

 Leah R  
Bent

 2025-06-27

 1  
min

 69  
words

TACTILE ACUITY


**Summary:** Amputation of a lower limb not only affects mobility but also interferes with sensory feedback, leading to an elevated risk of falls among individuals living with amputation. Sensory substitution, achieved through tactile displays embedded in transfemoral prosthetic sockets, presents a promising non...


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## Directional vibro-tactile hazard warnings for drivers with vision impairments

 Alex R  
Bowers

 2025-07-02

 1  
min

 80  
words

TACTILE ACUITY

**Summary:** Vision impairment may delay responses to hazards when driving. In a proof-of-concept driving simulator study, we evaluated a hazard warning device designed for vision impaired drivers. Three groups participated: 11 persons with central vision loss (CVL; median age 60 years), 12 with homonymous field...


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## Sensitivity and vagal reactivity to C-tactile-mediated affective touch in mild cognitive impairment due to Alzheimer's disease

 Cecilia  
Guariglia

 2025-08-01  1  
min

 64  
words

TACTILE ACUITY

**Summary:** BackgroundC-tactile (CT) afferents preferentially activate in response to slow caress-like touch, evoking a diffuse pleasant sensation and promoting autonomic regulation. According to Braak's classic model, the neurodegenerative process in Alzheimer's disease (AD) only affects somatosensory cortices...



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## Differences in tactile grid localization accuracy between people with back pain compared to individuals without pain

 Eric  
Fjeldheim

 2025-08-24  1  
min

 22  
words

TACTILE ACUITY

**Summary:** OBJECTIVES: The study aimed to investigate the grid localization test (GLT) between patients with lower back pain and those without back pain.

 **Read full article:**

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## Eye Drop Instillation Success and Hand Function in Adults with Glaucoma: A Pilot Study



Paula Anne Newman-  
Casey



2025-09-09



1  
min



74  
words

TACTILE ACUITY

**Summary:** CONCLUSIONS: Despite hand function deficits, in this exploratory pilot study, adults with glaucoma demonstrated eye drop instillation success comparable to those without glaucoma, though with higher rates of bottle tip contact with the eye, skin, or eyelashes, suggesting an increased risk of potenti...



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## Functional evidence for early origin of tactile acuity in the vertebrate somatosensory system



Sviatoslav N  
Bagriantsev



2025-09-13



1  
min



58  
words

TACTILE ACUITY

**Summary:** Mammals and reptiles possess a sophisticated somatosensory system for precise tactile discrimination via mechanosensory end-organs, such as Meissner and Pacinian corpuscles and others. These structures detect sustained pressure, velocity, and vibrations, thereby facilitating nuanced environmental in...






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## The coarse mental map of the breast is anchored on the nipple

 Charles M  
Greenspon

 2025-09-18  1  
min

 86  
words

TACTILE ACUITY

**Summary:** Touch plays a key role in our perception of our body and shapes our interactions with the world, from the objects we manipulate to the people we touch. While the tactile sensibility of the hand has been extensively characterized, much less is known about touch on other parts of the body. Despite the...



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## Haptic Feedback Systems for Lower-Limb Prosthetic Applications: A Review of System Design, User Experience, and Clinical Insights

 Runar  
Unnthorsson

 2025-09-27  1  
min

 65  
words

TACTILE ACUITY


**Summary:** Systems presenting haptic information have emerged as an important technological advance in assisting individuals with sensory impairments or amputations, where the aim is to enhance sensory perception or provide sensory substitution through tactile feedback. These systems provide information on lim...

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## Exploring the use of smartphone applications during navigation-based tasks for individuals who are blind or who have low vision: future directions and priorities

 Joseph Paul  
Nemargut



2025-08-25



1  
min



62  
words

**BRaille**


**Summary:** CONCLUSION: These results provide vital insights for technology developers about the perceived utility of smartphone apps for people with low vision or blindness during navigation. Our results highlight the importance of built-in accessibility features for users with visual impairments. As additiona...

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## Gradient Porous Flexible Pressure Sensors with the Relay Effect for High-Accuracy Braille-to-Speech Recognition

 Jianming  
Xu



2025-08-25



1  
min



62  
words

**BRaille**

**Summary:** The development of highly sensitive, wide linear-range flexible pressure sensors is crucial for practical applications in human-computer interaction, physiological signal detection, and motion monitoring. However, traditional flexible pressure sensors often suffer from limited compressibility in the...



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## Individual and community level factors influencing modern contraceptive use among women of reproductive age in South Africa: a multilevel analysis

 Million  
Phiri

 2025-08-26  1  
min

 46  
words

**BRaille**


**Summary:** CONCLUSION: Sensory disability status influenced women's contraceptive behaviour in South Africa. Current family planning interventions should target women with sensory disabilities by prioritising accessible communication methods (e.g., braille, sign language), disability awareness training for hea...



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## Explosion-powered eversible tactile displays

 Robert F  
Shepherd

 2025-08-27  1  
min

 64  
words

**BRaille**


**Summary:** High-resolution electronic tactile displays stand to transform haptics for remote machine operation, virtual reality, and digital information access for people who are blind or visually impaired. Yet, increasing the resolution of these displays requires increasing the number of individually addressa...


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## A Biomimetic Fiber-Entangled Permeable Electronic Skin for Strain-Insensitive and High-Resolution Tactile Sensing

 Zhijun  
Ma

 2025-08-28

 1  
min

 57  
words

[BRAILLE](#)


**Summary:** Electronic skins (e-skins) incorporating island architectures represent a promising platform for strain-insensitive tactile sensing by mechanically decoupling sensing units from deformations. However, conventional island designs encounter stress concentration issues caused by inherent modulus mismat...


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## High-Density Tactile Sensor Array for Sub-Millimeter Texture Recognition

 Min  
Zhang

 2025-08-28

 1  
min

 64  
words

[BRAILLE](#)

**Summary:** High-density tactile sensor arrays that replicate human touch could restore texture perception in paralyzed individuals. However, conventional tactile sensor arrays face inherent trade-offs between spatial resolution, sensitivity, and crosstalk suppression due to microstructure size limitations and ...

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## A Diachronic Investigation of the Change in Form and Formational-Semantic Systematicity of the Chinese Sign Language Lexicon



Hao  
Lin



2025-09-01



1  
min



72  
words

BRAILLE

**Summary:** It has been argued in previous research that several competing pressures guide the directions of language evolution (economy vs. redundancy; arbitrariness vs. systematicity). For sign languages, however, the effects of competing pressures on their change of lexical systems remain largely unclear. In...



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## Wireless Electrotactile System with Hydrogel-Based Electrodes for Conformal Tactile Interaction



Ji  
Liu



2025-09-02



1  
min



56  
words

BRAILLE

**Summary:** A wireless epidermal electrotactile interface is demonstrated through integration of skin-conformal electrodes and flexible circuitry, addressing existing limitations in haptic technology caused by mechanical mismatch and system-level integration challenges. This electrotactile system achieves low s...



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## Beyond access: rethinking assistive technology for individuals with visual impairments in Türkiye

Önder  
İşlek

17

2025-09-12



1  
min



55  
words

BRaille

**Summary:** CONCLUSION: Despite demonstrating adaptability, individuals with VI in Türkiye face significant structural barriers to equitable AT access. Informal learning limited public support, and a lack of locally adapted tools contribute to digital exclusion. A rights-based approach-emphasizing inclusive fun...

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## High prevalence of bacterial STI, anal HPV, cytological abnormalities and anal lesions among MSM in Togo, 2021: a baseline analysis of the ANRS I MIE 12,400/DepIST-H cohort

Didier K  
Ekouevi

17

2025-09-27



1  
min



42  
words

BRaille

**Summary:** CONCLUSIONS: These findings emphasize the high prevalence of STIs among MSM and confirm the unusual distribution of HPV types in West Africa, with HPV35 being highly prevalent. A national strategy regarding STI screening and HPV vaccination in this key population is needed.

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## Preliminary evidence for high-definition transcranial direct current stimulation effects on white matter microstructure and executive function in mild cognitive impairment



Huan

Li



2025-09-30



1

min



62

words

TDCS TACS TRNS

**Summary:** CONCLUSION: The findings suggest that HD-tDCS targeting the L-DLPFC may promote microstructural remodeling in white matter tracts, evidenced by elevated fractional anisotropy within the corticospinal and anterior thalamic pathways. While global cognitive measures remained stable, a trend toward impr...



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## Stepwise interventional psychiatry approach for major depression: A case series



Jean-Philippe

Miron



2025-09-30



1

min



46

words

TDCS TACS TRNS

**Summary:** CONCLUSIONS: This case series suggests that a sequential neuromodulation strategy may increase overall response rates in TRD by capturing different responder profiles across modalities. These findings support the feasibility of a pragmatic stepwise approach and highlight the need for controlled stud...





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## On the mechanisms of epidermal stemness and differentiation

 Raghvendra  
Singh

 2025-10-01  1  
min

 70  
words

TDCS TACS TRNS


**Summary:** High Wnt and low Notch activities characterize epidermal stem cells (SCs), while low Wnt and high Notch activities characterize the terminally differentiated epidermal cells (TDCs). However, the mechanism by which transit amplifying cells (TACs) are induced to become terminally differentiated remain...

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## Effects of Transcranial Direct Current Stimulation on pain and pain-related outcomes: an umbrella review

 Dmitriy  
Viderman

 2025-10-01  1  
min

 64  
words

TDCS TACS TRNS


**Summary:** CONCLUSIONS: Our findings suggest that tDCS might be effective for fibromyalgia, migraine, and neuropathic pain associated with spinal cord injury and stroke. However, further evidence is needed for chronic orofacial pain, multiple sclerosis, knee osteoarthritis, central post-stroke pain, intra-abdo...


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## A novel machine learning-based method to quantify the effect of transcranial direct current stimulation on opioid users

 Davoud  
Ahmadi

 2025-10-01

 1  
min

 19  
words

TDCS TACS TRNS

**Summary:** CONCLUSION: These findings suggest that tDCS can be an effective intervention for reducing craving in patients with opioid addiction.


 Read full article:

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## Quantitative analysis of [<sup>18</sup>F]CHL2310, a novel PET ligand for cholesterol 24-Hydroxylase, in nonhuman primate brain

 Lu  
Wang

 2025-10-01

 1  
min

 32  
words

TDCS TACS TRNS


**Summary:** CONCLUSION: [<sup>18</sup>F]CHL2310 shows high in vivo specificity, favorable pharmacokinetic properties, and robust quantitative performance in non-human primates. These characteristics support its potential as a PET radiotracer for imaging CYP46A1 in human studies.


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## Dissemination and Impact of a Multimodal Pain Regimen on Analgesia Prescribing at an Academic Hospital

 Avi  
Bhavaraju


 2025-10-01

 1  
min

 30  
words

TDCS TACS TRNS


**Summary:** CONCLUSIONS: Implementation of an MMP protocol by a single division can facilitate the spread of nonopioid adjunctive pain medication use and decrease opioid utilization throughout surgical specialties in a hospital.


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## Developing a Trainee Advisory Committee Within a Pediatric Hospital Medicine Research Network

 Karen L  
Forbes

 2025-10-01

 1  
min

 62  
words

TDCS TACS TRNS

**Summary:** Medical research networks are essential for advancing clinical care. Despite the recognized importance of building research capacity and training future pediatric researchers, trainee engagement within these research networks remains inconsistent. To address this, the Paediatric Inpatient Research N...



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
[https://pubmed.ncbi.nlm.nih.gov/41033682/?](https://pubmed.ncbi.nlm.nih.gov/41033682/?utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=143rKCPgMwbasrj66gQ1r1ebioUg42SIGRyVKSoW4m6X-ecQ00&fc=None&ff=20251002022904&v=2.18.0.post9+e462414)

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## Personalised dual-site alpha transcranial alternating current stimulation (tACS) targeting right frontoparietal network reduces craving in heroin use disorder

 Kai  
Yuan

 17 2025-10-01  1  
min

 2  
words

TDCS TACS TRNS



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## Effects of transcranial alternating current stimulation on cognitive function in older adults: a systematic review and meta-analysis of randomized controlled trials

 Yuxia  
Ma

 17 2025-10-01  1  
min

 42  
words

TDCS TACS TRNS


**Summary:** CONCLUSION: tACS intervention significantly improves immediate memory and delayed memory in older adults with AD. Further large-scale RCTs are needed to clarify the specific effects of tACS on various cognitive domains, and optimal stimulation parameters should be investigated to guide clinical prac...


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## AI-Driven Multimodal Brain-State Decoding for Personalized Closed-Loop TENS: A Comprehensive Review

 Ping  
Shi

 2025-09-27

 1  
min

 64  
words

FNIRS


**Summary:** Chronic pain is a dynamic, brain-wide condition that eludes effective management by conventional, static treatment approaches. Transcutaneous Electrical Nerve Stimulation (TENS), traditionally perceived as a simple and generic modality, is on the verge of a significant transformation. Guided by adva...


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## Exploring Imagined Movement for Brain-Computer Interface Control: An fNIRS and EEG Review

 Jamshed  
Iqbal

 2025-09-27

 1  
min

 66  
words

FNIRS


**Summary:** Brain-Computer Interfaces (BCIs) offer a non-invasive pathway for restoring motor function, particularly for individuals with limb loss. This review explored the effectiveness of Electroencephalography (EEG) and function Near-Infrared Spectroscopy (fNIRS) in decoding Motor Imagery (MI) movements for...



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## Sex Differences in Cortical Hemodynamic Responses During Interactive and Passive Tasks: An fNIRS Study Using the Nefroball System

 Aleksandra  
Ryl

 2025-09-27  1  
min

 69  
words

**fNIRS**


**Summary:** The present study aimed to investigate sex differences in the hemodynamic response of the cerebral cortex during interactive and passive tasks using functional near-infrared spectroscopy fNIRS. Ninety-seven healthy adults (63 women, 34 men) participated in the study. Participants performed two tasks...



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## Editorial: Advanced fNIRS applications in neuroscience and neurological disorders

 Daifa  
Wang

 2025-09-29  1  
min

 2  
words

**fNIRS**

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## Brain network evolution in late preterm to term infants: a near-infrared spectroscopy imaging study



Yiwei

Li



2025-09-29



1

min



27

words

FNIRS

**Summary:** CONCLUSIONS: These results underscore the critical role of GA in shaping neonatal brain network functional organization and provide valuable insights for early intervention strategies in preterm infants.



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## Effectiveness and mechanism of moxibustion in treating chronic non-specific low back pain: study protocol for a multicenter randomized controlled trial



Han

Xiang



2025-09-29



1

min



67

words

FNIRS

**Summary:** INTRODUCTION: Chronic non-specific low back pain (CNLBP) represents the most commonly encountered subtype of low back pain (LBP) in clinical practice. It has no clearly identified etiological factors and is prone to recurrence, which severely compromises patients' quality of life. Moxibustion therap...



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## Effects of robot assisted mirror therapy on motor function and cortical activation in patients with right hemisphere damage

 Yifan Wang


 2025-09-29

 1 min

 75 words

FNIRS


**Summary:** Robot-assisted mirror therapy (MRT) is a cutting-edge rehabilitative treatment that combines mirror therapy and rehabilitation robots and can improve stroke patient participation in rehabilitation training. The aim of this study was to investigate the effects of MRT training in patients with right-h...


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## Advancing pain assessment in Alzheimer's disease and related dementias: Functional near-infrared spectroscopy for investigating brain activity

 Hyochol  
Ahn

 17 2025-09-30

 1  
min

 58  
words

**FNIRS**


**Summary:** CONCLUSION: fNIRS demonstrated feasibility as an objective pain assessment tool in ADRD. tDCS served only as a probe to induce cortical modulation for evaluating fNIRS performance. In this study, tDCS functioned as a probe to induce cortical modulation for evaluating fNIRS sensitivity, not as a ther...


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## MEFD dataset and GCSFormer model : Cross-subject emotion recognition based on multimodal physiological signals

 Wenbo Dong

 2025-10-01

 1 min

 62 words

**FNIRS**


**Summary:** Cross-subject emotion recognition is an important research direction in the fields of affective computing and brain-computer interfaces, aiming to identify the emotional states of different individuals through physiological signals such as functional near-infrared spectroscopy (fNIRS) and electroenc...



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## Analysis of the analgesic mechanism of TENS-WAA in colonoscopy using the EEG-fNIRS system: a study protocol for a randomised controlled trial

 Fanfu  
Fang

 2025-10-01  1  
min

 62  
words

**FNIRS**

**Summary:** INTRODUCTION: Colonoscopy is an essential procedure for the early diagnosis of colorectal conditions; however, over 60% of patients undergoing non-sedated colonoscopy report moderate to severe pain. This study aims to investigate the central analgesic mechanisms of transcutaneous electrical nerve st...



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## Machine learning predictions from unpredictable chaos

 Guo-Wei  
Wei

 2025-09-30  1  
min

 68  
words

**BRAIN COMPUTER INTERFACE**


**Summary:** Chaos is omnipresent in nature, and its understanding provides enormous social and economic benefits. However, the unpredictability of chaotic systems is a textbook concept due to their sensitivity to initial conditions, aperiodic behaviour, fractal dimensions, nonlinearity and strange attractors. I...


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## EEG-based motor execution classification of upper and lower extremities using machine learning

 Cengiz  
Tepe

 2025-10-01

 1  
min

 61  
words

BRAIN COMPUTER INTERFACE

**Summary:** This study classifies upper- and lower-extremity motor execution from electroencephalography (EEG). We compared two feature extractors, statistical features and Common Spatial Patterns (CSP), and four classifiers: K-Nearest Neighbors, Linear Discriminant Analysis (LDA), Multilayer Perceptron, and Su...


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## The Contribution of Wearable Devices and Artificial Intelligence to Promoting Healthy Aging

 Chaiyavat  
Chaiysut

 2025-10-01

 1  
min

 51  
words

BRAIN COMPUTER INTERFACE

**Summary:** CONCLUSION: The evolving landscape of wearable technologies, exemplified by Fitbit®, Acti- Graph™, and other interventions, holds substantial promise for reshaping healthcare approaches for the aging population. Addressing the limitations will be crucial as research progresses to ensure the effectiv...


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## Revolutionizing brain-computer interfaces: Compact and high-speed wireless neural signal acquisition

 Gang  
Wang

 2025-10-01

 1  
min

 64  
words

BRAIN COMPUTER INTERFACE

**Summary:** A brain-computer interface (BCI) facilitates the connection between the human brain and external devices by decoding neurophysiological signals, thereby enabling seamless interaction between humans and machines. However, existing neural signal acquisition systems often suffer from limited channel co...

 Read full article:

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## An EEG-EMG-based Hybrid Brain-Computer Interface for Decoding Tones in Silent and Audible Speech

 Chunzhi  
Yi

 2025-10-01

 1  
min

 72  
words

BRAIN COMPUTER INTERFACE

**Summary:** Speech recognition can be widely applied to support people with language disabilities by enabling them to communicate through brain-computer interfaces (BCIs), thus improving their quality of life. Despite the essential role of tonal variations in conveying semantic meaning, there have been limited ...

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## MEFD dataset and GCSFormer model : Cross-subject emotion recognition based on multimodal physiological signals

 Wenbo Dong


 2025-10-01

 1 min

 62 words

BRAIN COMPUTER INTERFACE

**Summary:** Cross-subject emotion recognition is an important research direction in the fields of affective computing and brain-computer interfaces, aiming to identify the emotional states of different individuals through physiological signals such as functional near-infrared spectroscopy (fNIRS) and electroenc...

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[tbw4049Wgf\\_RdKXdtnCvGW0lVBZFpHe7zaN4k4DwoD5&fc=None&ff=20251002022858&v=2.18.0.post9+e462414](https://pubmed.ncbi.nlm.nih.gov/41033328/?utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1rSUu--tbw4049Wgf_RdKXdtnCvGW0lVBZFpHe7zaN4k4DwoD5&fc=None&ff=20251002022858&v=2.18.0.post9+e462414)

## High - Quality Decoding of RGB Images from the Neuronal Signals of the Pigeon Optic Tectum



Songwei  
Wang



2025-10-01



1  
min



38  
words

BRAIN COMPUTER INTERFACE

**Summary:** CONCLUSIONS: This research provides a novel technical pathway for high-quality visual neural decoding, with robust experimental metrics validating its effectiveness. It also offers experimental evidence to support investigations into the information processing mechanisms of the avian visual pathway.



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[tbw4049Wgf\\_RdKXdtNCvGW0IVBZFpHe7zaN4k4DwoD5&fc=None&ff=20251002022858&v=2.18.0.post9+e462414](https://pubmed.ncbi.nlm.nih.gov/41033466/?utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1rSUu--tbw4049Wgf_RdKXdtNCvGW0IVBZFpHe7zaN4k4DwoD5&fc=None&ff=20251002022858&v=2.18.0.post9+e462414)

## Transfer learning via distributed brain recordings enables reliable speech decoding



Nitin  
Tandon



2025-10-01



1  
min



63  
words

BRAIN COMPUTER INTERFACE

**Summary:** Speech brain-computer interfaces (BCIs) combine neural recordings with large language models to achieve real-time intelligible speech. However, these decoders rely on dense, intact cortical coverage and are challenging to scale across individuals with heterogeneous brain organization. To derive scal...



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## Peptide design through binding interface mimicry with PepMimic



Jianzhu  
Ma



2025-10-01



1  
min



71  
words

BRAIN COMPUTER INTERFACE

**Summary:** Peptides offer advantages for targeted therapy, including oral bioavailability, cellular permeability and high specificity, setting them apart from conventional small molecules and biologics. Here we develop an artificial intelligence algorithm, PepMimic, to transform a known receptor or an existing...



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## Physical Activity and Depressive Mood Share the Structural Connectivity Between Motor and Reward Networks



Tianzi  
Jiang



2025-10-01



1  
min



73  
words

BRAIN COMPUTER INTERFACE

**Summary:** In various studies, exercise has been revealed to have a positive effect on alleviating depressive symptoms. However, the neural basis behind this phenomenon remains unknown, as well as its underlying biological mechanism. In this study, we used a large neuroimaging cohort [ $n = 1,027$ , major depressi...



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## Extrapolating Quantum Factoring

 2025-09-28  1 min  2 words

HACKER NEWS

**Summary:** [Comments](https://news.ycombinator.com/item?id=45408631)

 Read full article:

<https://www.johndcook.com/blog/2025/09/28/extrapolating-quantum-factoring/>

## Enhanced volume and resting-state functional connectivity of amygdala subregions in patients with insomnia disorder

 1 min  31 words


NEUROSCIENCE JOURNAL

**Summary:**

Publication date: 1 November 2025

Source: Neuroscience, Volume 586


Author(s): Hui Wang, Haining Li, Jiawen Kou, Naderi Nejad Fatemeh, Yihao Peng, Yilin Qian, Chiyin Li, Wei Chen, Yuanping Zhou, Ming Zhang, Yingxiang Sun

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## Reassessing PCA-based characterization of spiral ganglion neuron cell lines

 1  
min

 14  
words

NEUROSCIENCE JOURNAL

**Summary:**

Publication date: 1 November 2025


Source: Neuroscience, Volume 586


Author(s): Souichi Oka, Ryota Ono, Yoshiyasu Takefuji

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## Spacetime concordance in the primate cortex

 Wang, P., Luo, X., Zuo, X.-N.


 2025-10-01

 1  
min

 172  
words

BIORXIV NEUROSCIENCE

**Summary:** The expanding scale and complexity of functional brain image datasets require space-time analytics. Spacetime concordance (STC) meets this need through an adaptive and robust framework optimized for high-speed analysis. At the core of STC, the Regional Functional Affinity (RFA) metric quantifies fun...

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<https://www.biorxiv.org/content/10.1101/2025.09.29.679376v1?rss=1>

## Beyond the straight path: high-density laminar recordings in the ventral hippocampus with curved microprobes



Hagler, J., Pizzoccaro, L., Wang, M., Ducharme, G., Amilhon, B., Cicoira, F.



2025-10-01



1 min



199 words

BIORXIV NEUROSCIENCE

**Summary:** Brain function is governed by neural circuits distributed across an intricate, three-dimensional landscape of anatomically complex structures. Current methods for monitoring neural activity are limited to investigating structures that lie along a single, linear trajectory. While this approach is eff...



Read full article:

<https://www.biorxiv.org/content/10.1101/2025.09.29.679383v1?rss=1>

## Flexible gaze reinstatement during working memory for natural scenes



Dong, Y., Hung, Y., Gaspariani, L., Kiyonaga, A.



2025-10-01



1 min



149 words

BIORXIV NEUROSCIENCE

**Summary:** Working memory (WM) representations may be more action-oriented and anatomically widespread than previously assumed. For instance, oculomotor signatures like gaze biases can reflect spatial WM content. However, the specificity and functional relevance of such signatures is unclear. Here, we tracked ...



Read full article:

<https://www.biorxiv.org/content/10.1101/2025.09.29.678115v1?rss=1>

## Nav1.8: Intrinsic limits on the functional effect of abrogation in DRG neurons

Dmytro V. Vasylyev Peng Zhao Betsy R. Schulman Stephen G. Waxman Department of Neurology and Center for Neuroscience and Regeneration Research, Yale School of Medicine, New Haven, CT 06510 Rehabilitation Research Center, Veterans Affairs Hospital, West Haven, CT 06516

 2025-09-26  1 min  46 words


PNAS NEUROSCIENCE


**Summary:** Proceedings of the National Academy of Sciences, Volume 122, Issue 39, September 2025. <br />Significance Nonaddictive treatment of pain remains a major challenge, particularly for neuropathic pain, which is often resistant to existing treatments. Voltage-gated sodium channel Nav1.8, selectively expr...

 Read full article:

<https://www.pnas.org/doi/abs/10.1073/pnas.2507342122?af=R>


## An adaptive transformer-based framework for advanced brain activity mapping and intelligent neurotherapeutic decision support

 Uma B. Goradiya

 2025-10-02  1 min  274 words

FRONTIERS HUMAN NEUROSCIENCE

**Summary:** Introduction Identification and treatment of neurological disorders depend much on brain imaging and neurotherapeutic decision support. Although they are loud, do not remain in one spot, and are rather complex, electroencephalogram (EEG) signals are the principal tool used in research of brain functi...

 Read full article:

<https://www.frontiersin.org/articles/10.3389/fnhum.2025.1551168>

## The impact of CSF-filled cavities on scalp EEG and its implications



Maria Carla  
Piastra



2024-06-14



1  
min



64  
words

OOSTENVELD ROBERT

**Summary:** Previous studies have found electroencephalogram (EEG) amplitude and scalp topography differences between neurotypical and neurological/neurosurgical groups, being interpreted at the cognitive level. However, these comparisons are invariably accompanied by anatomical changes. Critical to EEG are the...



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## Motion-BIDS: an extension to the brain imaging data structure to organize motion data for reproducible research



Julius  
Welzel



2024-07-02



1  
min



72  
words

OOSTENVELD ROBERT

**Summary:** We present an extension to the Brain Imaging Data Structure (BIDS) for motion data. Motion data is frequently recorded alongside human brain imaging and electrophysiological data. The goal of Motion-BIDS is to make motion data interoperable across different laboratories and with other data modalities...






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## One hundred years of EEG for brain and behaviour research

 Pedro Valdes-Sosa

 2024-08-22  1 min

 2 words


OOSTENVELD ROBERT



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## Freezing of gait in Parkinson's disease is related to imbalanced stopping-related cortical activity

 Richard J A van Wezel

 2024-09-04  1 min

 65 words

OOSTENVELD ROBERT

**Summary:** Freezing of gait, characterized by involuntary interruptions of walking, is a debilitating motor symptom of Parkinson's disease that restricts people's autonomy. Previous brain imaging studies investigating the mechanisms underlying freezing were restricted to scan people in supine positions and yie...


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## The past, present, and future of the brain imaging data structure (BIDS)

 Krzysztof J  
Gorgolewski

 2024-09-23

 1  
min

 82  
words

OOSTENVELD ROBERT


**Summary:** The Brain Imaging Data Structure (BIDS) is a community-driven standard for the organization of data and metadata from a growing range of neuroscience modalities. This paper is meant as a history of how the standard has developed and grown over time. We outline the principles behind the project, the ...


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## Human cortical high-gamma power scales with movement rate in healthy participants and stroke survivors

 Fanny  
Quandt

 2025-01-09

 1  
min

 65  
words

OOSTENVELD ROBERT

**Summary:** Motor cortical high-gamma oscillations (60-90 Hz) occur at movement onset and are spatially focused over the contralateral primary motor cortex. Although high-gamma oscillations are widely recognized for their significance in human motor control, their precise function on a cortical level remains el...


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## NIRS-BIDS: Brain Imaging Data Structure Extended to Near-Infrared Spectroscopy

 Luca  
Pollonini

 17 2025-01-27

 1  
min

 70  
words

OOSTENVELD ROBERT


**Summary:** Functional near-infrared spectroscopy (fNIRS) is an increasingly popular neuroimaging technique that measures cortical hemodynamic activity in a non-invasive and portable fashion. Although the fNIRS community has been successful in disseminating open-source processing tools and a standard file forma...


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## Pseudonymisation of neuroimages and data protection: Increasing access to data while retaining scientific utility

 Lyuba  
Zehl

 17 2025-06-26

 1  
min

 67  
words

OOSTENVELD ROBERT


**Summary:** For a number of years, facial features removal techniques such as 'defacing', 'skull stripping' and 'face masking/blurring', were considered adequate privacy preserving tools to openly share brain images. Scientifically, these measures were already a compromise between data protection requirements a...


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## Cycling on the Freeway: The perilous state of open-source neuroscience software

 Tim M  
Tierney

 17 2025-08-13

 1  
min

 74  
words

OOSTENVELD ROBERT


**Summary:** Most scientists need software to perform their research (Barker et al., 2020;Carver et al., 2022;Hettrick, 2014;Hettrick et al., 2014;Switters & Osimo, 2019), and neuroscientists are no exception. Whether we work with reaction times, electrophysiological signals, or magnetic resonance imaging data, ...


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## Optimal configuration of on-scalp OPMs with fixed channel counts

 Robert  
Oostenveld

 17 2025-08-13

 1  
min

 69  
words

OOSTENVELD ROBERT

**Summary:** Recent technological developments have brought optically pumped magnetometers (OPMs) within reach of the larger neuroscientific community. The current state-of-the-art consists of whole-head systems that measure the magnetic field at >100 locations. OPM sensors can be constructed to measure the fiel...

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## Swin-YOLO-SAM: a hybrid Transformer-based framework integrating Swin Transformer, YOLOv12, and SAM-2.1 for automated identification and segmentation of date palm leaf diseases



Ghassan  
Husnain



2025-10-01



1  
min



68  
words

LOW VISION

**Summary:** The cultivation of date palm (*Phoenix dactylifera* L.) is acutely impacted by numerous fungal, bacterial, and pest-related diseases that diminish yield, spoil fruit quality, and undermine long-term agricultural sustainability. The traditional methods of monitoring diseases, which rely heavily on expe...



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## Chronic endometritis diagnosis and fertility outcomes: an old unresolved question



Yohann  
Dabi



2025-10-01



1  
min



67  
words

LOW VISION

**Summary:** ABSTRACT: Chronic endometritis, defined by chronic inflammation of the endometrium, remains a clinical and biologic challenge even using hysteroscopy allowing a direct vision of the uterine cavity without anesthesia, and conventional histology using Hematoxylin and Eosin staining. Our primary object...



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## DTL: Parameter- and Memory-Efficient Disentangled Vision Learning



Jianxin  
Wu



2025-10-01



1  
min



77  
words

LOW VISION

**Summary:** The cost of finetuning a pretrained model on downstream tasks steadily increases as they grow larger. Parameter-efficient transfer learning (PETL) is proposed to reduce this cost by changing only a tiny subset of trainable parameters. But, the GPU memory footprint during training is not effectively ...



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## Exploring Vision-Based Active 3D Object Detection by Informativeness Characterization



Xi

Li



2025-10-01

1  
min76  
words

LOW VISION

**Summary:** Vision-based 3D object detection (3DOD) gains lots of attention due to its low cost for deployment compared to Lidar-based tasks, while it suffers from labor-expensive data annotations. At the same time, active learning (AL) has shown great potential in reducing annotation costs in related tasks, wh...



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## Age-specific associations between intrinsic capacity impairments and self-rated health in community-dwelling adults: Insights from Taiwan longitudinal study on aging

Fei-Yuan  
Hsiao

2025-10-01

1  
min32  
words

LOW VISION

**Summary:** CONCLUSIONS: Age-specific patterns suggest targeted interventions: mental health support for middle-aged adults, mobility preservation for young-old adults, and vitality enhancement for the oldest adults. These findings provide guidance for age-tailored ICOPE strategies.



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## Artificial intelligence defines spatial patterns of tumor-infiltrating lymphocytes highly associated with outcome - a pan-GI cancer study



A  
Madabhushi



2025-10-01



1  
min



22  
words

LOW VISION

**Summary:** CONCLUSIONS: Our findings suggest that the spatial relationships of TILs and cancer nuclei are prognostic of survival across multiple GI cancer types.



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## Eagle-eye-inspired neuromorphic synaptic transistor array with ultrabroad dynamic range for adaptive machine vision



Wenping  
Hu



2025-10-01



1  
min



2  
words

LOW VISION





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## Recent progress in the patterning of perovskite films for photodetector applications

 Huiming  
Cheng

 2025-10-01  1  
min

 65  
words

LOW VISION


**Summary:** Photodetectors, as the core devices for optical signal conversion, need to balance high efficiency, fast response, and low-cost fabrication. Perovskite, with its advantages of high carrier mobility and tunable band gaps, have become an ideal alternative to silicon-based materials. This paper systema...


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## Benchmarking foundation models as feature extractors for weakly supervised computational pathology

 Jakob Nikolas  
Kather

 2025-10-01  1  
min

 66  
words

LOW VISION


**Summary:** Numerous pathology foundation models have been developed to extract clinically relevant information. There is currently limited literature independently evaluating these foundation models on external cohorts and clinically relevant tasks to uncover adjustments for future improvements. Here we benchm...

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## Comparison of visual quality and optical zones after TransPRK, SMILE, and FS-LASIK myopia correction procedures

 Zhongyi  
Yang

 2025-10-01

 1  
min

 61  
words

LOW VISION

**Summary:** CONCLUSIONS: TransPRK has good postoperative visual quality, but its advantages may be mediated by its larger optical zone design. In terms of night vision performance, SMILE surgery can effectively preserve the biomechanical properties of the cornea, while FS-LASIK achieved comparable 6-month acuit...

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## The taste of trigeminal sensations: relation between taste, lingual tactile acuity, and spicy perception in patients with taste dysfunction

 Thomas Hummel

 2025-05-28  1 min  70 words


TACTILE ACUITY

**Summary:** In the oral cavity, oral stereognosis and chemesthesis refer to the abilities to recognize shapes and detect noxious substances, respectively, through various receptors distributed on the tongue. The absence of standardized methods to assess oral somatosensory perception has led to a lack of consens...

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## Measuring the Distribution of Tactile Acuity at the Index Finger and Thumb Fingertips

 Hiroyuki Kajimoto

 2025-06-17  1 min  75 words

TACTILE ACUITY


**Summary:** In our day-to-day activities, we utilize not only the pads of our fingers but also the sides and hemispherical tips when manipulating objects. For teleoperation systems to replicate these real-life interactions, tactile sensation must be presented and distributed across the entire fingertip. Thus, u...

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## Optimizing Vibrotactile Feedback for Sensory Substitution in the Thigh: Spatial Acuity and Frequency Characteristics

 Leah R  
Bent

 2025-06-27

 1  
min

 69  
words

TACTILE ACUITY

**Summary:** Amputation of a lower limb not only affects mobility but also interferes with sensory feedback, leading to an elevated risk of falls among individuals living with amputation. Sensory substitution, achieved through tactile displays embedded in transfemoral prosthetic sockets, presents a promising non...


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## Directional vibro-tactile hazard warnings for drivers with vision impairments

 Alex R  
Bowers

 2025-07-02

 1  
min

 80  
words

TACTILE ACUITY


**Summary:** Vision impairment may delay responses to hazards when driving. In a proof-of-concept driving simulator study, we evaluated a hazard warning device designed for vision impaired drivers. Three groups participated: 11 persons with central vision loss (CVL; median age 60 years), 12 with homonymous field...

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## Sensitivity and vagal reactivity to C-tactile-mediated affective touch in mild cognitive impairment due to Alzheimer's disease

 Cecilia  
Guariglia



2025-08-01



1  
min



64  
words

TACTILE ACUITY

**Summary:** BackgroundC-tactile (CT) afferents preferentially activate in response to slow caress-like touch, evoking a diffuse pleasant sensation and promoting autonomic regulation. According to Braak's classic model, the neurodegenerative process in Alzheimer's disease (AD) only affects somatosensory cortices...

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## Differences in tactile grid localization accuracy between people with back pain compared to individuals without pain

 Eric  
Fjeldheim



2025-08-24



1  
min



22  
words

TACTILE ACUITY

**Summary:** OBJECTIVES: The study aimed to investigate the grid localization test (GLT) between patients with lower back pain and those without back pain.

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## Eye Drop Instillation Success and Hand Function in Adults with Glaucoma: A Pilot Study



Paula Anne Newman-  
Casey



2025-09-09



1  
min



74  
words

TACTILE ACUITY

**Summary:** CONCLUSIONS: Despite hand function deficits, in this exploratory pilot study, adults with glaucoma demonstrated eye drop instillation success comparable to those without glaucoma, though with higher rates of bottle tip contact with the eye, skin, or eyelashes, suggesting an increased risk of potenti...



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## Functional evidence for early origin of tactile acuity in the vertebrate somatosensory system



Sviatoslav N  
Bagriantsev



2025-09-13



1  
min



58  
words

TACTILE ACUITY

**Summary:** Mammals and reptiles possess a sophisticated somatosensory system for precise tactile discrimination via mechanosensory end-organs, such as Meissner and Pacinian corpuscles and others. These structures detect sustained pressure, velocity, and vibrations, thereby facilitating nuanced environmental in...






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## The coarse mental map of the breast is anchored on the nipple

 Charles M  
Greenspon

 2025-09-18  1  
min

 86  
words

TACTILE ACUITY

**Summary:** Touch plays a key role in our perception of our body and shapes our interactions with the world, from the objects we manipulate to the people we touch. While the tactile sensibility of the hand has been extensively characterized, much less is known about touch on other parts of the body. Despite the...



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## Haptic Feedback Systems for Lower-Limb Prosthetic Applications: A Review of System Design, User Experience, and Clinical Insights

 Runar  
Unnthorsson

 2025-09-27  1  
min

 65  
words

TACTILE ACUITY


**Summary:** Systems presenting haptic information have emerged as an important technological advance in assisting individuals with sensory impairments or amputations, where the aim is to enhance sensory perception or provide sensory substitution through tactile feedback. These systems provide information on lim...

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## Exploring the use of smartphone applications during navigation-based tasks for individuals who are blind or who have low vision: future directions and priorities

 Joseph Paul  
Nemargut



2025-08-25



1  
min



62  
words

**BRaille**


**Summary:** CONCLUSION: These results provide vital insights for technology developers about the perceived utility of smartphone apps for people with low vision or blindness during navigation. Our results highlight the importance of built-in accessibility features for users with visual impairments. As additiona...

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## Gradient Porous Flexible Pressure Sensors with the Relay Effect for High-Accuracy Braille-to-Speech Recognition

 Jianming  
Xu



2025-08-25



1  
min



62  
words

**BRaille**

**Summary:** The development of highly sensitive, wide linear-range flexible pressure sensors is crucial for practical applications in human-computer interaction, physiological signal detection, and motion monitoring. However, traditional flexible pressure sensors often suffer from limited compressibility in the...



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## Individual and community level factors influencing modern contraceptive use among women of reproductive age in South Africa: a multilevel analysis


 Million  
Phiri

 2025-08-26  1  
min

 46  
words

**BRaille**


**Summary:** CONCLUSION: Sensory disability status influenced women's contraceptive behaviour in South Africa. Current family planning interventions should target women with sensory disabilities by prioritising accessible communication methods (e.g., braille, sign language), disability awareness training for hea...



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## Explosion-powered eversible tactile displays

 Robert F  
Shepherd

 2025-08-27  1  
min

 64  
words

**BRaille**


**Summary:** High-resolution electronic tactile displays stand to transform haptics for remote machine operation, virtual reality, and digital information access for people who are blind or visually impaired. Yet, increasing the resolution of these displays requires increasing the number of individually addressa...


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## A Biomimetic Fiber-Entangled Permeable Electronic Skin for Strain-Insensitive and High-Resolution Tactile Sensing

 Zhijun  
Ma

 2025-08-28

 1  
min

 57  
words

[BRAILLE](#)


**Summary:** Electronic skins (e-skins) incorporating island architectures represent a promising platform for strain-insensitive tactile sensing by mechanically decoupling sensing units from deformations. However, conventional island designs encounter stress concentration issues caused by inherent modulus mismat...


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## High-Density Tactile Sensor Array for Sub-Millimeter Texture Recognition

 Min  
Zhang

 2025-08-28

 1  
min

 64  
words

[BRAILLE](#)

**Summary:** High-density tactile sensor arrays that replicate human touch could restore texture perception in paralyzed individuals. However, conventional tactile sensor arrays face inherent trade-offs between spatial resolution, sensitivity, and crosstalk suppression due to microstructure size limitations and ...

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## A Diachronic Investigation of the Change in Form and Formational-Semantic Systematicity of the Chinese Sign Language Lexicon



Hao  
Lin



2025-09-01



1  
min



72  
words

BRAILLE

**Summary:** It has been argued in previous research that several competing pressures guide the directions of language evolution (economy vs. redundancy; arbitrariness vs. systematicity). For sign languages, however, the effects of competing pressures on their change of lexical systems remain largely unclear. In...



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## Wireless Electrotactile System with Hydrogel-Based Electrodes for Conformal Tactile Interaction



Ji  
Liu



2025-09-02



1  
min



56  
words

BRAILLE

**Summary:** A wireless epidermal electrotactile interface is demonstrated through integration of skin-conformal electrodes and flexible circuitry, addressing existing limitations in haptic technology caused by mechanical mismatch and system-level integration challenges. This electrotactile system achieves low s...



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## Beyond access: rethinking assistive technology for individuals with visual impairments in Türkiye

Önder  
İşlek

17

2025-09-12



1  
min



55  
words

BRILLE

**Summary:** CONCLUSION: Despite demonstrating adaptability, individuals with VI in Türkiye face significant structural barriers to equitable AT access. Informal learning limited public support, and a lack of locally adapted tools contribute to digital exclusion. A rights-based approach-emphasizing inclusive fun...

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## High prevalence of bacterial STI, anal HPV, cytological abnormalities and anal lesions among MSM in Togo, 2021: a baseline analysis of the ANRS I MIE 12,400/DepIST-H cohort

Didier K  
Ekouevi

17

2025-09-27



1  
min



42  
words

BRILLE

**Summary:** CONCLUSIONS: These findings emphasize the high prevalence of STIs among MSM and confirm the unusual distribution of HPV types in West Africa, with HPV35 being highly prevalent. A national strategy regarding STI screening and HPV vaccination in this key population is needed.

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## Preliminary evidence for high-definition transcranial direct current stimulation effects on white matter microstructure and executive function in mild cognitive impairment



Huan

Li



2025-09-30



1

min



62

words

TDCS TACS TRNS

**Summary:** CONCLUSION: The findings suggest that HD-tDCS targeting the L-DLPFC may promote microstructural remodeling in white matter tracts, evidenced by elevated fractional anisotropy within the corticospinal and anterior thalamic pathways. While global cognitive measures remained stable, a trend toward impr...



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## Stepwise interventional psychiatry approach for major depression: A case series



Jean-Philippe

Miron



2025-09-30



1

min



46

words

TDCS TACS TRNS

**Summary:** CONCLUSIONS: This case series suggests that a sequential neuromodulation strategy may increase overall response rates in TRD by capturing different responder profiles across modalities. These findings support the feasibility of a pragmatic stepwise approach and highlight the need for controlled stud...





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## On the mechanisms of epidermal stemness and differentiation

 Raghvendra  
Singh

 2025-10-01  1  
min

 70  
words

TDCS TACS TRNS


**Summary:** High Wnt and low Notch activities characterize epidermal stem cells (SCs), while low Wnt and high Notch activities characterize the terminally differentiated epidermal cells (TDCs). However, the mechanism by which transit amplifying cells (TACs) are induced to become terminally differentiated remain...

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## Effects of Transcranial Direct Current Stimulation on pain and pain-related outcomes: an umbrella review

 Dmitriy  
Viderman

 2025-10-01  1  
min

 64  
words

TDCS TACS TRNS


**Summary:** CONCLUSIONS: Our findings suggest that tDCS might be effective for fibromyalgia, migraine, and neuropathic pain associated with spinal cord injury and stroke. However, further evidence is needed for chronic orofacial pain, multiple sclerosis, knee osteoarthritis, central post-stroke pain, intra-abdo...


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## A novel machine learning-based method to quantify the effect of transcranial direct current stimulation on opioid users

 Davoud  
Ahmadi

 2025-10-01

 1  
min

 19  
words

TDCS TACS TRNS

**Summary:** CONCLUSION: These findings suggest that tDCS can be an effective intervention for reducing craving in patients with opioid addiction.


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## Quantitative analysis of [<sup>18</sup>F]CHL2310, a novel PET ligand for cholesterol 24-Hydroxylase, in nonhuman primate brain

 Lu  
Wang

 2025-10-01

 1  
min

 32  
words

TDCS TACS TRNS


**Summary:** CONCLUSION: [<sup>18</sup>F]CHL2310 shows high in vivo specificity, favorable pharmacokinetic properties, and robust quantitative performance in non-human primates. These characteristics support its potential as a PET radiotracer for imaging CYP46A1 in human studies.


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## Dissemination and Impact of a Multimodal Pain Regimen on Analgesia Prescribing at an Academic Hospital

 Avi  
Bhavaraju

 2025-10-01

 1  
min

 30  
words

TDCS TACS TRNS


**Summary:** CONCLUSIONS: Implementation of an MMP protocol by a single division can facilitate the spread of nonopioid adjunctive pain medication use and decrease opioid utilization throughout surgical specialties in a hospital.


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## Developing a Trainee Advisory Committee Within a Pediatric Hospital Medicine Research Network

 Karen L  
Forbes


 2025-10-01

 1  
min

 62  
words

TDCS TACS TRNS


**Summary:** Medical research networks are essential for advancing clinical care. Despite the recognized importance of building research capacity and training future pediatric researchers, trainee engagement within these research networks remains inconsistent. To address this, the Paediatric Inpatient Research N...

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
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## Personalised dual-site alpha transcranial alternating current stimulation (tACS) targeting right frontoparietal network reduces craving in heroin use disorder

 Kai  
Yuan

 2025-10-01  1  
min

 2  
words

TDCS TACS TRNS



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## Effects of transcranial alternating current stimulation on cognitive function in older adults: a systematic review and meta-analysis of randomized controlled trials

 Yuxia  
Ma

 2025-10-01  1  
min

 42  
words

TDCS TACS TRNS


**Summary:** CONCLUSION: tACS intervention significantly improves immediate memory and delayed memory in older adults with AD. Further large-scale RCTs are needed to clarify the specific effects of tACS on various cognitive domains, and optimal stimulation parameters should be investigated to guide clinical prac...


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## AI-Driven Multimodal Brain-State Decoding for Personalized Closed-Loop TENS: A Comprehensive Review

 Ping  
Shi

 2025-09-27

 1  
min

 64  
words

FNIRS


**Summary:** Chronic pain is a dynamic, brain-wide condition that eludes effective management by conventional, static treatment approaches. Transcutaneous Electrical Nerve Stimulation (TENS), traditionally perceived as a simple and generic modality, is on the verge of a significant transformation. Guided by adva...


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## Exploring Imagined Movement for Brain-Computer Interface Control: An fNIRS and EEG Review

 Jamshed  
Iqbal

 2025-09-27

 1  
min

 66  
words

FNIRS

**Summary:** Brain-Computer Interfaces (BCIs) offer a non-invasive pathway for restoring motor function, particularly for individuals with limb loss. This review explored the effectiveness of Electroencephalography (EEG) and function Near-Infrared Spectroscopy (fNIRS) in decoding Motor Imagery (MI) movements for...


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

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## Sex Differences in Cortical Hemodynamic Responses During Interactive and Passive Tasks: An fNIRS Study Using the Nefroball System

 Aleksandra  
Ryl

 2025-09-27  1  
min

 69  
words

**fNIRS**


**Summary:** The present study aimed to investigate sex differences in the hemodynamic response of the cerebral cortex during interactive and passive tasks using functional near-infrared spectroscopy fNIRS. Ninety-seven healthy adults (63 women, 34 men) participated in the study. Participants performed two tasks...



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## Editorial: Advanced fNIRS applications in neuroscience and neurological disorders

 Daifa  
Wang

 2025-09-29  1  
min

 2  
words

**fNIRS**

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## Brain network evolution in late preterm to term infants: a near-infrared spectroscopy imaging study



Yiwei

Li



2025-09-29



1

min



27

words

FNIRS

**Summary:** CONCLUSIONS: These results underscore the critical role of GA in shaping neonatal brain network functional organization and provide valuable insights for early intervention strategies in preterm infants.



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## Effectiveness and mechanism of moxibustion in treating chronic non-specific low back pain: study protocol for a multicenter randomized controlled trial



Han

Xiang



2025-09-29



1

min



67

words

FNIRS

**Summary:** INTRODUCTION: Chronic non-specific low back pain (CNLBP) represents the most commonly encountered subtype of low back pain (LBP) in clinical practice. It has no clearly identified etiological factors and is prone to recurrence, which severely compromises patients' quality of life. Moxibustion therap...




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## Effects of robot assisted mirror therapy on motor function and cortical activation in patients with right hemisphere damage

 Yifan Wang

 2025-09-29

 1 min

 75 words

FNIRS

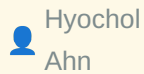
**Summary:** Robot-assisted mirror therapy (MRT) is a cutting-edge rehabilitative treatment that combines mirror therapy and rehabilitation robots and can improve stroke patient participation in rehabilitation training. The aim of this study was to investigate the effects of MRT training in patients with right-h...


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## Advancing pain assessment in Alzheimer's disease and related dementias: Functional near-infrared spectroscopy for investigating brain activity




 2025-09-30

 1 min

 58 words

**FNIRS**

**Summary:** CONCLUSION: fNIRS demonstrated feasibility as an objective pain assessment tool in ADRD. tDCS served only as a probe to induce cortical modulation for evaluating fNIRS performance. In this study, tDCS functioned as a probe to induce cortical modulation for evaluating fNIRS sensitivity, not as a ther...


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## MEFD dataset and GCSFormer model : Cross-subject emotion recognition based on multimodal physiological signals

 Wenbo Dong


 2025-10-01

 1 min

 62 words

**FNIRS**

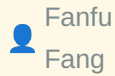
**Summary:** Cross-subject emotion recognition is an important research direction in the fields of affective computing and brain-computer interfaces, aiming to identify the emotional states of different individuals through physiological signals such as functional near-infrared spectroscopy (fNIRS) and electroenc...

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## Analysis of the analgesic mechanism of TENS-WAA in colonoscopy using the EEG-fNIRS system: a study protocol for a randomised controlled trial



Fanfu  
Fang



2025-10-01



1  
min



62  
words

**FNIRS**

**Summary:** INTRODUCTION: Colonoscopy is an essential procedure for the early diagnosis of colorectal conditions; however, over 60% of patients undergoing non-sedated colonoscopy report moderate to severe pain. This study aims to investigate the central analgesic mechanisms of transcutaneous electrical nerve st...



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[utm\\_source=BucketBot&utm\\_medium=rss&utm\\_campaign=None&utm\\_content=1JKSd2KF3MGnV7oFVD2g6PNu7rHRFDsLyCNjKkkf4KHBUA3c8P&fc=None&ff=20251002013941&v=2.18.0.post9+e462414](https://pubmed.ncbi.nlm.nih.gov/41033775/?utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1JKSd2KF3MGnV7oFVD2g6PNu7rHRFDsLyCNjKkkf4KHBUA3c8P&fc=None&ff=20251002013941&v=2.18.0.post9+e462414)

## Machine learning predictions from unpredictable chaos



Guo-Wei  
Wei



2025-09-30



1  
min



68  
words

**BRAIN COMPUTER INTERFACE**

**Summary:** Chaos is omnipresent in nature, and its understanding provides enormous social and economic benefits. However, the unpredictability of chaotic systems is a textbook concept due to their sensitivity to initial conditions, aperiodic behaviour, fractal dimensions, nonlinearity and strange attractors. I...




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[utm\\_source=BucketBot&utm\\_medium=rss&utm\\_campaign=None&utm\\_content=1rSUu--tbw4049Wgf\\_RdKXdtNCvGW0IVBZFpHe7zaN4k4DwoD5&fc=None&ff=20251002013938&v=2.18.0.post9+e462414](https://pubmed.ncbi.nlm.nih.gov/41027482/?utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1rSUu--tbw4049Wgf_RdKXdtNCvGW0IVBZFpHe7zaN4k4DwoD5&fc=None&ff=20251002013938&v=2.18.0.post9+e462414)

## EEG-based motor execution classification of upper and lower extremities using machine learning

 Cengiz  
Tepe

 2025-10-01

 1  
min

 61  
words

BRAIN COMPUTER INTERFACE

**Summary:** This study classifies upper- and lower-extremity motor execution from electroencephalography (EEG). We compared two feature extractors, statistical features and Common Spatial Patterns (CSP), and four classifiers: K-Nearest Neighbors, Linear Discriminant Analysis (LDA), Multilayer Perceptron, and Su...


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## The Contribution of Wearable Devices and Artificial Intelligence to Promoting Healthy Aging

 Chaiyavat  
Chaiysut

 2025-10-01

 1  
min

 51  
words

BRAIN COMPUTER INTERFACE

**Summary:** CONCLUSION: The evolving landscape of wearable technologies, exemplified by Fitbit®, Acti- Graph™, and other interventions, holds substantial promise for reshaping healthcare approaches for the aging population. Addressing the limitations will be crucial as research progresses to ensure the effectiv...


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## Revolutionizing brain-computer interfaces: Compact and high-speed wireless neural signal acquisition

 Gang  
Wang

 2025-10-01

 1  
min

 64  
words

BRAIN COMPUTER INTERFACE

**Summary:** A brain-computer interface (BCI) facilitates the connection between the human brain and external devices by decoding neurophysiological signals, thereby enabling seamless interaction between humans and machines. However, existing neural signal acquisition systems often suffer from limited channel co...


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## An EEG-EMG-based Hybrid Brain-Computer Interface for Decoding Tones in Silent and Audible Speech

 Chunzhi  
Yi

 2025-10-01

 1  
min

 72  
words

BRAIN COMPUTER INTERFACE

**Summary:** Speech recognition can be widely applied to support people with language disabilities by enabling them to communicate through brain-computer interfaces (BCIs), thus improving their quality of life. Despite the essential role of tonal variations in conveying semantic meaning, there have been limited ...

 Read full article:


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[utm\\_source=BucketBot&utm\\_medium=rss&utm\\_campaign=None&utm\\_content=1rSUu--tbw4049Wgf\\_RdKXdtNCvGW0IVBZFpHe7zaN4k4DwoD5&fc=None&ff=20251002013938&v=2.18.0.post9+e462414](https://pubmed.ncbi.nlm.nih.gov/41032544/?utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1rSUu--tbw4049Wgf_RdKXdtNCvGW0IVBZFpHe7zaN4k4DwoD5&fc=None&ff=20251002013938&v=2.18.0.post9+e462414)




## MEFD dataset and GCSFormer model : Cross-subject emotion recognition based on multimodal physiological signals

 Wenbo Dong

 2025-10-01

 1 min

 62 words

BRAIN COMPUTER INTERFACE

**Summary:** Cross-subject emotion recognition is an important research direction in the fields of affective computing and brain-computer interfaces, aiming to identify the emotional states of different individuals through physiological signals such as functional near-infrared spectroscopy (fNIRS) and electroenc...

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[tbw4049Wgf\\_RdKXdTNCvGW0lVBZFpHe7zaN4k4DwoD5&fc=None&ff=20251002013938&v=2.18.0.post9+e462414](https://pubmed.ncbi.nlm.nih.gov/41033328/?utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1rSUu--tbw4049Wgf_RdKXdTNCvGW0lVBZFpHe7zaN4k4DwoD5&fc=None&ff=20251002013938&v=2.18.0.post9+e462414)

## High - Quality Decoding of RGB Images from the Neuronal Signals of the Pigeon Optic Tectum



Songwei  
Wang



2025-10-01



1  
min



38  
words

BRAIN COMPUTER INTERFACE

**Summary:** CONCLUSIONS: This research provides a novel technical pathway for high-quality visual neural decoding, with robust experimental metrics validating its effectiveness. It also offers experimental evidence to support investigations into the information processing mechanisms of the avian visual pathway.



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[tbw4049Wgf\\_RdKXdtNCvGW0IVBZFpHe7zaN4k4DwoD5&fc=None&ff=20251002013938&v=2.18.0.post9+e462414](https://pubmed.ncbi.nlm.nih.gov/41033466/?utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1rSUu--tbw4049Wgf_RdKXdtNCvGW0IVBZFpHe7zaN4k4DwoD5&fc=None&ff=20251002013938&v=2.18.0.post9+e462414)

## Transfer learning via distributed brain recordings enables reliable speech decoding



Nitin  
Tandon



2025-10-01



1  
min



63  
words

BRAIN COMPUTER INTERFACE

**Summary:** Speech brain-computer interfaces (BCIs) combine neural recordings with large language models to achieve real-time intelligible speech. However, these decoders rely on dense, intact cortical coverage and are challenging to scale across individuals with heterogeneous brain organization. To derive scal...



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[tbw4049Wgf\\_RdKXdtNCvGW0IVBZFpHe7zaN4k4DwoD5&fc=None&ff=20251002013938&v=2.18.0.post9+e462414](https://pubmed.ncbi.nlm.nih.gov/41034198/?utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1rSUu--tbw4049Wgf_RdKXdtNCvGW0IVBZFpHe7zaN4k4DwoD5&fc=None&ff=20251002013938&v=2.18.0.post9+e462414)

## Peptide design through binding interface mimicry with PepMimic



Jianzhu  
Ma



2025-10-01



1  
min



71  
words

BRAIN COMPUTER INTERFACE

**Summary:** Peptides offer advantages for targeted therapy, including oral bioavailability, cellular permeability and high specificity, setting them apart from conventional small molecules and biologics. Here we develop an artificial intelligence algorithm, PepMimic, to transform a known receptor or an existing...



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## Physical Activity and Depressive Mood Share the Structural Connectivity Between Motor and Reward Networks



Tianzi  
Jiang



2025-10-01



1  
min



73  
words

BRAIN COMPUTER INTERFACE

**Summary:** In various studies, exercise has been revealed to have a positive effect on alleviating depressive symptoms. However, the neural basis behind this phenomenon remains unknown, as well as its underlying biological mechanism. In this study, we used a large neuroimaging cohort [n = 1,027, major depressi...



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## Field usability and validity of eye-tracking instrumentation with the Early Childhood Vigilance Test among children aged 2–4 years old in Northern Coastal Ecuador.

 2025-03-31  1 min  225 words

NEUROPSYCHOLOGY

**Summary:** Objective: There is a need for effective cognitive assessment tools to evaluate the development of very young children in resource-limited low- and middle-income country settings. Our objective was to evaluate the field usability of a computer-based attention test and its concurrent validity with a ...

 **Read full article:**  
<http://doi.org/10.1037/neu0001012>

## Elongated $\tau$ in an ex-Gaussian decomposition of vocal articulation speed in children with attention deficit hyperactivity disorder.




 2025-05-08  1 min  191 words

NEUROPSYCHOLOGY

**Summary:** Objective: Slower and more variable reaction time is one of the most prominent cognitive signatures in childhood attention-deficit/hyperactivity disorder (ADHD). However, standard use of tasks that involve motor responses to index “speed” potentially confounds fine-motor coordination with central co...

 **Read full article:**  
<http://doi.org/10.1037/neu0001015>

## Updating the self-appraisal of one's cognitive performance with 7 days of repeated exposure: From test-naïve to experienced.

 2025-05-26  1 min  285 words

NEUROPSYCHOLOGY





**Summary:** Objective: Self-appraisal of cognitive performance, a potentially useful marker of brain functioning, is typically assessed at a single time point where tests are naïve to what constitutes “good” or “bad” performance. Here, we determine whether familiarizing individuals with self-appraisal with dail...



Read full article:

<http://doi.org/10.1037/neu0001010>

## py-capnweb - A Python implementation of Cap'n Web's RPC protocol

 /u/  
sfermigier  2025-10-01  3 min  786 words

REDDIT PYTHON

**Summary:** <!-- SC\_OFF --><div class="md"><p>I've just released v0.3.0 of a project I've been working on called <strong>py-capnweb</strong>.</p> <p>It's a Python implementation of the <a href="https://github.com/cloudflare/capnweb">Cap'n Web protocol</a>, a fascinating new RPC protocol announced a couple of we...



Read full article:

[https://www.reddit.com/r/Python/comments/1nv5lcw/pycapnweb\\_a\\_python\\_implementation\\_of\\_capn\\_webs/](https://www.reddit.com/r/Python/comments/1nv5lcw/pycapnweb_a_python_implementation_of_capn_webs/)

## Just built a tool that turns any Python app into a native windows service

/u/  
AdUnhappy5308



2025-10-01

1  
min254  
words

REDDIT PYTHON

**Summary:** <!-- SC\_OFF --><div class="md"><p>What My Project Does</p> <p>I built a tool called Servy that lets you run any Python app (or other executables) as a native Windows service. You just set the Python executable path, add your script and arguments (for example -u for unbuffered mode if you want stdout...



Read full article:

[https://www.reddit.com/r/Python/comments/1nv696e/just\\_built\\_a\\_tool\\_that\\_turns\\_any\\_python\\_app\\_into/](https://www.reddit.com/r/Python/comments/1nv696e/just_built_a_tool_that_turns_any_python_app_into/)

## A 3K-year-old copper smelting site could be key to understanding origins of iron



2025-09-28

1  
min2  
words

HACKER NEWS

**Summary:** <a href="https://news.ycombinator.com/item?id=45406090">Comments</a>




Read full article:


<https://phys.org/news/2025-09-year-copper-smelting-site-key.html>

## Type S and M errors as a “rhetorical tool”

 noreply@blogger.com (Daniel Lakens)

 2025-09-28

 17 min

 3572 words

TWENTY PERCENT STATISTICIAN

**Summary:** *Update 30/09/2025: I have added a reply by Andrew Gelman below my original blog post.* We recently posted a preprint criticizing the idea of Type S and M errors ([https://osf.io/2phzb\\_v1](https://osf.io/2phzb_v1)). From our abstract: “While these concepts have been pr...

 **Read full article:**

<http://daniellakens.blogspot.com/2025/09/type-s-and-m-errors-as-rhetorical-tool.html>

## Neural mechanisms of emotion-focused interventions: A meta-analytic review of fMRI studies

 1 min

 18 words


NEUROIMAGE

**Summary:** Publication date: 15 October 2025  
**Source:** NeuroImage, Volume 320  
**Author(s):** Yanlin Li, Geng Li, Yang Liu, Chengzhen Liu, Antao Chen

 **Read full article:**

[https://www.sciencedirect.com/science/article/pii/S1053811925004720?dgcid=rss\\_sd\\_all](https://www.sciencedirect.com/science/article/pii/S1053811925004720?dgcid=rss_sd_all)

## GDF15 regulates development and growth of sympathetic neurons to enhance energy expenditure and thermogenesis





 2025-10-01  1 min  0 words

NATURE NEUROSCIENCE SUBJECTS

 Read full article:

<https://www.nature.com/articles/s12276-025-01543-9>


## A bottom-up septal inhibitory circuit mediates anticipatory control of drinking

 Zhong  
Chen  2025-09-22  1 min  43 words

NATURE NEUROSCIENCE





**Summary:**

Nature Neuroscience, Published online: 22 September 2025; [doi:10.1038/s41593-025-02056-4](https://www.nature.com/articles/s41593-025-02056-4) Xu et al. reveal that a bottom-up neural circuit from the medial septum to the subfornical organ prevents overhydration in mice by integrati...

 Read full article:

<https://www.nature.com/articles/s41593-025-02056-4>

## This Week in The Journal

 McKeon,  
P.  2025-09-17  1 min  0 words

JOURNAL NEUROSCIENCE THIS WEEK

 Read full article:

<http://www.jneurosci.org/cgi/content/short/45/38/etwij45382025?rss=1>



## This Week in The Journal



McKeon,  
P.



2025-09-24



1  
min



0  
words

JOURNAL NEUROSCIENCE THIS WEEK



Read full article:

<http://www.jneurosci.org/cgi/content/short/45/39/etwij45392025?rss=1>

## Novelty as a drive of human exploration in complex stochastic environments

Alireza ModirshanechiWei-Hsiang LinHe A. XuMichael H. HerzogWulfram GerstnerSchool of Life Sciences, Brain-Mind Institute, École Polytechnique Fédérale de Lausanne (EPFL), Lausanne 1015,



SwitzerlandbSchool of Computer and Communication Sciences, École Polytechnique Fédérale de Lausanne (EPFL), Lausanne 1015, SwitzerlandcHelmholtz Munich, Neuherberg 85764, GermanydMax Planck Institute for Biological Cybernetics, Tübingen 72012, Germany



2025-09-25



1  
min



56  
words

PNAS NEUROSCIENCE


**Summary:** Proceedings of the National Academy of Sciences, Volume 122, Issue 39, September 2025. <br />SignificanceWould you choose to complete a task in a few seconds for a guaranteed reward, or spend half an hour exploring unknown paths that may or may not lead to something better? Using a multistep decisio...




Read full article:


<https://www.pnas.org/doi/abs/10.1073/pnas.2502193122?af=R>

## Generation of synthetic TSPO PET maps from structural MRI images

 Marco L.  
Loggia

 2025-09-08

 1  
min

 250  
words


FRONTIERS NEUROINFORMATICS


**Summary:** IntroductionNeuroinflammation, a pathophysiological process involved in numerous disorders, is typically imaged using [11C]PBR28 (or TSPO) PET. However, this technique is limited by high costs and ionizing radiation, restricting its widespread clinical use. MRI, a more accessible alternative, is com...

 Read full article:


<https://www.frontiersin.org/articles/10.3389/fninf.2025.1633273>

## Individualized connectomic tACS immediately improves oscillatory network with language facilitation in post-stroke aphasia: a feasibility study of a dysfunctome-based targeting approach

 Mehdi  
Bakhtiar

 2025-09-04

 1  
min

 289  
words


FRONTIERS COMPUTATIONAL NEUROSCIENCE


**Summary:** IntroductionPeople with post-stroke aphasia (PSA) exhibit significant interindividual variability attributed to distinctive network disruption patterns across individuals. This complexity limits the effectiveness of conventional one-size-fits-all brain stimulation approaches, but to date no individu...

 Read full article:


<https://www.frontiersin.org/articles/10.3389/fncom.2025.1635497>

## Editorial: Advancements in smart diagnostics for understanding neurological behaviors and biosensing applications

 Zohaib  
Mushtaq

 17 2025-09-16

 1  
min


 0  
words


FRONTIERS COMPUTATIONAL NEUROSCIENCE

 Read full article:


<https://www.frontiersin.org/articles/10.3389/fncom.2025.1693327>

## Tri-manual interaction in hybrid BCI-VR systems: integrating gaze, EEG control for enhanced 3D object manipulation

 Shaw-mung  
Lee

 17 2025-08-14

 1  
min

 192  
words

FRONTIERS NEUROBOTICS

**Summary:** Brain-computer interface (BCI) integration with virtual reality (VR) has progressed from single-limb control to multi-limb coordination, yet achieving intuitive tri-manual operation remains challenging. This study presents a consumer-grade hybrid BCI-VR framework enabling simultaneous control of two...

 Read full article:

<https://www.frontiersin.org/articles/10.3389/fnbot.2025.1628968>

## 4D trajectory lightweight prediction algorithm based on knowledge distillation technique



Weizheng  
Xie



2025-08-22



1  
min



217  
words

FRONTIERS NEUROBOTICS

**Summary:** IntroductionTo address the challenges of current 4D trajectory prediction—specifically, limited multi-factor feature extraction and excessive computational cost—this study develops a lightweight prediction framework tailored for real-time air-traffic management.MethodsWe propose a hybrid RCBAM–TCN–L...



Read full article:

<https://www.frontiersin.org/articles/10.3389/fnbot.2025.1643919>

## Variable admittance control with sEMG-based support for wearable wrist exoskeleton



Nicole  
Wenderoth



2025-09-01



1  
min



262  
words

FRONTIERS NEUROBOTICS

**Summary:** IntroductionWrist function impairment is common after stroke and heavily impacts the execution of daily tasks. Robotic therapy, and more specifically wearable exoskeletons, have the potential to boost training dose in context-relevant scenarios, promote voluntary effort through motor intent detectio...



Read full article:

<https://www.frontiersin.org/articles/10.3389/fnbot.2025.1562675>

## Imitation-relaxation reinforcement learning for sparse badminton strikes via dynamic trajectory generation



Hongtao  
Wang



2025-09-02



1  
min



174  
words

FRONTIERS NEUROBOTICS

**Summary:** Robotic racket sports provide exceptional benchmarks for evaluating dynamic motion control capabilities in robots. Due to the highly non-linear dynamics of the shuttlecock, the stringent demands on robots' dynamic responses, and the convergence difficulties caused by sparse rewards in reinforcement ...



Read full article:

<https://www.frontiersin.org/articles/10.3389/fnbot.2025.1649870>

## RSA-TransUNet: a robust structure-adaptive TransUNet for enhanced road crack segmentation



Ruoli  
Yang



2025-09-16



1  
min



234  
words

FRONTIERS NEUROBOTICS

**Summary:** With the advancement of deep learning, road crack segmentation has become increasingly crucial for intelligent transportation safety. Despite notable progress, existing methods still face challenges in capturing fine-grained textures in small crack regions, handling blurred edges and significant wid...



Read full article:

<https://www.frontiersin.org/articles/10.3389/fnbot.2025.1633697>

## Behavioral benefits of GSK-3 $\beta$ inhibition and state-dependent microtubule signatures in the Fmr1-KO mouse



Massimiliano  
Bianchi



2025-10-02



1  
min



251  
words

FRONTIERS NEUROSCIENCE

**Summary:** Glycogen-synthase-kinase-3 $\beta$  (GSK-3 $\beta$ ) and microtubule dynamics are implicated in Fragile X syndrome (FXS). We examined behaviors and hippocampal  $\alpha$ -tubulin post-translational modifications (PTMs) in Fmr1-KO male mice without and with chronic administration of the GSK-3 $\beta$  inhibitors SB216763 (30 mg/kg, ...



Read full article:

<https://www.frontiersin.org/articles/10.3389/fnins.2025.1643439>

## Human in vivo assessment of ketamine binding of the serotonin transporter—follow up at a higher dose



M.  
Spies



2025-10-02



1  
min



235  
words

FRONTIERS NEUROSCIENCE

**Summary:** Ketamine is a rapid-acting antidepressant approved in the indication of treatment-resistant depression. As its clinical use expands, identifying underlying molecular mechanisms is essential. The serotonin transporter (SERT) is well known as a primary mechanism of several classes of monoaminergic ant...



Read full article:

<https://www.frontiersin.org/articles/10.3389/fnins.2025.1651016>

## A comparative review of deep and spiking neural networks for edge AI neuromorphic circuits



Aziz Benlarbi-  
Delai



2025-10-02



1  
min



78  
words

FRONTIERS NEUROSCIENCE

**Summary:** Edge AI implements neural networks directly in electronic circuits, using either deep neural networks (DNNs) or neuromorphic spiking neural networks (SNNs). DNNs offer high accuracy and easy-to-use tools but are computationally intensive and consume significant power. SNNs utilize bio-inspired, even...



Read full article:

<https://www.frontiersin.org/articles/10.3389/fnins.2025.1676570>

## Street dancing enhances cognitive reserve in young females: an fNIRS study



Hongli  
Wang



2025-10-02



1  
min



314  
words

FRONTIERS NEUROSCIENCE

**Summary:** IntroductionWith the accelerating aging population, cognitive decline and dementia pose major public health challenges. Early intervention is crucial for mitigating these risks. Dance, with its high cognitive demands and multitasking coordination, has shown benefits for cognitive function. However, ...



Read full article:

<https://www.frontiersin.org/articles/10.3389/fnins.2025.1640555>

## The impact of CSF-filled cavities on scalp EEG and its implications



Maria Carla  
Piastra



2024-06-14



1  
min



64  
words

OOSTENVELD ROBERT

**Summary:** Previous studies have found electroencephalogram (EEG) amplitude and scalp topography differences between neurotypical and neurological/neurosurgical groups, being interpreted at the cognitive level. However, these comparisons are invariably accompanied by anatomical changes. Critical to EEG are the...



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## Motion-BIDS: an extension to the brain imaging data structure to organize motion data for reproducible research



Julius  
Welzel



2024-07-02



1  
min



72  
words

OOSTENVELD ROBERT

**Summary:** We present an extension to the Brain Imaging Data Structure (BIDS) for motion data. Motion data is frequently recorded alongside human brain imaging and electrophysiological data. The goal of Motion-BIDS is to make motion data interoperable across different laboratories and with other data modalities...




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## One hundred years of EEG for brain and behaviour research

 Pedro Valdes-Sosa

 2024-08-22  1 min

 2 words

OOSTENVELD ROBERT



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## Freezing of gait in Parkinson's disease is related to imbalanced stopping-related cortical activity


 Richard J A van Wezel

 2024-09-04  1 min

 65 words

OOSTENVELD ROBERT

**Summary:** Freezing of gait, characterized by involuntary interruptions of walking, is a debilitating motor symptom of Parkinson's disease that restricts people's autonomy. Previous brain imaging studies investigating the mechanisms underlying freezing were restricted to scan people in supine positions and yie...


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## The past, present, and future of the brain imaging data structure (BIDS)

 Krzysztof J  
Gorgolewski

 2024-09-23

 1  
min

 82  
words

OOSTENVELD ROBERT


**Summary:** The Brain Imaging Data Structure (BIDS) is a community-driven standard for the organization of data and metadata from a growing range of neuroscience modalities. This paper is meant as a history of how the standard has developed and grown over time. We outline the principles behind the project, the ...


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## Human cortical high-gamma power scales with movement rate in healthy participants and stroke survivors

 Fanny  
Quandt

 2025-01-09

 1  
min

 65  
words

OOSTENVELD ROBERT


**Summary:** Motor cortical high-gamma oscillations (60-90 Hz) occur at movement onset and are spatially focused over the contralateral primary motor cortex. Although high-gamma oscillations are widely recognized for their significance in human motor control, their precise function on a cortical level remains el...


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## NIRS-BIDS: Brain Imaging Data Structure Extended to Near-Infrared Spectroscopy

 Luca  
Pollonini

 17 2025-01-27

 1  
min

 70  
words

OOSTENVELD ROBERT


**Summary:** Functional near-infrared spectroscopy (fNIRS) is an increasingly popular neuroimaging technique that measures cortical hemodynamic activity in a non-invasive and portable fashion. Although the fNIRS community has been successful in disseminating open-source processing tools and a standard file forma...


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## Pseudonymisation of neuroimages and data protection: Increasing access to data while retaining scientific utility

 Lyuba  
Zehl

 17 2025-06-26

 1  
min

 67  
words

OOSTENVELD ROBERT


**Summary:** For a number of years, facial features removal techniques such as 'defacing', 'skull stripping' and 'face masking/blurring', were considered adequate privacy preserving tools to openly share brain images. Scientifically, these measures were already a compromise between data protection requirements a...


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## Cycling on the Freeway: The perilous state of open-source neuroscience software

 Tim M  
Tierney

 2025-08-13

 1  
min

 74  
words

OOSTENVELD ROBERT


**Summary:** Most scientists need software to perform their research (Barker et al., 2020;Carver et al., 2022;Hettrick, 2014;Hettrick et al., 2014;Switters & Osimo, 2019), and neuroscientists are no exception. Whether we work with reaction times, electrophysiological signals, or magnetic resonance imaging data, ...


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## Optimal configuration of on-scalp OPMs with fixed channel counts

 Robert  
Oostenveld

 2025-08-13

 1  
min

 69  
words

OOSTENVELD ROBERT

**Summary:** Recent technological developments have brought optically pumped magnetometers (OPMs) within reach of the larger neuroscientific community. The current state-of-the-art consists of whole-head systems that measure the magnetic field at >100 locations. OPM sensors can be constructed to measure the fiel...

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## Swin-YOLO-SAM: a hybrid Transformer-based framework integrating Swin Transformer, YOLOv12, and SAM-2.1 for automated identification and segmentation of date palm leaf diseases



Ghassan  
Husnain



2025-10-01



1  
min



68  
words

LOW VISION

**Summary:** The cultivation of date palm (*Phoenix dactylifera* L.) is acutely impacted by numerous fungal, bacterial, and pest-related diseases that diminish yield, spoil fruit quality, and undermine long-term agricultural sustainability. The traditional methods of monitoring diseases, which rely heavily on expe...



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## Chronic endometritis diagnosis and fertility outcomes: an old unresolved question



Yohann  
Dabi



2025-10-01



1  
min



67  
words

LOW VISION

**Summary:** ABSTRACT: Chronic endometritis, defined by chronic inflammation of the endometrium, remains a clinical and biologic challenge even using hysteroscopy allowing a direct vision of the uterine cavity without anesthesia, and conventional histology using Hematoxylin and Eosin staining. Our primary object...



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## DTL: Parameter- and Memory-Efficient Disentangled Vision Learning



Jianxin  
Wu



2025-10-01



1  
min



77  
words

LOW VISION

**Summary:** The cost of finetuning a pretrained model on downstream tasks steadily increases as they grow larger. Parameter-efficient transfer learning (PETL) is proposed to reduce this cost by changing only a tiny subset of trainable parameters. But, the GPU memory footprint during training is not effectively ...



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## Exploring Vision-Based Active 3D Object Detection by Informativeness Characterization



Xi

Li



2025-10-01

1  
min76  
words

LOW VISION

**Summary:** Vision-based 3D object detection (3DOD) gains lots of attention due to its low cost for deployment compared to Lidar-based tasks, while it suffers from labor-expensive data annotations. At the same time, active learning (AL) has shown great potential in reducing annotation costs in related tasks, wh...



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## Age-specific associations between intrinsic capacity impairments and self-rated health in community-dwelling adults: Insights from Taiwan longitudinal study on aging

Fei-Yuan  
Hsiao

2025-10-01

1  
min32  
words

LOW VISION

**Summary:** CONCLUSIONS: Age-specific patterns suggest targeted interventions: mental health support for middle-aged adults, mobility preservation for young-old adults, and vitality enhancement for the oldest adults. These findings provide guidance for age-tailored ICOPE strategies.



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## Artificial intelligence defines spatial patterns of tumor-infiltrating lymphocytes highly associated with outcome - a pan-GI cancer study



A  
Madabhushi



2025-10-01



1  
min



22  
words

LOW VISION

**Summary:** CONCLUSIONS: Our findings suggest that the spatial relationships of TILs and cancer nuclei are prognostic of survival across multiple GI cancer types.



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## Eagle-eye-inspired neuromorphic synaptic transistor array with ultrabroad dynamic range for adaptive machine vision



Wenping  
Hu



2025-10-01



1  
min



2  
words

LOW VISION



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## Recent progress in the patterning of perovskite films for photodetector applications



Huiming  
Cheng



2025-10-01



1  
min



65  
words

LOW VISION

**Summary:** Photodetectors, as the core devices for optical signal conversion, need to balance high efficiency, fast response, and low-cost fabrication. Perovskite, with its advantages of high carrier mobility and tunable band gaps, have become an ideal alternative to silicon-based materials. This paper systema...



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## Benchmarking foundation models as feature extractors for weakly supervised computational pathology



Jakob Nikolas  
Kather



2025-10-01



1  
min



66  
words

LOW VISION

**Summary:** Numerous pathology foundation models have been developed to extract clinically relevant information. There is currently limited literature independently evaluating these foundation models on external cohorts and clinically relevant tasks to uncover adjustments for future improvements. Here we benchm...





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## Comparison of visual quality and optical zones after TransPRK, SMILE, and FS-LASIK myopia correction procedures

 Zhongyi  
Yang

 2025-10-01

 1  
min

 61  
words

LOW VISION


**Summary:** CONCLUSIONS: TransPRK has good postoperative visual quality, but its advantages may be mediated by its larger optical zone design. In terms of night vision performance, SMILE surgery can effectively preserve the biomechanical properties of the cornea, while FS-LASIK achieved comparable 6-month acuit...




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## The taste of trigeminal sensations: relation between taste, lingual tactile acuity, and spicy perception in patients with taste dysfunction

 Thomas Hummel

 2025-05-28  1 min  70 words


TACTILE ACUITY

**Summary:** In the oral cavity, oral stereognosis and chemesthesis refer to the abilities to recognize shapes and detect noxious substances, respectively, through various receptors distributed on the tongue. The absence of standardized methods to assess oral somatosensory perception has led to a lack of consens...

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## Measuring the Distribution of Tactile Acuity at the Index Finger and Thumb Fingertips

 Hiroyuki Kajimoto

 2025-06-17  1 min  75 words

TACTILE ACUITY


**Summary:** In our day-to-day activities, we utilize not only the pads of our fingers but also the sides and hemispherical tips when manipulating objects. For teleoperation systems to replicate these real-life interactions, tactile sensation must be presented and distributed across the entire fingertip. Thus, u...

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## Optimizing Vibrotactile Feedback for Sensory Substitution in the Thigh: Spatial Acuity and Frequency Characteristics

 Leah R  
Bent

 2025-06-27

 1  
min

 69  
words

TACTILE ACUITY


**Summary:** Amputation of a lower limb not only affects mobility but also interferes with sensory feedback, leading to an elevated risk of falls among individuals living with amputation. Sensory substitution, achieved through tactile displays embedded in transfemoral prosthetic sockets, presents a promising non...


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## Directional vibro-tactile hazard warnings for drivers with vision impairments

 Alex R  
Bowers

 2025-07-02

 1  
min

 80  
words

TACTILE ACUITY


**Summary:** Vision impairment may delay responses to hazards when driving. In a proof-of-concept driving simulator study, we evaluated a hazard warning device designed for vision impaired drivers. Three groups participated: 11 persons with central vision loss (CVL; median age 60 years), 12 with homonymous field...



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## Sensitivity and vagal reactivity to C-tactile-mediated affective touch in mild cognitive impairment due to Alzheimer's disease

 Cecilia  
Guariglia

 17 2025-08-01  1  
min

 64  
words

TACTILE ACUITY

**Summary:** BackgroundC-tactile (CT) afferents preferentially activate in response to slow caress-like touch, evoking a diffuse pleasant sensation and promoting autonomic regulation. According to Braak's classic model, the neurodegenerative process in Alzheimer's disease (AD) only affects somatosensory cortices...



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## Differences in tactile grid localization accuracy between people with back pain compared to individuals without pain

 Eric  
Fjeldheim

 17 2025-08-24  1  
min

 22  
words

TACTILE ACUITY

**Summary:** OBJECTIVES: The study aimed to investigate the grid localization test (GLT) between patients with lower back pain and those without back pain.

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## Eye Drop Instillation Success and Hand Function in Adults with Glaucoma: A Pilot Study



Paula Anne Newman-  
Casey



2025-09-09



1  
min



74  
words

TACTILE ACUITY

**Summary:** CONCLUSIONS: Despite hand function deficits, in this exploratory pilot study, adults with glaucoma demonstrated eye drop instillation success comparable to those without glaucoma, though with higher rates of bottle tip contact with the eye, skin, or eyelashes, suggesting an increased risk of potenti...



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## Functional evidence for early origin of tactile acuity in the vertebrate somatosensory system



Sviatoslav N  
Bagriantsev



2025-09-13



1  
min



58  
words

TACTILE ACUITY

**Summary:** Mammals and reptiles possess a sophisticated somatosensory system for precise tactile discrimination via mechanosensory end-organs, such as Meissner and Pacinian corpuscles and others. These structures detect sustained pressure, velocity, and vibrations, thereby facilitating nuanced environmental in...






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## The coarse mental map of the breast is anchored on the nipple

 Charles M  
Greenspon

 2025-09-18  1  
min

 86  
words

TACTILE ACUITY

**Summary:** Touch plays a key role in our perception of our body and shapes our interactions with the world, from the objects we manipulate to the people we touch. While the tactile sensibility of the hand has been extensively characterized, much less is known about touch on other parts of the body. Despite the...



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## Haptic Feedback Systems for Lower-Limb Prosthetic Applications: A Review of System Design, User Experience, and Clinical Insights

 Runar  
Unnthorsson

 2025-09-27  1  
min

 65  
words

TACTILE ACUITY


**Summary:** Systems presenting haptic information have emerged as an important technological advance in assisting individuals with sensory impairments or amputations, where the aim is to enhance sensory perception or provide sensory substitution through tactile feedback. These systems provide information on lim...

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## Exploring the use of smartphone applications during navigation-based tasks for individuals who are blind or who have low vision: future directions and priorities

 Joseph Paul  
Nemargut



2025-08-25



1  
min



62  
words

**BRaille**

**Summary:** CONCLUSION: These results provide vital insights for technology developers about the perceived utility of smartphone apps for people with low vision or blindness during navigation. Our results highlight the importance of built-in accessibility features for users with visual impairments. As additiona...




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## Gradient Porous Flexible Pressure Sensors with the Relay Effect for High-Accuracy Braille-to-Speech Recognition

 Jianming  
Xu



2025-08-25



1  
min



62  
words

**BRaille**

**Summary:** The development of highly sensitive, wide linear-range flexible pressure sensors is crucial for practical applications in human-computer interaction, physiological signal detection, and motion monitoring. However, traditional flexible pressure sensors often suffer from limited compressibility in the...



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## Individual and community level factors influencing modern contraceptive use among women of reproductive age in South Africa: a multilevel analysis

 Million  
Phiri

 17

2025-08-26

 1

min

 46

words

**BRAILLE**


**Summary:** CONCLUSION: Sensory disability status influenced women's contraceptive behaviour in South Africa. Current family planning interventions should target women with sensory disabilities by prioritising accessible communication methods (e.g., braille, sign language), disability awareness training for hea...

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## Explosion-powered eversible tactile displays

 Robert F  
Shepherd

 17

2025-08-27

 1

min

 64

words

**BRAILLE**


**Summary:** High-resolution electronic tactile displays stand to transform haptics for remote machine operation, virtual reality, and digital information access for people who are blind or visually impaired. Yet, increasing the resolution of these displays requires increasing the number of individually addressa...


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## A Biomimetic Fiber-Entangled Permeable Electronic Skin for Strain-Insensitive and High-Resolution Tactile Sensing

 Zhijun  
Ma

 2025-08-28

 1  
min

 57  
words

[BRAILLE](#)


**Summary:** Electronic skins (e-skins) incorporating island architectures represent a promising platform for strain-insensitive tactile sensing by mechanically decoupling sensing units from deformations. However, conventional island designs encounter stress concentration issues caused by inherent modulus mismat...


 **Read full article:**

<https://pubmed.ncbi.nlm.nih.gov/40874468/?>


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## High-Density Tactile Sensor Array for Sub-Millimeter Texture Recognition

 Min  
Zhang

 2025-08-28

 1  
min

 64  
words

[BRAILLE](#)

**Summary:** High-density tactile sensor arrays that replicate human touch could restore texture perception in paralyzed individuals. However, conventional tactile sensor arrays face inherent trade-offs between spatial resolution, sensitivity, and crosstalk suppression due to microstructure size limitations and ...

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## A Diachronic Investigation of the Change in Form and Formational-Semantic Systematicity of the Chinese Sign Language Lexicon



Hao  
Lin



2025-09-01



1  
min



72  
words

BRAILLE

**Summary:** It has been argued in previous research that several competing pressures guide the directions of language evolution (economy vs. redundancy; arbitrariness vs. systematicity). For sign languages, however, the effects of competing pressures on their change of lexical systems remain largely unclear. In...



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## Wireless Electrotactile System with Hydrogel-Based Electrodes for Conformal Tactile Interaction



Ji  
Liu



2025-09-02



1  
min



56  
words

BRAILLE

**Summary:** A wireless epidermal electrotactile interface is demonstrated through integration of skin-conformal electrodes and flexible circuitry, addressing existing limitations in haptic technology caused by mechanical mismatch and system-level integration challenges. This electrotactile system achieves low s...



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## Beyond access: rethinking assistive technology for individuals with visual impairments in Türkiye

Önder  
İşlek

17 2025-09-12

1  
min

55  
words

BRILLE

**Summary:** CONCLUSION: Despite demonstrating adaptability, individuals with VI in Türkiye face significant structural barriers to equitable AT access. Informal learning limited public support, and a lack of locally adapted tools contribute to digital exclusion. A rights-based approach-emphasizing inclusive fun...

 Read full article:

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## High prevalence of bacterial STI, anal HPV, cytological abnormalities and anal lesions among MSM in Togo, 2021: a baseline analysis of the ANRS I MIE 12,400/DepIST-H cohort

Didier K  
Ekouevi

17 2025-09-27

1  
min

42  
words

BRILLE

**Summary:** CONCLUSIONS: These findings emphasize the high prevalence of STIs among MSM and confirm the unusual distribution of HPV types in West Africa, with HPV35 being highly prevalent. A national strategy regarding STI screening and HPV vaccination in this key population is needed.



 Read full article:


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## Preliminary evidence for high-definition transcranial direct current stimulation effects on white matter microstructure and executive function in mild cognitive impairment


 Huan  
Li

 2025-09-30  1  
min

 62  
words

TDCS TACS TRNS


**Summary:** CONCLUSION: The findings suggest that HD-tDCS targeting the L-DLPFC may promote microstructural remodeling in white matter tracts, evidenced by elevated fractional anisotropy within the corticospinal and anterior thalamic pathways. While global cognitive measures remained stable, a trend toward impr...



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[utm\\_source=BucketBot&utm\\_medium=rss&utm\\_campaign=None&utm\\_content=143rKCPgMwbasrj66gQ1r1ebioUg42SIGRyVKSoW4m6X-ecQ00&fc=None&ff=20251002011816&v=2.18.0.post9+e462414](https://pubmed.ncbi.nlm.nih.gov/41025579/?utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=143rKCPgMwbasrj66gQ1r1ebioUg42SIGRyVKSoW4m6X-ecQ00&fc=None&ff=20251002011816&v=2.18.0.post9+e462414)

## Stepwise interventional psychiatry approach for major depression: A case series

 Jean-Philippe  
Miron

 2025-09-30  1  
min

 46  
words

TDCS TACS TRNS

**Summary:** CONCLUSIONS: This case series suggests that a sequential neuromodulation strategy may increase overall response rates in TRD by capturing different responder profiles across modalities. These findings support the feasibility of a pragmatic stepwise approach and highlight the need for controlled stud...


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## On the mechanisms of epidermal stemness and differentiation

 Raghvendra  
Singh

 2025-10-01

 1  
min

 70  
words

TDCS TACS TRNS


**Summary:** High Wnt and low Notch activities characterize epidermal stem cells (SCs), while low Wnt and high Notch activities characterize the terminally differentiated epidermal cells (TDCs). However, the mechanism by which transit amplifying cells (TACs) are induced to become terminally differentiated remain...


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## Effects of Transcranial Direct Current Stimulation on pain and pain-related outcomes: an umbrella review

 Dmitriy  
Viderman

 2025-10-01

 1  
min

 64  
words

TDCS TACS TRNS


**Summary:** CONCLUSIONS: Our findings suggest that tDCS might be effective for fibromyalgia, migraine, and neuropathic pain associated with spinal cord injury and stroke. However, further evidence is needed for chronic orofacial pain, multiple sclerosis, knee osteoarthritis, central post-stroke pain, intra-abdo...


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## A novel machine learning-based method to quantify the effect of transcranial direct current stimulation on opioid users

 Davoud  
Ahmadi

 2025-10-01

 1  
min

 19  
words

TDCS TACS TRNS

**Summary:** CONCLUSION: These findings suggest that tDCS can be an effective intervention for reducing craving in patients with opioid addiction.


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## Quantitative analysis of [<sup>18</sup>F]CHL2310, a novel PET ligand for cholesterol 24-Hydroxylase, in nonhuman primate brain

 Lu  
Wang

 2025-10-01

 1  
min

 32  
words

TDCS TACS TRNS


**Summary:** CONCLUSION: [<sup>18</sup>F]CHL2310 shows high in vivo specificity, favorable pharmacokinetic properties, and robust quantitative performance in non-human primates. These characteristics support its potential as a PET radiotracer for imaging CYP46A1 in human studies.


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## Dissemination and Impact of a Multimodal Pain Regimen on Analgesia Prescribing at an Academic Hospital

 Avi  
Bhavaraju


 2025-10-01

 1  
min

 30  
words

TDCS TACS TRNS


**Summary:** CONCLUSIONS: Implementation of an MMP protocol by a single division can facilitate the spread of nonopioid adjunctive pain medication use and decrease opioid utilization throughout surgical specialties in a hospital.


 Read full article:

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## Developing a Trainee Advisory Committee Within a Pediatric Hospital Medicine Research Network

 Karen L  
Forbes

 2025-10-01

 1  
min

 62  
words

TDCS TACS TRNS

**Summary:** Medical research networks are essential for advancing clinical care. Despite the recognized importance of building research capacity and training future pediatric researchers, trainee engagement within these research networks remains inconsistent. To address this, the Paediatric Inpatient Research N...

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
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## Personalised dual-site alpha transcranial alternating current stimulation (tACS) targeting right frontoparietal network reduces craving in heroin use disorder

 Kai  
Yuan

 2025-10-01  1  
min

 2  
words

TDCS TACS TRNS



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## Effects of transcranial alternating current stimulation on cognitive function in older adults: a systematic review and meta-analysis of randomized controlled trials


 Yuxia  
Ma

 2025-10-01  1  
min

 42  
words

TDCS TACS TRNS


**Summary:** CONCLUSION: tACS intervention significantly improves immediate memory and delayed memory in older adults with AD. Further large-scale RCTs are needed to clarify the specific effects of tACS on various cognitive domains, and optimal stimulation parameters should be investigated to guide clinical prac...


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## AI-Driven Multimodal Brain-State Decoding for Personalized Closed-Loop TENS: A Comprehensive Review

 Ping  
Shi

 2025-09-27

 1  
min

 64  
words

FNIRS


**Summary:** Chronic pain is a dynamic, brain-wide condition that eludes effective management by conventional, static treatment approaches. Transcutaneous Electrical Nerve Stimulation (TENS), traditionally perceived as a simple and generic modality, is on the verge of a significant transformation. Guided by adva...


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## Exploring Imagined Movement for Brain-Computer Interface Control: An fNIRS and EEG Review

 Jamshed  
Iqbal

 2025-09-27

 1  
min

 66  
words

FNIRS

**Summary:** Brain-Computer Interfaces (BCIs) offer a non-invasive pathway for restoring motor function, particularly for individuals with limb loss. This review explored the effectiveness of Electroencephalography (EEG) and function Near-Infrared Spectroscopy (fNIRS) in decoding Motor Imagery (MI) movements for...

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## Sex Differences in Cortical Hemodynamic Responses During Interactive and Passive Tasks: An fNIRS Study Using the Nefroball System



Aleksandra  
Ryl



2025-09-27



1  
min



69  
words

**fNIRS**

**Summary:** The present study aimed to investigate sex differences in the hemodynamic response of the cerebral cortex during interactive and passive tasks using functional near-infrared spectroscopy fNIRS. Ninety-seven healthy adults (63 women, 34 men) participated in the study. Participants performed two tasks...



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## Editorial: Advanced fNIRS applications in neuroscience and neurological disorders



Daifa  
Wang



2025-09-29



1  
min



2  
words

**fNIRS**



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## Brain network evolution in late preterm to term infants: a near-infrared spectroscopy imaging study



Yiwei

Li



2025-09-29

1  
min27  
words

FNIRS

**Summary:** CONCLUSIONS: These results underscore the critical role of GA in shaping neonatal brain network functional organization and provide valuable insights for early intervention strategies in preterm infants.



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[utm\\_source=BucketBot&utm\\_medium=rss&utm\\_campaign=None&utm\\_content=1JKSd2KF3MGnV7oFVD2g6PNu7rHRFDsLyCNjKkkf4KHBUA3c8P&fc=None&ff=20251002011814&v=2.18.0.post9+e462414](https://pubmed.ncbi.nlm.nih.gov/41019610/?utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1JKSd2KF3MGnV7oFVD2g6PNu7rHRFDsLyCNjKkkf4KHBUA3c8P&fc=None&ff=20251002011814&v=2.18.0.post9+e462414)

## Effectiveness and mechanism of moxibustion in treating chronic non-specific low back pain: study protocol for a multicenter randomized controlled trial



Han

Xiang



2025-09-29

1  
min67  
words

FNIRS

**Summary:** INTRODUCTION: Chronic non-specific low back pain (CNLBP) represents the most commonly encountered subtype of low back pain (LBP) in clinical practice. It has no clearly identified etiological factors and is prone to recurrence, which severely compromises patients' quality of life. Moxibustion therap...




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## Effects of robot assisted mirror therapy on motor function and cortical activation in patients with right hemisphere damage

 Yifan Wang

 2025-09-29

 1 min

 75 words

FNIRS


**Summary:** Robot-assisted mirror therapy (MRT) is a cutting-edge rehabilitative treatment that combines mirror therapy and rehabilitation robots and can improve stroke patient participation in rehabilitation training. The aim of this study was to investigate the effects of MRT training in patients with right-h...


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## Advancing pain assessment in Alzheimer's disease and related dementias: Functional near-infrared spectroscopy for investigating brain activity

 Hyochol  
Ahn

 17 2025-09-30

 1  
min

 58  
words

**FNIRS**

**Summary:** CONCLUSION: fNIRS demonstrated feasibility as an objective pain assessment tool in ADRD. tDCS served only as a probe to induce cortical modulation for evaluating fNIRS performance. In this study, tDCS functioned as a probe to induce cortical modulation for evaluating fNIRS sensitivity, not as a ther...


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## MEFD dataset and GCSFormer model : Cross-subject emotion recognition based on multimodal physiological signals

 Wenbo Dong


 2025-10-01

 1 min

 62 words

**FNIRS**


**Summary:** Cross-subject emotion recognition is an important research direction in the fields of affective computing and brain-computer interfaces, aiming to identify the emotional states of different individuals through physiological signals such as functional near-infrared spectroscopy (fNIRS) and electroenc...


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## Analysis of the analgesic mechanism of TENS-WAA in colonoscopy using the EEG-fNIRS system: a study protocol for a randomised controlled trial

 Fanfu  
Fang

 2025-10-01  1  
min

 62  
words

**FNIRS**


**Summary:** INTRODUCTION: Colonoscopy is an essential procedure for the early diagnosis of colorectal conditions; however, over 60% of patients undergoing non-sedated colonoscopy report moderate to severe pain. This study aims to investigate the central analgesic mechanisms of transcutaneous electrical nerve st...



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## Machine learning predictions from unpredictable chaos

 Guo-Wei  
Wei

 2025-09-30  1  
min

 68  
words

**BRAIN COMPUTER INTERFACE**

**Summary:** Chaos is omnipresent in nature, and its understanding provides enormous social and economic benefits. However, the unpredictability of chaotic systems is a textbook concept due to their sensitivity to initial conditions, aperiodic behaviour, fractal dimensions, nonlinearity and strange attractors. I...


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## EEG-based motor execution classification of upper and lower extremities using machine learning

 Cengiz  
Tepe

 2025-10-01

 1  
min

 61  
words

BRAIN COMPUTER INTERFACE

**Summary:** This study classifies upper- and lower-extremity motor execution from electroencephalography (EEG). We compared two feature extractors, statistical features and Common Spatial Patterns (CSP), and four classifiers: K-Nearest Neighbors, Linear Discriminant Analysis (LDA), Multilayer Perceptron, and Su...


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## The Contribution of Wearable Devices and Artificial Intelligence to Promoting Healthy Aging

 Chaiyavat  
Chaiysut

 2025-10-01

 1  
min

 51  
words

BRAIN COMPUTER INTERFACE

**Summary:** CONCLUSION: The evolving landscape of wearable technologies, exemplified by Fitbit®, Acti- Graph™, and other interventions, holds substantial promise for reshaping healthcare approaches for the aging population. Addressing the limitations will be crucial as research progresses to ensure the effectiv...


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## Revolutionizing brain-computer interfaces: Compact and high-speed wireless neural signal acquisition

 Gang  
Wang

 2025-10-01

 1  
min

 64  
words

BRAIN COMPUTER INTERFACE

**Summary:** A brain-computer interface (BCI) facilitates the connection between the human brain and external devices by decoding neurophysiological signals, thereby enabling seamless interaction between humans and machines. However, existing neural signal acquisition systems often suffer from limited channel co...

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## An EEG-EMG-based Hybrid Brain-Computer Interface for Decoding Tones in Silent and Audible Speech

 Chunzhi  
Yi

 2025-10-01

 1  
min

 72  
words

BRAIN COMPUTER INTERFACE


**Summary:** Speech recognition can be widely applied to support people with language disabilities by enabling them to communicate through brain-computer interfaces (BCIs), thus improving their quality of life. Despite the essential role of tonal variations in conveying semantic meaning, there have been limited ...


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## MEFD dataset and GCSFormer model : Cross-subject emotion recognition based on multimodal physiological signals

 Wenbo Dong

 2025-10-01

 1 min

 62 words

BRAIN COMPUTER INTERFACE

**Summary:** Cross-subject emotion recognition is an important research direction in the fields of affective computing and brain-computer interfaces, aiming to identify the emotional states of different individuals through physiological signals such as functional near-infrared spectroscopy (fNIRS) and electroenc...

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## High - Quality Decoding of RGB Images from the Neuronal Signals of the Pigeon Optic Tectum



Songwei  
Wang



2025-10-01



1  
min



38  
words

BRAIN COMPUTER INTERFACE

**Summary:** CONCLUSIONS: This research provides a novel technical pathway for high-quality visual neural decoding, with robust experimental metrics validating its effectiveness. It also offers experimental evidence to support investigations into the information processing mechanisms of the avian visual pathway.



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## Transfer learning via distributed brain recordings enables reliable speech decoding



Nitin  
Tandon



2025-10-01



1  
min



63  
words

BRAIN COMPUTER INTERFACE

**Summary:** Speech brain-computer interfaces (BCIs) combine neural recordings with large language models to achieve real-time intelligible speech. However, these decoders rely on dense, intact cortical coverage and are challenging to scale across individuals with heterogeneous brain organization. To derive scal...



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## Peptide design through binding interface mimicry with PepMimic



Jianzhu  
Ma



2025-10-01



1  
min



71  
words

BRAIN COMPUTER INTERFACE

**Summary:** Peptides offer advantages for targeted therapy, including oral bioavailability, cellular permeability and high specificity, setting them apart from conventional small molecules and biologics. Here we develop an artificial intelligence algorithm, PepMimic, to transform a known receptor or an existing...



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## Physical Activity and Depressive Mood Share the Structural Connectivity Between Motor and Reward Networks



Tianzi  
Jiang



2025-10-01



1  
min



73  
words

BRAIN COMPUTER INTERFACE

**Summary:** In various studies, exercise has been revealed to have a positive effect on alleviating depressive symptoms. However, the neural basis behind this phenomenon remains unknown, as well as its underlying biological mechanism. In this study, we used a large neuroimaging cohort [n = 1,027, major depressi...




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## Robust longitudinal neuropsychological norms in Spanish individuals with nonpathological Alzheimer's disease biomarkers.

 2025-05-22  1 min  256 words

NEUROPSYCHOLOGY

**Summary:** Objective: Neuropsychological norms serve to identify cognitive impairment and monitor neurodegenerative disease progression. However, longitudinal data are limited, and conventional approaches do not account for biomarkers to exclude underlying Alzheimer's disease (AD) pathology, reducing sensitivity...

 **Read full article:**  
<http://doi.org/10.1037/neu0001013>

## Posttraumatic stress symptomatology rather than mild traumatic brain injury is related to atypical early neural processing during cognitive control.




 2025-04-07  1 min  253 words

NEUROPSYCHOLOGY

**Summary:** Objective: Many veterans with posttraumatic stress disorder (PTSD) or a history of mild traumatic brain injury (mTBI) report disruptions in cognition; however, the neurophysiological underpinnings of these cognitive difficulties are not well understood. It is also unknown whether PTSD symptomatology...

 **Read full article:**  
<http://doi.org/10.1037/neu0001008>

## Acquired crowding dyslexia: A peripheral reading deficit other than neglect dyslexia.



 2025-06-02  1 min  259 words

NEUROPSYCHOLOGY

**Summary:** Objectives: Crowding refers to the phenomenon whereby small visual objects above the acuity threshold are detected but unrecognizable when surrounded by nearby stimuli. It affects reading in healthy individuals and can be enhanced in reading impairments. By increasing the interletter space, crowding...

 **Read full article:**  
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## Joint effects of human immunodeficiency virus (HIV) and cannabis on neurocognition.



 2025-07-21  1 min  270 words

NEUROPSYCHOLOGY

**Summary:** Objective: Cannabis has become increasingly accessible to populations living with chronic health conditions such as HIV. Many people living with HIV are turning to cannabis for symptom relief despite the unclear risks to neurocognitive health. Our study sought to replicate and extend prior research ...

 **Read full article:**  
<http://doi.org/10.1037/neu0001003>

## Elder relatives in waking life correlated with both elder relatives in dreams and animals in dreams.

 2024-10-10  1 min  196 words

DREAMING

**Summary:** There are dream metaphors that express waking-life experiences indirectly. Animals in dreams have been speculated to be related to dream metaphors. Here, we explored if there was any relationship between waking-life experiences related to elder relatives with both dreaming about elder relatives and ...

 **Read full article:**  
<http://doi.org/10.1037/drm0000292>

## Whose sexual dream experiences are more intense? An exploratory study on the relationship between personality traits and sexual dreams.

 2024-09-23  1 min  178 words




DREAMING

**Summary:** Sexual dreams reflect individuals' attitudes toward sex, the personal significance of sex, and/or sexual issues in their waking life. Gaining insight into the factors associated with the perceived intensity of sexual dream experiences is beneficial for achieving a comprehensive assessment of sexual ...

 **Read full article:**  
<http://doi.org/10.1037/drm0000289>



## The bereavement experience: Dreams and waking experiences of the deceased.



 2024-10-10  1 min  227 words

DREAMING

**Summary:** In separate literature—end-of-life experiences, dreams in bereavement, and continuing bonds in bereavement—there are preliminary findings that both dreaming of the deceased and having an experiential encounter while awake are common experiences. The present, brief report is a post hoc analysis of pr...

 Read full article:  
<http://doi.org/10.1037/drm0000291>

## Gmail will no longer support checking emails from third-party accounts via POP


 2025-10-01  1 min  2 words

HACKER NEWS

**Summary:** [Comments](https://news.ycombinator.com/item?id=45439670)

 Read full article:  
<https://support.google.com/mail/answer/16604719?hl=en>

## Typepad Is Closed for Business





 2025-10-02  1 min  2 words

HACKER NEWS

**Summary:** [Comments](https://news.ycombinator.com/item?id=45446263)

 **Read full article:**  
<https://www.typepad.com>

## Microsoft allows use of personal Microsoft 365 subscriptions at work

 rntn  2025-10-01  1 min  13 words

HACKER NEWS

**Summary:**

Article URL: [https://www.theregister.com/2025/10/01/microsoft\\_consumer\\_copilot\\_corporate/](https://www.theregister.com/2025/10/01/microsoft_consumer_copilot_corporate/)

Comments URL: [https://news.ycombinator.com/item?id=45...](https://news.ycombinator.com/item?id=45443304)

 **Read full article:**  
[https://www.theregister.com/2025/10/01/microsoft\\_consumer\\_copilot\\_corporate/](https://www.theregister.com/2025/10/01/microsoft_consumer_copilot_corporate/)

## Egg-Shaped Curves (2007)

 runxel  17 2025-10-01  1 min  13 words

HACKER NEWS

**Summary:**

Article URL: [https://nyjp07.com/index\\_egg\\_E.html](https://nyjp07.com/index_egg_E.html)





Comments URL: <https://news.ycombinator.com/item?id=45444004>

Points: 39

# Comments: 4

 Read full article:  
[https://nyjp07.com/index\\_egg\\_E.html](https://nyjp07.com/index_egg_E.html)

## Typepad Is Closed for Business

 saaspirant  17 2025-10-02  1 min  13 words

HACKER NEWS

**Summary:**

Article URL: <https://www.typepad.com>

Comments URL: <https://news.ycombinator.com/item?id=45446263>

Points: 7

# Comments: 0

 Read full article:  
<https://www.typepad.com>

## Retrieving Planned Sample Sizes from AsPredicted Preregistrations

 noreply@blogger.com (Daniel  
Lakens)

2025-06-23

22 min

4417 words

## TWENTY PERCENT STATISTICIAN

### Summary:

&&&&&&&&&&&&&&&&  
&&&&&&&&&&&&&&&&

 **Read full article:**

<http://daniellakens.blogspot.com/2025/06/retrieving-planned-sample-sizes-from.html>

## Are meta-scientists ignoring philosophy of science?

 noreply@blogger.com (Daniel Lakens)

July 17 2025-07-04

8 min

1681 words

## TWENTY PERCENT STATISTICIAN

**Summary:** <p>Are meta-scientists ignoring philosophy of science (PoS)? Are they re-inventing the wheel? <a href="https://nomadit.co.uk/conference/metascience2025/p/17038">A recent panel at the Metascience conference</a> engaged with this question, and the first sentence of the abstract states “Critics argue t...

 [Read full article:](#)

<http://daniellakens.blogspot.com/2025/07/are-meta-scientists-ignoring-philosophy.html>

## Easily download files from the Open Science Framework with Papercheck



noreply@blogger.com (Daniel  
Lakens)



2025-07-22



3  
min



765  
words

TWENTY PERCENT STATISTICIAN

**Summary:** Researchers increasingly use the [Open Science Framework](https://osf.io/) (OSF) to share files, such as data and code underlying scientific publications, or presentations and materials for scientific workshops. The OSF is an amazing service that has contributed immensely to a changed ...



Read full article:

<http://daniellakens.blogspot.com/2025/07/easily-download-files-from-open-science.html>

## Applications now being accepted for UC-Davis/SDSU ERP Boot Camp, July 31 – August 9, 2023



Steve  
Luck



2023-01-16



1  
min



108  
words

ERP BOOT CAMP


**Summary:** The next 10-day ERP Boot Camp will be held July 31 – August 9, 2023 in San Diego, California. We are now taking applications, which will be due by April 1, 2023. [Click here](https://erpinfo.org/summer-boot-camp) for more information. We are currently planning t...




Read full article:


<https://erpinfo.org/blog/2021/12/22/applications-2023>

# ERP Decoding for Everyone: Software and Webinar

 Steve  
Luck

 17 2023-06-23

 2  
min


 420  
words


ERP BOOT CAMP

**Summary:** **You can access the recording** [https://video.ucdavis.edu/media/Virtual+ERP+Boot+CampA+Decoding+for+Everyone%2C+July+25+2023/1\\_lmwj6bu0](https://video.ucdavis.edu/media/Virtual+ERP+Boot+CampA+Decoding+for+Everyone%2C+July+25+2023/1_lmwj6bu0) **You can access the final PDF of the slides** <https://ucdavis.box.com/s/f...>


 **Read full article:**  
<https://erpinfo.org/blog/2023/6/23/decoding-webinar>

# New Papers: Optimal Filter Settings for ERP Research

 Steve  
Luck

 17 2024-02-04

 2  
min


 568  
words

ERP BOOT CAMP

**Summary:** Zhang, G., Garrett, D. R., & Luck, S. J. (in press). Optimal filters for ERP research I: A general approach for selecting filter settings. *Psychophysiology*. <https://doi.org/10.1111/psyp.14531> <https://doi.org/10.1111/psyp.14531> [<https://www...>]

 **Read full article:**  
<https://erpinfo.org/blog/2024/2/4/optimal-filters>

## Important Changes to the 2024 ERP Boot Camp

 Steve  
Luck



2024-03-05



2  
min



444  
words

ERP BOOT CAMP

**Summary:**

We are disappointed to announce that we will not be holding a regular 10-day ERP Boot Camp this summer.


We have held Boot Camps nearly every summer since 2007, supported by a series of generous grants from NIMH that allowed us to provide scholarships for all attendees. Unf...



Read full article:

<https://erpinfo.org/blog/2024/3/5/changes-to-the-2024-erp-boot-camp>

## Registration is now full for the 2024 ERP Boot Camp

 Steve  
Luck



2024-03-16



1  
min



106  
words

ERP BOOT CAMP

**Summary:**

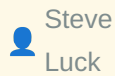
The demand for the 2024 ERP Boot Camp was far beyond our expectations, and we reached our maximum registration of 30 people within one day. We already have a waiting list of over 30 people, so we have closed the registration site.



Read full article:

<https://erpinfo.org/blog/2024/3/15/registration-full>

## New Paper: Using Multivariate Pattern Analysis to Increase Effect Sizes for ERP Amplitude Comparisons



Steve

Luck



2024-06-10



2

min



525

words

ERP BOOT CAMP

**Summary:** Carrasco, C. D., Bahle, B., Simmons, A. M., & Luck, S. J. (2024). Using multivariate pattern analysis to increase effect sizes for event-related potential analyses. *Psychophysiology*, 61, e14570. <https://doi.org/10.1111/psyp.14570>



Read full article:

<https://erpinf.org/blog/2024/6/10/erp-core-decoding-paper>

## New software package: ERPLAB Studio



Steve

Luck



2024-06-12



2

min



444

words

ERP BOOT CAMP

**Summary:** We are excited to announce the release of a new EEG/ERP analysis package, [ERPLAB Studio](https://github.com/ucdavis/erplab/releases). We think it's a huge improvement over the classic EEGLAB user interface. See our cheesy [video](https://www.youtube.com/watch?v=llaKVQ9DD6E)...

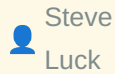


Read full article:

<https://erpinf.org/blog/2024/6/11/erplab-studio>



## Recording and slides now available for ERPLAB Studio webinar



Steve  
Luck



2024-06-28



1  
min



30  
words

ERP BOOT CAMP

**Summary:** We held a webinar to demonstration ERPLAB Studio on 28 June 2024. [Click here](https://youtu.be/k-nGv00rTP8) to access a recording. [Click here](https://ucdavis.box.com/s/4fseqz6327dtuouauj12rgvivvy1d1nmo) to access a PDF of the slides. <...



Read full article:

<https://erpinfo.org/blog/2024/6/28/recording-and-slides-now-available-for-erplab-studio-webinar>

## New Paper: Does the P3b component reflect working memory updating?



Steve  
Luck



2025-03-21



7  
min



1547  
words

ERP BOOT CAMP


**Summary:** Carrasco, C. D., Simmons, A. M., Kiat, J. E., & Luck, S. J. (in press). Enhanced working memory representations for rare events. *Psychophysiology*. <https://doi.org/10.1111/psyp.70038> [<https://doi.org/10.1101/2024.03.20...>]




Read full article:

<https://erpinfo.org/blog/2025/3/20/new-paper-oddball>

## 10-Day ERP Boot Camp to be held in Davis in Summer 2026

 Steve  
Luck

 2025-08-20

 1  
min

 138  
words


ERP BOOT CAMP


**Summary:** We have received another 5 years of funding from the National Institute of Mental Health, so we plan to hold ERP Boot Camps in each of the next 5 summers. The next one will be in Davis, California in the Summer of 2026. The specific dates will be announced around January 1, 2026, and the...

 Read full article:


<https://erpinfo.org/blog/2025/8/20/boot-camp-summer-2026>

## Education: Legal Issues

 Adriel  
Carridice


 2025-02-05

 1  
min

 61  
words

BRAIN

**Summary:** The safety concerns and standards shared in other sections provide an initial foundation for legal protections. However, calls for stricter consumer protection laws must accompany the proliferation of neurotech devices. Special privacy laws must be promulgated to ensure “cognitive privacy” (Nita Far...

 Read full article:

<https://brain.ieee.org/publications/neuroethics-framework/education/education-legal-issues/education-legal-issues/>

## Education: Social and Cultural Issues



Adriel  
Carridice



2025-02-05



1  
min



61  
words

BRAIN

**Summary:** Devices that therapeutically aid users with cognitive and learning disabilities/ differences should not be equally applied to a general population seeking learning advantages. It must not be assumed that therapies able to improve cognition for mental and cognitive disorders (such as executive control...



Read full article:

<https://brain.ieee.org/publications/neuroethics-framework/education/education-social-and-cultural-issues/education-social-and-cultural-issues/>

## Education: Standards



Adriel  
Carridice



2025-02-13



1  
min



0  
words

BRAIN



Read full article:

<https://brain.ieee.org/publications/neuroethics-framework/education/standards-education/education-standards/>

## Education: Additional Resources



Adriel  
Carridice



2025-02-13



1  
min



61  
words

BRAIN

**Summary:** Buckingham Shum, S. (2022). The UTS “EdTech Ethics” Deliberative Democracy Consultation: Rationale, Process and Outcomes. Connected Intelligence Centre, University of Technology Sydney, AUS. <https://cic.uts.edu.au/projects/edtech-ethics>  
León Declaration on European neurotechnology (2023): a human-fo...



Read full article:

<https://brain.ieee.org/publications/neuroethics-framework/education/educational-and-training-resources-education/education-additional-resources/>

## Call for 2025 Society Awards Nominations



Deidre  
Artis



2025-02-03



1  
min



15  
words

EMBS



**Summary:** <p>The post <a href="https://www.embs.org/awards/society-awards/#new\_tab">Call for 2025 Society Awards Nominations</a> appeared first on <a href="https://www.embs.org">IEEE EMBS</a>.</p>



Read full article:

[https://www.embs.org/awards/society-awards/#new\\_tab](https://www.embs.org/awards/society-awards/#new_tab)

## Author Correction: Senescent-like border-associated macrophages regulate cognitive aging via migrasome-mediated induction of paracrine senescence in microglia


 2025-09-30  1 min  0 words

NATURE NEUROSCIENCE SUBJECTS

 Read full article:

<https://www.nature.com/articles/s43587-025-00994-z>

## Interleaving asynchronous and synchronous activity in balanced cortical networks with short term synaptic depression

 2025-09-30  1 min  0 words

NATURE NEUROSCIENCE SUBJECTS


 Read full article:

<https://www.nature.com/articles/s41467-025-63818-z>

## FatigueNet: A hybrid graph neural network and transformer framework for real-time multimodal fatigue detection




 2025-09-30  1 min  0 words

NATURE NEUROSCIENCE SUBJECTS

 Read full article:

<https://www.nature.com/articles/s41598-025-00640-z>




## A doubly stochastic renewal framework for partitioning spiking variability

 2025-09-30  1 min  0 words

NATURE NEUROSCIENCE SUBJECTS

 Read full article:  
<https://www.nature.com/articles/s41467-025-63821-4>

## Temporal single spike coding for effective transfer learning in spiking neural networks

 2025-09-30  1 min  0 words

NATURE NEUROSCIENCE SUBJECTS

 Read full article:  
<https://www.nature.com/articles/s41598-025-14619-3>



## Atypical cortical feedback underlies failure to process contextual information in the superior colliculus of Scn2a+/- autism model mice

 2025-09-30  1 min  0 words


NATURE NEUROSCIENCE SUBJECTS

 Read full article:  
<https://www.nature.com/articles/s41467-025-63788-2>

## Flexible value coding in the mesolimbic dopamine system depending on internal water and sodium balance




 2025-09-30  1 min  0 words

NATURE NEUROSCIENCE SUBJECTS


 Read full article:

<https://www.nature.com/articles/s41538-025-00558-w>

## Cellular responses to repetitive head trauma

 2025-09-30  1 min  0 words

NATURE NEUROSCIENCE SUBJECTS

 Read full article:

<https://www.nature.com/articles/s41583-025-00977-4>

## Biliverdin reductase A is a major determinant of protective NRF2 signaling

Chirag Vasavda Ruchita Kothari Navneet Ammal Kaidery Suvarna Chakraborty Sunil Jamuna Tripathi Ryan S. Dhindsa Cristina Ricco Shruthi Shanmukha Samaneh Saberi Julia E. Lefler Priyanka Kothari Kalyani Chaubey Adele M. Snowman Michael C. Ostrowski Eugenio Barone Lakshminarayan M. Iyer L. Aravind Sudarshana M. Sharma Andrew A. Pieper Bobby Thomas Solomon H. Snyder Bindu D. Paula The Solomon H. Snyder Department of Neuroscience, Johns Hopkins University School of Medicine, Baltimore 21205, MD b Darby Children's Research Institute, Medical University of South Carolina, Charleston, SC 29425 c Department of Pediatrics, Medical University of South Carolina, Charleston, SC 29425 d Department of Physiology, Pharmacology and Therapeutics, Johns Hopkins University School of Medicine, Baltimore, MD 21205 e Department of Pathology and Immunology, Baylor College of Medicine, Houston, TX 77030 f Department of Pediatrics, Jan and Dan Duncan Neurological Research Institute, Texas Children's Hospital, Houston, TX 77030 g Department of Molecular and Human Genetics, Baylor College of Medicine, Houston, TX 77030 h Department of Biochemistry and Molecular Biology and Hollings Cancer Center, Medical University of South Carolina, Charleston, SC 29425 i Department of Cell Biology, Johns Hopkins University School of Medicine, Baltimore, MD 21205 j Department of Psychiatry, Case Western Reserve University School of Medicine, Cleveland, OH 44106 k Brain Health Medicines Center, Harrington Discovery Institute, University Hospitals Cleveland Medical Center, Cleveland, OH 44106 l Department of Biochemical Sciences "A. Rossi-Fanelli", Sapienza University of Rome, Rome 00185, Italy m Computational Biology Branch, Division of Intramural Research, National Library of Medicine, NIH, Bethesda, MD 20894 n Geriatric Psychiatry, Geriatric Research, Education, and Clinical Center, Louis Stokes Cleveland VA Medical Center, Cleveland, OH 44106 o Institute for Transformative Molecular Medicine, Case Western Reserve University School of Medicine, Cleveland, OH 44106 p Department of Pathology, Case Western Reserve University School of Medicine, Cleveland, OH 44106 q Department of Neurosciences, Case Western Reserve University School of Medicine, Cleveland, OH 44106 r Department of Neuroscience, Medical University of South Carolina, Charleston, SC 29425 s Department of Drug Discovery, Medical University of South Carolina, Charleston, SC 29425 t Department of Psychiatry and Behavioral Sciences, Johns Hopkins University School of Medicine, Baltimore, MD 21205 u Lieber Institute for Brain Development, Baltimore, MD 21205

 2025-09-30  1 min  49 words

PNAS NEUROSCIENCE

**Summary:** Proceedings of the National Academy of Sciences, Volume 122, Issue 40, October 2025.   
Significance While biliverdin reductase A (BVRA) is classically known as the biosynthetic enzyme for the metabolite and antioxidant bilirubin, we report here that it also exerts nonenzymatic antioxidant activit...



 **Read full article:**

<https://www.pnas.org/doi/abs/10.1073/pnas.2513120122?af=R>

## Mapping macaque to human cortex with natural scene responses



Kasper VinkenSaloni SharmaMargaret S. LivingstoneaDepartment of Neurobiology, Harvard Medical School, Boston, MA 02115



2025-09-30



1

min



48

words

PNAS NEUROSCIENCE

**Summary:** Proceedings of the National Academy of Sciences, Volume 122, Issue 40, October 2025.   
SignificanceUnderstanding how human and nonhuman primate brains are related is central to neuroscience, but matching brain areas across species remains challenging. Traditional methods rely on simplified inter...

 **Read full article:**

<https://www.pnas.org/doi/abs/10.1073/pnas.2512619122?af=R>

## Hippocampal CA2 to CA1: A metaplastic switch for memory encoding

Mohammad Zaki Bin Ibrahim Louise Zi Ning Goh Nicholas Wee Kiat Koh Jai S. Polepalli Thomas Behnisch Sreedharan Sajikumara Department of Physiology, Yong Loo Lin School of Medicine, National University of Singapore, Singapore 117593, Singapore bNeurobiology Programme, Life Sciences Institute, National University of Singapore, Singapore 117456, Singapore cDepartment of Anatomy, Yong Loo Lin School of Medicine, National University of Singapore, Singapore 117594, Singapore dHealthy Longevity Translational Research Programme, Yong Loo Lin School of Medicine, National University of Singapore, Singapore 117456, Singapore eInstitutes of Brain Science, State Key Laboratory of Medical Neurobiology, Ministry of Education Frontiers Center for Brain Science, Fudan University, Shanghai 200032, China

 2025-09-30  1 min  48 words

PNAS NEUROSCIENCE




**Summary:** Proceedings of the National Academy of Sciences, Volume 122, Issue 40, October 2025. <br />Significance We experience space and events alongside social interactions, enriching our memories. Hippocampal circuitry mainly encodes space and events. Meanwhile, area CA2, an often-overlooked hippocampal sub...

 **Read full article:**

<https://www.pnas.org/doi/abs/10.1073/pnas.2505936122?af=R>


## Higher-order interactions in neuronal function: From genes to ionic currents in biophysical models

Maria RevaAlexis ArnaudonMickael ZbiliAbdullah MakkehHenry MarkramJean-Marc GoaillardWerner Van GeitaBlue Brain Project, École polytechnique fédérale de Lausanne (EPFL), Geneva 1202, SwitzerlandbDepartment of Data-driven Analysis of Biological Networks, Göttingen Campus Institute for Dynamics of Biological Networks, University of Göttingen, Göttingen 37077, GermanycComplex Systems Theory, Max Planck Institute for Dynamics and Self-Organization, Göttingen 37018, GermanydLaboratory of Neural Microcircuitry, Brain Mind Institute, Ecole Polytechnique Fédérale de Lausanne (EPFL), Lausanne 1015, SwitzerlandeSystems Approaches to Neuronal Excitability, Inst. de Neurosciences de la Timone, UMR7289 CNRS & Aix Marseille Université, Marsellie 13385, France

 2025-09-29  1 min  49 words

PNAS NEUROSCIENCE


**Summary:** Proceedings of the National Academy of Sciences, Volume 122, Issue 40, October 2025.   
SignificanceHow neurons acquire their electrical identities is a central question in neuroscience. This study shows that combinations of ion channels interact in complex, high-dimensional ways to shape neuronal...

 **Read full article:**


<https://www.pnas.org/doi/abs/10.1073/pnas.2500048122?af=R>

## Super-resolution microscopy and deep learning methods: what can they bring to neuroscience: from neuron to 3D spine segmentation

 Lydia  
Danglot

 2025-09-29

 1  
min

 130  
words


FRONTIERS NEUROINFORMATICS


**Summary:** In recent years, advances in microscopy and the development of novel fluorescent probes have significantly improved neuronal imaging. Many neuropsychiatric disorders are characterized by alterations in neuronal arborization, neuronal loss—as seen in Parkinson’s disease—or synaptic loss, as in Alzhei...

 Read full article:


<https://www.frontiersin.org/articles/10.3389/fninf.2025.1630133>

## Early heart disease prediction using LV-PSO and Fuzzy Inference Xception Convolution Neural Network on phonocardiogram signals

 C.  
Palanisamy

 2025-10-01

 1  
min

 254  
words

FRONTIERS NEUROINFORMATICS


**Summary:** IntroductionHeart disease is one of the leading causes of mortality worldwide, and early detection is crucial for effective treatment. Phonocardiogram (PCG) signals have shown potential in diagnosing cardiovascular conditions. However, accurate classification of PCG signals remains challenging due t...

 Read full article:

<https://www.frontiersin.org/articles/10.3389/fninf.2025.1655003>

## Circuit-level modeling of prediction error computation of multi-dimensional features in voluntary actions

 Yiling  
Li

 2025-09-29

 1  
min

 207  
words


FRONTIERS COMPUTATIONAL NEUROSCIENCE


**Summary:** Introduction Predictive processing posits that the brain minimizes discrepancies between internal predictions and sensory inputs, offering a unifying account of perception, cognition, and action. In voluntary actions, it is thought to suppress self-generated sensory outcomes. Although sensory mismatch...

 Read full article:

<https://www.frontiersin.org/articles/10.3389/fncom.2025.1551555>

## When embodiment matters most: a confirmatory study on VR priming in motor imagery brain-computer interfaces training

 Athanasios  
Vourvopoulos


 2025-09-25

 1  
min

 216  
words


FRONTIERS HUMAN NEUROSCIENCE

**Summary:** Background Virtual Reality (VR) feedback is increasingly integrated into Brain-Computer Interface (BCI) applications, enhancing the Sense of Embodiment (SoE) toward virtual avatars and fostering more vivid motor imagery (MI). VR-based MI-BCIs hold promise for motor rehabilitation, but their effective...

 Read full article:

<https://www.frontiersin.org/articles/10.3389/fnhum.2025.1681538>

## Precision TMS through the integration of neuroimaging and machine learning: optimizing stimulation targets for personalized treatment

 Panxiao  
Bao

 17

2025-09-29



1  
min



207  
words

FRONTIERS HUMAN NEUROSCIENCE

**Summary:** Transcranial Magnetic Stimulation (TMS), a non-invasive neuromodulation technique based on electromagnetic induction, modulates cortical excitability by inducing currents with a magnetic field. TMS has demonstrated significant clinical potential in the treatment of various neuropsychiatric disorders...



Read full article:

<https://www.frontiersin.org/articles/10.3389/fnhum.2025.1682852>

## A time-frequency feature fusion-based deep learning network for SSVEP frequency recognition

 Jijun  
Tong

 17

2025-09-29



1  
min



246  
words

FRONTIERS NEUROSCIENCE

**Summary:** IntroductionSteady-state visual evoked potential (SSVEP) has emerged as a pivotal branch in brain-computer interfaces (BCIs) due to its high signal-to-noise ratio (SNR) and elevated information transfer rate (ITR). However, substantial inter-subject variability in electroencephalographic (EEG) signa...



Read full article:

<https://www.frontiersin.org/articles/10.3389/fnins.2025.1679451>

## Systematic review of experimental studies in humans on transcranial temporal interference stimulation



Paria Mansourinezhad, Rob M C Mestrom, Debby C W Klooster, Mathieu Sprengers, Paul A J M Boon and Margarethus M Paulides



2025-09-21



1  
min



303  
words

JOURNAL NEURAL ENGINEERING

**Summary:** Transcranial temporal interference stimulation (tTIS) has recently emerged as a non-invasive neuromodulation method aimed at reaching deeper brain regions than conventional techniques. However, many questions about its effects remain, requiring further experimental studies. This review consolidates ...



Read full article:

<http://iopscience.iop.org/article/10.1088/1741-2552/ae0524>

## Motor unit number estimation based on convolutional neural network



Junjun Chen, ZeZhou Li, Linyan Wu, Zhiyuan Lu, Maoqi Chen and Ping Zhou



2025-09-21



1  
min



232  
words

JOURNAL NEURAL ENGINEERING

**Summary:** Objective. The compound muscle action potential (CMAP) scan contains a muscle's detailed stimulus-activation information and thereby can be used for motor unit number estimation (MUNE). Due to the challenges in accurately obtaining the motor unit numbers from experimental CMAP scans, most existing M...



Read full article:

<http://iopscience.iop.org/article/10.1088/1741-2552/ae01da>

## Feature fusion based on global-local weighted attention model for automatic epileptic seizure detection



Xiang Li, Ke Zhang, Xin Wang, Zhiheng Zhang, Pengsheng Zhu, Mingxing Zhu, Xianhai Zeng and Shixiong Chen



2025-09-21



1  
min



190  
words

JOURNAL NEURAL ENGINEERING

**Summary:** Objective. Epilepsy is a neurological disorder characterized by recurrent seizures, which present significant challenges in both diagnosis and treatment. Despite advances in seizure detection, existing methods often struggle with accurately capturing the complex and dynamic interactions between temp...



Read full article:

<http://iopscience.iop.org/article/10.1088/1741-2552/ae00f4>

## From zero- to few-shot: deep temporal learning of wrist EMG enables scalable cross-user gesture recognition



Fady S Botros, Heather E Williams, Angkoon Phinyomark and Erik J Scheme



2025-09-25



1  
min



277  
words

JOURNAL NEURAL ENGINEERING

**Summary:** Objective. Wrist electromyography (EMG) is emerging as an enticing wearable input modality for human-machine interaction. Traditionally recorded from the forearm for use in transradial prostheses, wrist-based EMG sensors are now being integrated into devices such as watches and wristbands for hand g...



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<http://iopscience.iop.org/article/10.1088/1741-2552/ae08eb>



## The impact of CSF-filled cavities on scalp EEG and its implications



Maria Carla  
Piastra



2024-06-14



1  
min



64  
words

OOSTENVELD ROBERT

**Summary:** Previous studies have found electroencephalogram (EEG) amplitude and scalp topography differences between neurotypical and neurological/neurosurgical groups, being interpreted at the cognitive level. However, these comparisons are invariably accompanied by anatomical changes. Critical to EEG are the...



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## Motion-BIDS: an extension to the brain imaging data structure to organize motion data for reproducible research



Julius  
Welzel



2024-07-02



1  
min



72  
words

OOSTENVELD ROBERT

**Summary:** We present an extension to the Brain Imaging Data Structure (BIDS) for motion data. Motion data is frequently recorded alongside human brain imaging and electrophysiological data. The goal of Motion-BIDS is to make motion data interoperable across different laboratories and with other data modalities...






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## One hundred years of EEG for brain and behaviour research

 Pedro Valdes-Sosa

 2024-08-22  1 min

 2 words

OOSTENVELD ROBERT



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## Freezing of gait in Parkinson's disease is related to imbalanced stopping-related cortical activity


 Richard J A van Wezel

 2024-09-04  1 min

 65 words

OOSTENVELD ROBERT

**Summary:** Freezing of gait, characterized by involuntary interruptions of walking, is a debilitating motor symptom of Parkinson's disease that restricts people's autonomy. Previous brain imaging studies investigating the mechanisms underlying freezing were restricted to scan people in supine positions and yie...


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## The past, present, and future of the brain imaging data structure (BIDS)

 Krzysztof J  
Gorgolewski

 2024-09-23

 1  
min

 82  
words

OOSTENVELD ROBERT


**Summary:** The Brain Imaging Data Structure (BIDS) is a community-driven standard for the organization of data and metadata from a growing range of neuroscience modalities. This paper is meant as a history of how the standard has developed and grown over time. We outline the principles behind the project, the ...


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## Human cortical high-gamma power scales with movement rate in healthy participants and stroke survivors

 Fanny  
Quandt

 2025-01-09

 1  
min

 65  
words

OOSTENVELD ROBERT


**Summary:** Motor cortical high-gamma oscillations (60-90 Hz) occur at movement onset and are spatially focused over the contralateral primary motor cortex. Although high-gamma oscillations are widely recognized for their significance in human motor control, their precise function on a cortical level remains el...


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## NIRS-BIDS: Brain Imaging Data Structure Extended to Near-Infrared Spectroscopy

 Luca  
Pollonini

 17 2025-01-27

 1  
min

 70  
words

OOSTENVELD ROBERT


**Summary:** Functional near-infrared spectroscopy (fNIRS) is an increasingly popular neuroimaging technique that measures cortical hemodynamic activity in a non-invasive and portable fashion. Although the fNIRS community has been successful in disseminating open-source processing tools and a standard file forma...


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## Pseudonymisation of neuroimages and data protection: Increasing access to data while retaining scientific utility

 Lyuba  
Zehl

 17 2025-06-26

 1  
min

 67  
words

OOSTENVELD ROBERT


**Summary:** For a number of years, facial features removal techniques such as 'defacing', 'skull stripping' and 'face masking/blurring', were considered adequate privacy preserving tools to openly share brain images. Scientifically, these measures were already a compromise between data protection requirements a...


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## Cycling on the Freeway: The perilous state of open-source neuroscience software

 Tim M  
Tierney

 2025-08-13

 1  
min

 74  
words

OOSTENVELD ROBERT


**Summary:** Most scientists need software to perform their research (Barker et al., 2020;Carver et al., 2022;Hettrick, 2014;Hettrick et al., 2014;Switters & Osimo, 2019), and neuroscientists are no exception. Whether we work with reaction times, electrophysiological signals, or magnetic resonance imaging data, ...


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## Optimal configuration of on-scalp OPMs with fixed channel counts

 Robert  
Oostenveld

 2025-08-13

 1  
min

 69  
words

OOSTENVELD ROBERT

**Summary:** Recent technological developments have brought optically pumped magnetometers (OPMs) within reach of the larger neuroscientific community. The current state-of-the-art consists of whole-head systems that measure the magnetic field at >100 locations. OPM sensors can be constructed to measure the fiel...

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## Swin-YOLO-SAM: a hybrid Transformer-based framework integrating Swin Transformer, YOLOv12, and SAM-2.1 for automated identification and segmentation of date palm leaf diseases



Ghassan  
Husnain



2025-10-01



1  
min



68  
words

LOW VISION

**Summary:** The cultivation of date palm (*Phoenix dactylifera* L.) is acutely impacted by numerous fungal, bacterial, and pest-related diseases that diminish yield, spoil fruit quality, and undermine long-term agricultural sustainability. The traditional methods of monitoring diseases, which rely heavily on expe...



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## Chronic endometritis diagnosis and fertility outcomes: an old unresolved question



Yohann  
Dabi



2025-10-01



1  
min



67  
words

LOW VISION

**Summary:** ABSTRACT: Chronic endometritis, defined by chronic inflammation of the endometrium, remains a clinical and biologic challenge even using hysteroscopy allowing a direct vision of the uterine cavity without anesthesia, and conventional histology using Hematoxylin and Eosin staining. Our primary object...



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## DTL: Parameter- and Memory-Efficient Disentangled Vision Learning



Jianxin  
Wu



2025-10-01



1  
min



77  
words

LOW VISION

**Summary:** The cost of finetuning a pretrained model on downstream tasks steadily increases as they grow larger. Parameter-efficient transfer learning (PETL) is proposed to reduce this cost by changing only a tiny subset of trainable parameters. But, the GPU memory footprint during training is not effectively ...



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## Exploring Vision-Based Active 3D Object Detection by Informativeness Characterization



Xi

Li



2025-10-01



1

min



76

words

LOW VISION

**Summary:** Vision-based 3D object detection (3DOD) gains lots of attention due to its low cost for deployment compared to Lidar-based tasks, while it suffers from labor-expensive data annotations. At the same time, active learning (AL) has shown great potential in reducing annotation costs in related tasks, wh...



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## Age-specific associations between intrinsic capacity impairments and self-rated health in community-dwelling adults: Insights from Taiwan longitudinal study on aging



Fei-Yuan

Hsiao



2025-10-01



1

min



32

words

LOW VISION

**Summary:** CONCLUSIONS: Age-specific patterns suggest targeted interventions: mental health support for middle-aged adults, mobility preservation for young-old adults, and vitality enhancement for the oldest adults. These findings provide guidance for age-tailored ICOPE strategies.



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## Artificial intelligence defines spatial patterns of tumor-infiltrating lymphocytes highly associated with outcome - a pan-GI cancer study



A  
Madabhushi



2025-10-01



1  
min



22  
words

LOW VISION

**Summary:** CONCLUSIONS: Our findings suggest that the spatial relationships of TILs and cancer nuclei are prognostic of survival across multiple GI cancer types.



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## Eagle-eye-inspired neuromorphic synaptic transistor array with ultrabroad dynamic range for adaptive machine vision



Wenping  
Hu



2025-10-01



1  
min



2  
words

LOW VISION



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## Recent progress in the patterning of perovskite films for photodetector applications



Huiming  
Cheng



2025-10-01



1  
min



65  
words

LOW VISION

**Summary:** Photodetectors, as the core devices for optical signal conversion, need to balance high efficiency, fast response, and low-cost fabrication. Perovskite, with its advantages of high carrier mobility and tunable band gaps, have become an ideal alternative to silicon-based materials. This paper systema...



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## Benchmarking foundation models as feature extractors for weakly supervised computational pathology



Jakob Nikolas  
Kather



2025-10-01



1  
min



66  
words

LOW VISION

**Summary:** Numerous pathology foundation models have been developed to extract clinically relevant information. There is currently limited literature independently evaluating these foundation models on external cohorts and clinically relevant tasks to uncover adjustments for future improvements. Here we benchm...





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## Comparison of visual quality and optical zones after TransPRK, SMILE, and FS-LASIK myopia correction procedures

 Zhongyi  
Yang

 2025-10-01

 1  
min

 61  
words

LOW VISION

**Summary:** CONCLUSIONS: TransPRK has good postoperative visual quality, but its advantages may be mediated by its larger optical zone design. In terms of night vision performance, SMILE surgery can effectively preserve the biomechanical properties of the cornea, while FS-LASIK achieved comparable 6-month acuit...




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## The taste of trigeminal sensations: relation between taste, lingual tactile acuity, and spicy perception in patients with taste dysfunction

 Thomas Hummel

 2025-05-28  1 min  70 words


TACTILE ACUITY

**Summary:** In the oral cavity, oral stereognosis and chemesthesis refer to the abilities to recognize shapes and detect noxious substances, respectively, through various receptors distributed on the tongue. The absence of standardized methods to assess oral somatosensory perception has led to a lack of consens...

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## Measuring the Distribution of Tactile Acuity at the Index Finger and Thumb Fingertips

 Hiroyuki Kajimoto

 2025-06-17  1 min  75 words


TACTILE ACUITY


**Summary:** In our day-to-day activities, we utilize not only the pads of our fingers but also the sides and hemispherical tips when manipulating objects. For teleoperation systems to replicate these real-life interactions, tactile sensation must be presented and distributed across the entire fingertip. Thus, u...

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## Optimizing Vibrotactile Feedback for Sensory Substitution in the Thigh: Spatial Acuity and Frequency Characteristics

 Leah R  
Bent

 2025-06-27

 1  
min

 69  
words

TACTILE ACUITY


**Summary:** Amputation of a lower limb not only affects mobility but also interferes with sensory feedback, leading to an elevated risk of falls among individuals living with amputation. Sensory substitution, achieved through tactile displays embedded in transfemoral prosthetic sockets, presents a promising non...


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## Directional vibro-tactile hazard warnings for drivers with vision impairments

 Alex R  
Bowers

 2025-07-02

 1  
min

 80  
words

TACTILE ACUITY


**Summary:** Vision impairment may delay responses to hazards when driving. In a proof-of-concept driving simulator study, we evaluated a hazard warning device designed for vision impaired drivers. Three groups participated: 11 persons with central vision loss (CVL; median age 60 years), 12 with homonymous field...



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## Sensitivity and vagal reactivity to C-tactile-mediated affective touch in mild cognitive impairment due to Alzheimer's disease

 Cecilia  
Guariglia

 2025-08-01  1  
min

 64  
words

TACTILE ACUITY

**Summary:** BackgroundC-tactile (CT) afferents preferentially activate in response to slow caress-like touch, evoking a diffuse pleasant sensation and promoting autonomic regulation. According to Braak's classic model, the neurodegenerative process in Alzheimer's disease (AD) only affects somatosensory cortices...



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## Differences in tactile grid localization accuracy between people with back pain compared to individuals without pain

 Eric  
Fjeldheim

 2025-08-24  1  
min

 22  
words

TACTILE ACUITY

**Summary:** OBJECTIVES: The study aimed to investigate the grid localization test (GLT) between patients with lower back pain and those without back pain.

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## Eye Drop Instillation Success and Hand Function in Adults with Glaucoma: A Pilot Study



Paula Anne Newman-  
Casey



2025-09-09



1  
min



74  
words

TACTILE ACUITY

**Summary:** CONCLUSIONS: Despite hand function deficits, in this exploratory pilot study, adults with glaucoma demonstrated eye drop instillation success comparable to those without glaucoma, though with higher rates of bottle tip contact with the eye, skin, or eyelashes, suggesting an increased risk of potenti...



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## Functional evidence for early origin of tactile acuity in the vertebrate somatosensory system



Sviatoslav N  
Bagriantsev



2025-09-13



1  
min



58  
words

TACTILE ACUITY

**Summary:** Mammals and reptiles possess a sophisticated somatosensory system for precise tactile discrimination via mechanosensory end-organs, such as Meissner and Pacinian corpuscles and others. These structures detect sustained pressure, velocity, and vibrations, thereby facilitating nuanced environmental in...





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## The coarse mental map of the breast is anchored on the nipple

 Charles M  
Greenspon

 2025-09-18  1  
min

 86  
words

TACTILE ACUITY

**Summary:** Touch plays a key role in our perception of our body and shapes our interactions with the world, from the objects we manipulate to the people we touch. While the tactile sensibility of the hand has been extensively characterized, much less is known about touch on other parts of the body. Despite the...



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## Haptic Feedback Systems for Lower-Limb Prosthetic Applications: A Review of System Design, User Experience, and Clinical Insights

 Runar  
Unnthorsson

 2025-09-27  1  
min

 65  
words

TACTILE ACUITY

**Summary:** Systems presenting haptic information have emerged as an important technological advance in assisting individuals with sensory impairments or amputations, where the aim is to enhance sensory perception or provide sensory substitution through tactile feedback. These systems provide information on lim...


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## Exploring the use of smartphone applications during navigation-based tasks for individuals who are blind or who have low vision: future directions and priorities

 Joseph Paul  
Nemargut



2025-08-25



1  
min



62  
words

**BRaille**

**Summary:** CONCLUSION: These results provide vital insights for technology developers about the perceived utility of smartphone apps for people with low vision or blindness during navigation. Our results highlight the importance of built-in accessibility features for users with visual impairments. As additiona...




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## Gradient Porous Flexible Pressure Sensors with the Relay Effect for High-Accuracy Braille-to-Speech Recognition

 Jianming  
Xu



2025-08-25



1  
min



62  
words

**BRaille**

**Summary:** The development of highly sensitive, wide linear-range flexible pressure sensors is crucial for practical applications in human-computer interaction, physiological signal detection, and motion monitoring. However, traditional flexible pressure sensors often suffer from limited compressibility in the...





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
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## Individual and community level factors influencing modern contraceptive use among women of reproductive age in South Africa: a multilevel analysis

 Million  
Phiri

 2025-08-26  1  
min

 46  
words

**BRaille**


**Summary:** CONCLUSION: Sensory disability status influenced women's contraceptive behaviour in South Africa. Current family planning interventions should target women with sensory disabilities by prioritising accessible communication methods (e.g., braille, sign language), disability awareness training for hea...



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## Explosion-powered eversible tactile displays

 Robert F  
Shepherd

 2025-08-27  1  
min

 64  
words

**BRaille**


**Summary:** High-resolution electronic tactile displays stand to transform haptics for remote machine operation, virtual reality, and digital information access for people who are blind or visually impaired. Yet, increasing the resolution of these displays requires increasing the number of individually addressa...


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## A Biomimetic Fiber-Entangled Permeable Electronic Skin for Strain-Insensitive and High-Resolution Tactile Sensing

 Zhijun  
Ma

 2025-08-28

 1  
min

 57  
words

[BRAILLE](#)


**Summary:** Electronic skins (e-skins) incorporating island architectures represent a promising platform for strain-insensitive tactile sensing by mechanically decoupling sensing units from deformations. However, conventional island designs encounter stress concentration issues caused by inherent modulus mismat...


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## High-Density Tactile Sensor Array for Sub-Millimeter Texture Recognition

 Min  
Zhang


 2025-08-28

 1  
min

 64  
words

[BRAILLE](#)

**Summary:** High-density tactile sensor arrays that replicate human touch could restore texture perception in paralyzed individuals. However, conventional tactile sensor arrays face inherent trade-offs between spatial resolution, sensitivity, and crosstalk suppression due to microstructure size limitations and ...

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## A Diachronic Investigation of the Change in Form and Formational-Semantic Systematicity of the Chinese Sign Language Lexicon



Hao  
Lin



2025-09-01



1  
min



72  
words

BRAILLE

**Summary:** It has been argued in previous research that several competing pressures guide the directions of language evolution (economy vs. redundancy; arbitrariness vs. systematicity). For sign languages, however, the effects of competing pressures on their change of lexical systems remain largely unclear. In...



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## Wireless Electrotactile System with Hydrogel-Based Electrodes for Conformal Tactile Interaction



Ji  
Liu



2025-09-02



1  
min



56  
words

BRAILLE

**Summary:** A wireless epidermal electrotactile interface is demonstrated through integration of skin-conformal electrodes and flexible circuitry, addressing existing limitations in haptic technology caused by mechanical mismatch and system-level integration challenges. This electrotactile system achieves low s...



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## Beyond access: rethinking assistive technology for individuals with visual impairments in Türkiye

Önder  
İşlek

17 2025-09-12

1  
min

55  
words

BRILLE

**Summary:** CONCLUSION: Despite demonstrating adaptability, individuals with VI in Türkiye face significant structural barriers to equitable AT access. Informal learning limited public support, and a lack of locally adapted tools contribute to digital exclusion. A rights-based approach-emphasizing inclusive fun...

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## High prevalence of bacterial STI, anal HPV, cytological abnormalities and anal lesions among MSM in Togo, 2021: a baseline analysis of the ANRS I MIE 12,400/DepIST-H cohort

Didier K  
Ekouevi

17 2025-09-27

1  
min

42  
words

BRILLE

**Summary:** CONCLUSIONS: These findings emphasize the high prevalence of STIs among MSM and confirm the unusual distribution of HPV types in West Africa, with HPV35 being highly prevalent. A national strategy regarding STI screening and HPV vaccination in this key population is needed.

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## Preliminary evidence for high-definition transcranial direct current stimulation effects on white matter microstructure and executive function in mild cognitive impairment



Huan

Li



2025-09-30



1

min



62

words

TDCS TACS TRNS

**Summary:** CONCLUSION: The findings suggest that HD-tDCS targeting the L-DLPFC may promote microstructural remodeling in white matter tracts, evidenced by elevated fractional anisotropy within the corticospinal and anterior thalamic pathways. While global cognitive measures remained stable, a trend toward impr...



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## Stepwise interventional psychiatry approach for major depression: A case series



Jean-Philippe

Miron



2025-09-30



1

min



46

words

TDCS TACS TRNS

**Summary:** CONCLUSIONS: This case series suggests that a sequential neuromodulation strategy may increase overall response rates in TRD by capturing different responder profiles across modalities. These findings support the feasibility of a pragmatic stepwise approach and highlight the need for controlled stud...




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## On the mechanisms of epidermal stemness and differentiation

 Raghvendra  
Singh

 2025-10-01  1  
min

 70  
words

TDCS TACS TRNS


**Summary:** High Wnt and low Notch activities characterize epidermal stem cells (SCs), while low Wnt and high Notch activities characterize the terminally differentiated epidermal cells (TDCs). However, the mechanism by which transit amplifying cells (TACs) are induced to become terminally differentiated remain...


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## Effects of Transcranial Direct Current Stimulation on pain and pain-related outcomes: an umbrella review

 Dmitriy  
Viderman

 2025-10-01  1  
min

 64  
words

TDCS TACS TRNS


**Summary:** CONCLUSIONS: Our findings suggest that tDCS might be effective for fibromyalgia, migraine, and neuropathic pain associated with spinal cord injury and stroke. However, further evidence is needed for chronic orofacial pain, multiple sclerosis, knee osteoarthritis, central post-stroke pain, intra-abdo...


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## A novel machine learning-based method to quantify the effect of transcranial direct current stimulation on opioid users

 Davoud  
Ahmadi

 2025-10-01

 1  
min

 19  
words

TDCS TACS TRNS

**Summary:** CONCLUSION: These findings suggest that tDCS can be an effective intervention for reducing craving in patients with opioid addiction.


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## Quantitative analysis of [<sup>18</sup>F]CHL2310, a novel PET ligand for cholesterol 24-Hydroxylase, in nonhuman primate brain

 Lu  
Wang

 2025-10-01

 1  
min

 32  
words

TDCS TACS TRNS

**Summary:** CONCLUSION: [<sup>18</sup>F]CHL2310 shows high in vivo specificity, favorable pharmacokinetic properties, and robust quantitative performance in non-human primates. These characteristics support its potential as a PET radiotracer for imaging CYP46A1 in human studies.


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## Dissemination and Impact of a Multimodal Pain Regimen on Analgesia Prescribing at an Academic Hospital

 Avi  
Bhavaraju

 2025-10-01

 1  
min

 30  
words

TDCS TACS TRNS


**Summary:** CONCLUSIONS: Implementation of an MMP protocol by a single division can facilitate the spread of nonopioid adjunctive pain medication use and decrease opioid utilization throughout surgical specialties in a hospital.


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## Developing a Trainee Advisory Committee Within a Pediatric Hospital Medicine Research Network

 Karen L  
Forbes

 2025-10-01

 1  
min

 62  
words

TDCS TACS TRNS

**Summary:** Medical research networks are essential for advancing clinical care. Despite the recognized importance of building research capacity and training future pediatric researchers, trainee engagement within these research networks remains inconsistent. To address this, the Paediatric Inpatient Research N...


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## Personalised dual-site alpha transcranial alternating current stimulation (tACS) targeting right frontoparietal network reduces craving in heroin use disorder

 Kai  
Yuan

 2025-10-01

 1  
min

 2  
words

TDCS TACS TRNS

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## Effects of transcranial alternating current stimulation on cognitive function in older adults: a systematic review and meta-analysis of randomized controlled trials

 Yuxia  
Ma

 2025-10-01

 1  
min

 42  
words

TDCS TACS TRNS


**Summary:** CONCLUSION: tACS intervention significantly improves immediate memory and delayed memory in older adults with AD. Further large-scale RCTs are needed to clarify the specific effects of tACS on various cognitive domains, and optimal stimulation parameters should be investigated to guide clinical prac...


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## AI-Driven Multimodal Brain-State Decoding for Personalized Closed-Loop TENS: A Comprehensive Review

 Ping  
Shi

 2025-09-27

 1  
min

 64  
words

FNIRS


**Summary:** Chronic pain is a dynamic, brain-wide condition that eludes effective management by conventional, static treatment approaches. Transcutaneous Electrical Nerve Stimulation (TENS), traditionally perceived as a simple and generic modality, is on the verge of a significant transformation. Guided by adva...


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## Exploring Imagined Movement for Brain-Computer Interface Control: An fNIRS and EEG Review

 Jamshed  
Iqbal

 2025-09-27

 1  
min

 66  
words

FNIRS

**Summary:** Brain-Computer Interfaces (BCIs) offer a non-invasive pathway for restoring motor function, particularly for individuals with limb loss. This review explored the effectiveness of Electroencephalography (EEG) and function Near-Infrared Spectroscopy (fNIRS) in decoding Motor Imagery (MI) movements for...

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## Sex Differences in Cortical Hemodynamic Responses During Interactive and Passive Tasks: An fNIRS Study Using the Nefroball System



Aleksandra  
Ryl



2025-09-27



1  
min



69  
words

**fNIRS**

**Summary:** The present study aimed to investigate sex differences in the hemodynamic response of the cerebral cortex during interactive and passive tasks using functional near-infrared spectroscopy fNIRS. Ninety-seven healthy adults (63 women, 34 men) participated in the study. Participants performed two tasks...



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## Editorial: Advanced fNIRS applications in neuroscience and neurological disorders



Daifa  
Wang



2025-09-29



1  
min



2  
words

**fNIRS**



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## Brain network evolution in late preterm to term infants: a near-infrared spectroscopy imaging study



Yiwei

Li



2025-09-29



1

min



27

words

FNIRS

**Summary:** CONCLUSIONS: These results underscore the critical role of GA in shaping neonatal brain network functional organization and provide valuable insights for early intervention strategies in preterm infants.



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## Effectiveness and mechanism of moxibustion in treating chronic non-specific low back pain: study protocol for a multicenter randomized controlled trial



Han

Xiang



2025-09-29



1

min



67

words

FNIRS

**Summary:** INTRODUCTION: Chronic non-specific low back pain (CNLBP) represents the most commonly encountered subtype of low back pain (LBP) in clinical practice. It has no clearly identified etiological factors and is prone to recurrence, which severely compromises patients' quality of life. Moxibustion therap...




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## Effects of robot assisted mirror therapy on motor function and cortical activation in patients with right hemisphere damage

 Yifan Wang


 2025-09-29

 1 min

 75 words

FNIRS


**Summary:** Robot-assisted mirror therapy (MRT) is a cutting-edge rehabilitative treatment that combines mirror therapy and rehabilitation robots and can improve stroke patient participation in rehabilitation training. The aim of this study was to investigate the effects of MRT training in patients with right-h...


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## Advancing pain assessment in Alzheimer's disease and related dementias: Functional near-infrared spectroscopy for investigating brain activity

 Hyochol  
Ahn


 17 2025-09-30

 1  
min

 58  
words

**FNIRS**


**Summary:** CONCLUSION: fNIRS demonstrated feasibility as an objective pain assessment tool in ADRD. tDCS served only as a probe to induce cortical modulation for evaluating fNIRS performance. In this study, tDCS functioned as a probe to induce cortical modulation for evaluating fNIRS sensitivity, not as a ther...


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## MEFD dataset and GCSFormer model : Cross-subject emotion recognition based on multimodal physiological signals

 Wenbo Dong


 2025-10-01

 1 min

 62 words

**FNIRS**

**Summary:** Cross-subject emotion recognition is an important research direction in the fields of affective computing and brain-computer interfaces, aiming to identify the emotional states of different individuals through physiological signals such as functional near-infrared spectroscopy (fNIRS) and electroenc...


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## Analysis of the analgesic mechanism of TENS-WAA in colonoscopy using the EEG-fNIRS system: a study protocol for a randomised controlled trial

 Fanfu  
Fang

 2025-10-01  1  
min

 62  
words

**FNIRS**


**Summary:** INTRODUCTION: Colonoscopy is an essential procedure for the early diagnosis of colorectal conditions; however, over 60% of patients undergoing non-sedated colonoscopy report moderate to severe pain. This study aims to investigate the central analgesic mechanisms of transcutaneous electrical nerve st...



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## Machine learning predictions from unpredictable chaos

 Guo-Wei  
Wei

 2025-09-30  1  
min

 68  
words

**BRAIN COMPUTER INTERFACE**

**Summary:** Chaos is omnipresent in nature, and its understanding provides enormous social and economic benefits. However, the unpredictability of chaotic systems is a textbook concept due to their sensitivity to initial conditions, aperiodic behaviour, fractal dimensions, nonlinearity and strange attractors. I...


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## EEG-based motor execution classification of upper and lower extremities using machine learning

 Cengiz  
Tepe

 2025-10-01

 1  
min

 61  
words

BRAIN COMPUTER INTERFACE

**Summary:** This study classifies upper- and lower-extremity motor execution from electroencephalography (EEG). We compared two feature extractors, statistical features and Common Spatial Patterns (CSP), and four classifiers: K-Nearest Neighbors, Linear Discriminant Analysis (LDA), Multilayer Perceptron, and Su...


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## The Contribution of Wearable Devices and Artificial Intelligence to Promoting Healthy Aging

 Chaiyavat  
Chaiysut

 2025-10-01

 1  
min

 51  
words

BRAIN COMPUTER INTERFACE

**Summary:** CONCLUSION: The evolving landscape of wearable technologies, exemplified by Fitbit®, Acti- Graph™, and other interventions, holds substantial promise for reshaping healthcare approaches for the aging population. Addressing the limitations will be crucial as research progresses to ensure the effectiv...


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## Revolutionizing brain-computer interfaces: Compact and high-speed wireless neural signal acquisition

 Gang  
Wang

 2025-10-01

 1  
min

 64  
words

BRAIN COMPUTER INTERFACE

**Summary:** A brain-computer interface (BCI) facilitates the connection between the human brain and external devices by decoding neurophysiological signals, thereby enabling seamless interaction between humans and machines. However, existing neural signal acquisition systems often suffer from limited channel co...


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## An EEG-EMG-based Hybrid Brain-Computer Interface for Decoding Tones in Silent and Audible Speech

 Chunzhi  
Yi

 2025-10-01

 1  
min

 72  
words

BRAIN COMPUTER INTERFACE


**Summary:** Speech recognition can be widely applied to support people with language disabilities by enabling them to communicate through brain-computer interfaces (BCIs), thus improving their quality of life. Despite the essential role of tonal variations in conveying semantic meaning, there have been limited ...


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## MEFD dataset and GCSFormer model : Cross-subject emotion recognition based on multimodal physiological signals

 Wenbo Dong


 2025-10-01

 1 min

 62 words

BRAIN COMPUTER INTERFACE

**Summary:** Cross-subject emotion recognition is an important research direction in the fields of affective computing and brain-computer interfaces, aiming to identify the emotional states of different individuals through physiological signals such as functional near-infrared spectroscopy (fNIRS) and electroenc...

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## High - Quality Decoding of RGB Images from the Neuronal Signals of the Pigeon Optic Tectum



Songwei  
Wang



2025-10-01



1  
min



38  
words

BRAIN COMPUTER INTERFACE

**Summary:** CONCLUSIONS: This research provides a novel technical pathway for high-quality visual neural decoding, with robust experimental metrics validating its effectiveness. It also offers experimental evidence to support investigations into the information processing mechanisms of the avian visual pathway.



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## Transfer learning via distributed brain recordings enables reliable speech decoding



Nitin  
Tandon



2025-10-01



1  
min



63  
words

BRAIN COMPUTER INTERFACE

**Summary:** Speech brain-computer interfaces (BCIs) combine neural recordings with large language models to achieve real-time intelligible speech. However, these decoders rely on dense, intact cortical coverage and are challenging to scale across individuals with heterogeneous brain organization. To derive scal...



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## Peptide design through binding interface mimicry with PepMimic



Jianzhu  
Ma



2025-10-01



1  
min



71  
words

BRAIN COMPUTER INTERFACE

**Summary:** Peptides offer advantages for targeted therapy, including oral bioavailability, cellular permeability and high specificity, setting them apart from conventional small molecules and biologics. Here we develop an artificial intelligence algorithm, PepMimic, to transform a known receptor or an existing...



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## Physical Activity and Depressive Mood Share the Structural Connectivity Between Motor and Reward Networks



Tianzi  
Jiang



2025-10-01



1  
min



73  
words

BRAIN COMPUTER INTERFACE

**Summary:** In various studies, exercise has been revealed to have a positive effect on alleviating depressive symptoms. However, the neural basis behind this phenomenon remains unknown, as well as its underlying biological mechanism. In this study, we used a large neuroimaging cohort [n = 1,027, major depressi...






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## Culturally responsive dreamwork: Facilitating culturally competent dream discussions.


 2024-12-12  1 min  118 words

DREAMING

**Summary:** Culturally responsive dreamwork (CRD) addresses a significant gap in counseling and psychotherapy by offering an innovative, culturally competent approach for therapeutic dream discussions. By adopting a culturally responsive stance, CRD guides dream discussions without imposing psychological belief...

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## Nightmares and the Big Five personality traits: A systematic review and three-level meta-analysis.




 2025-02-17  1 min  227 words

DREAMING

**Summary:** Our objective was to conduct a systematic review with meta-analysis to enhance our comprehension of the Big Five personality traits that are associated with nightmare frequency and distress and might thus serve as risk factors for frequent and distressing nightmares. The inclusion criteria for studi...

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<http://doi.org/10.1037/drm0000301>

## An empirical comparison of some nightmare dispositions: Neuroticism, nightmare proneness, thin psychological boundaries, and sensory processing sensitivity.

 2024-11-07  1 min  117 words

DREAMING

**Summary:** Previous research and theory have identified several dispositions for experiencing frequent nightmares, but these dispositions are rarely examined simultaneously. This study compared the relative strength of these dispositions in predicting nightmare frequency. A sample of 116 university students co...

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## Sleep patterns and crisis-related dreams during the COVID-19 pandemic and the Russo-Ukrainian war.

 2025-03-06  1 min  200 words




DREAMING

**Summary:** The COVID-19 pandemic and the ongoing Russo-Ukrainian War have profoundly affected individuals worldwide, eliciting heightened levels of stress, anxiety, and fear. This study investigates the impact of these crises on sleep patterns and dream experiences within Portugal's general adult population. O...

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## Political mobilization, trauma, delusional dream themes, and nightmare distress in Hong Kong.

 2025-01-16  1 min  187 words


DREAMING




**Summary:** Dreams are known to be affected by large-scale traumatic events that impact society, but the literature on social movement-related trauma is inadequate. The Anti-Extradition Law Amendment Bill Movement (Anti-ELAB) was a 7-month large-scale and highly traumatic social movement in Hong Kong that began...

 Read full article:

<http://doi.org/10.1037/drm0000299>


## Logly 🚀 — a Rust-powered, super fast, and simple logging library for Python

 /u/muhammad-fiaz

 2025-10-01  2 min  554 words



REDDIT PYTHON

**Summary:** <!-- SC\_OFF --><div class="md"><p><strong>What My Project Does</strong></p> <p>Logly is a <strong>logging library for Python</strong> that combines simplicity with <strong>high performance</strong> using a Rust backend. It supports:</p> <ul> <li>Console and file logging</li> <li>JSON / structured lo...

 Read full article:

[https://www.reddit.com/r/Python/comments/1nv3tgp/logly\\_a\\_rustpowered\\_super\\_fast\\_and\\_simple\\_logging/](https://www.reddit.com/r/Python/comments/1nv3tgp/logly_a_rustpowered_super_fast_and_simple_logging/)

## Edge264 – Minimalist, high-performance software decoder for H.264/AVC video





 2025-10-01  1 min  2 words

HACKER NEWS

**Summary:** [Comments](https://news.ycombinator.com/item?id=45443462)

 Read full article:  
<https://github.com/tvlab/edge264>

## Don't avoid workplace politics

 matheusml  2025-10-01  1 min  13 words

HACKER NEWS

**Summary:**

Article URL: <https://terriblesoftware.org/2025/10/01/stop-avoiding-politics/>

Comments URL: <https://news.ycombinator.com/item?id=45440571>

Points: ...

 Read full article:  
<https://terriblesoftware.org/2025/10/01/stop-avoiding-politics/>

## Edge264 – Minimalist, high-performance software decoder for H.264/AVC video



andsoitis

17

2025-10-01



1

min



13

words

HACKER NEWS

**Summary:**

Article URL: <https://github.com/tvlab/edge264>

Comments URL: <https://news.ycombinator.com/item?id=45443462>

Points: 98

# Comments: 20



Read full article:

<https://github.com/tvlab/edge264>

## Bridging Biotech: Regional shifts and patterns



dziura

17

2025-02-05



1

min



15

words

EMBS

**Summary:**


The post [Bridging Biotech: Regional shifts and patterns](https://www.embs.org/blog-post/regional-shifts-and-patterns/) appeared first on [IEEE EMBS](https://www.embs.org).






Read full article:

<https://www.embs.org/blog-post/regional-shifts-and-patterns/>

## Welcoming Dr. Ana Kyani as the New Women in Biomedical Engineering Chair for IEEE EMBS

 Nancy  
Zimmerman


 2025-03-27  1  
min

 24  
words

EMBS


**Summary:**



The post [Welcoming Dr. Ana Kyani as the New Women in Biomedical Engineering Chair for IEEE EMBS](https://www.embs.org/blog-post/welcoming-dr-ana-kyani-as-wibme-chair-ieee-embs/) appeared first on [IEEE EMBS](https://www.embs.org/).


 Read full article:

<https://www.embs.org/blog-post/welcoming-dr-ana-kyani-as-wibme-chair-ieee-embs/>

## Ivan Lee, Appointed Editor-in-Chief of EMBC Proceedings

 Nancy  
Zimmerman

 2025-09-08  1  
min

 17  
words

EMBS

**Summary:**



The post [Ivan Lee, Appointed Editor-in-Chief of EMBC Proceedings](https://www.embs.org/press/embc-eic-sunghoon-ivan-lee/#new_tab) appeared first on [IEEE EMBS](https://www.embs.org/).


 Read full article:

[https://www.embs.org/press/embc-eic-sunghoon-ivan-lee/#new\\_tab](https://www.embs.org/press/embc-eic-sunghoon-ivan-lee/#new_tab)

# RELATE-Sim: Leveraging Turning Point Theory and LLM Agents to Predict and Understand Long-Term Relationship Dynamics through Interactive Narrative Simulations

 Matthew Yue, Zhikun Xu, Vivek Gupta, Thao Ha, Liesal Sharabi, Ben Zhou

 2025-10-02  1 min

 131 words

ARXIV CS HC

**Summary:** arXiv:2510.00414v1 Announce Type: new Abstract: Most dating technologies optimize for getting together, not staying together. We present RELATE-Sim, a theory-grounded simulator that models how couples behave at consequential turning points-exclusivity talks, conflict-and-repair episodes, relocation...

 **Read full article:**  
<https://arxiv.org/abs/2510.00414>

## Investigating Encoding and Perspective for Augmented Reality



Jade Kandel, Sriya Kasumarthi, Spiros Tsalikis, Chelsea Duppen, Daniel Szafir, Michael Lewek, Henry Fuchs, Danielle Szafir



2025-10-02



1  
min



149  
words

ARXIV CS HC

**Summary:** arXiv:2510.00407v1 Announce Type: new Abstract: Augmented reality (AR) offers promising opportunities to support movement-based activities, such as personal training or physical therapy, with real-time, spatially-situated visual cues. While many approaches leverage AR to guide motion, existing desi...



Read full article:

<https://arxiv.org/abs/2510.00407>

## Attribution Gradients: Incrementally Unfolding Citations for Critical Examination of Attributed AI Answers



Hita Kambhamettu, Alyssa Hwang, Philippe Laban, Andrew Head



2025-10-02



1  
min



154  
words

ARXIV CS HC

**Summary:** arXiv:2510.00361v1 Announce Type: new Abstract: AI question answering systems increasingly generate responses with attributions to sources. However, the task of verifying the actual content of these attributions is in most cases impractical. In this paper, we present attribution gradients as a solu...



Read full article:

<https://arxiv.org/abs/2510.00361>

## The Feng Shui of Visualization: Design the Path to SUCCESS and GOOD FORTUNE



Chang Han, Andrew  
McNutt



2025-10-02



1  
min



159  
words

ARXIV CS HC

**Summary:** arXiv:2510.00344v1 Announce Type: new Abstract: Superstition and religious belief system have historically shaped human behavior, offering powerful psychological motivations and persuasive frameworks to guide actions. Inspired by Feng Shui -- an ancient Chinese superstition -- this paper proposes a...



Read full article:

<https://arxiv.org/abs/2510.00344>

## Navigating the Synchrony-Stability Frontier in Adaptive Chatbots



T. James  
Brandt



2025-10-02



1  
min



212  
words

ARXIV CS HC


**Summary:** arXiv:2510.00339v1 Announce Type: new Abstract: Adaptive chatbots that mimic a user's linguistic style can build rapport and engagement, yet unconstrained mimicry risks an agent that feels unstable or sycophantic. We present a computational evaluation framework that makes the core design tension ex...




Read full article:


<https://arxiv.org/abs/2510.00339>

## Visualization Was Here: Reorienting Research When Visualizations Fade into the Background

 Paul C.  
Parsons

 2025-10-02

 1  
min


 165  
words


ARXIV CS HC

**Summary:** arXiv:2510.00266v1 Announce Type: new Abstract: Visualization research often centers on how visual representations generate insight, guide interpretation, or support decision-making. But in many real-world domains, visualizations do not stand out--they recede into the background, stabilized and tru...

 **Read full article:**  
<https://arxiv.org/abs/2510.00266>

## Can AI agents understand spoken conversations about data visualizations in online meetings?

 Rizul Sharma, Tianyu Jiang, Seokki Lee, Jillian  
Aurisano

 2025-10-02

 1  
min

 171  
words

ARXIV CS HC

**Summary:** arXiv:2510.00245v1 Announce Type: new Abstract: In this short paper, we present work evaluating an AI agent's understanding of spoken conversations about data visualizations in an online meeting scenario. There is growing interest in the development of AI-assistants that support meetings, such as b...

 **Read full article:**  
<https://arxiv.org/abs/2510.00245>



## Data Melodification FM: Where Musical Rhetoric Meets Sonification



Ke Er Amy Zhang, David Grellscheid, Laura Garrison



2025-10-02



1 min



126 words

ARXIV CS HC

**Summary:** arXiv:2510.00222v1 Announce Type: new Abstract: We propose a design space for data melodification, where standard visualization idioms and fundamental data characteristics map to rhetorical devices of music for a more affective experience of data. Traditional data sonification transforms data into ...



Read full article:

<https://arxiv.org/abs/2510.00222>

## Perceived Weight of Mediated Reality Sticks



Satoshi Hashiguchi, Yuta Kataoka, Asako Kimura, Shohei Mori



2025-10-02



1 min



161 words

ARXIV CS HC

**Summary:** arXiv:2510.00191v1 Announce Type: new Abstract: Mediated reality, where augmented reality (AR) and diminished reality (DR) meet, enables visual modifications to real-world objects. A physical object with a mediated reality visual change retains its original physical properties. However, it is perce...



Read full article:

<https://arxiv.org/abs/2510.00191>

## The Formation of Trust in Autonomous Vehicles after Interacting with Robotaxis on Public Roads



Xiang Chang, Zhijie Yi, Yichang Liu, Hongling Sheng, Dengbo He



2025-10-02



1 min



152 words

ARXIV CS HC

**Summary:** arXiv:2510.00120v1 Announce Type: new Abstract: This study investigates how pedestrian trust, receptivity, and behavior evolve during interactions with Level-4 autonomous vehicles (AVs) at uncontrolled urban intersections in a naturalistic setting. While public acceptance is critical for AV adoptio...



Read full article:

<https://arxiv.org/abs/2510.00120>

## Achieving More Human Brain-Like Vision via Human EEG Representational Alignment



Zitong Lu, Yile Wang, Julie D. Golomb



2025-10-02



1 min



169 words

ARXIV QBIO NC

**Summary:** arXiv:2401.17231v3 Announce Type: replace-cross Abstract: Despite advancements in artificial intelligence, object recognition models still lag behind in emulating visual information processing in human brains. Recent studies have highlighted the potential of using neural data to mimic brain process...



Read full article:

<https://arxiv.org/abs/2401.17231>

## Integration of Calcium Imaging Traces via Deep Generative Modeling



Berta Ros, Mireia Olives-Verger, Caterina Fuses, Josep M Canals, Jordi Soriano, Jordi Abante



2025-10-02



1  
min



124  
words

ARXIV QBIO NC

**Summary:** arXiv:2501.14615v3 Announce Type: replace Abstract: Calcium imaging allows for the parallel measurement of large neuronal populations in a spatially resolved and minimally invasive manner, and has become a gold-standard for neuronal functionality. While deep generative models have been successfully...



Read full article:

<https://arxiv.org/abs/2501.14615>

## WaveMind: Towards a Conversational EEG Foundation Model Aligned to Textual and Visual Modalities



Ziyi Zeng, Zhenyang Cai, Yixi Cai, Xidong Wang, Junying Chen, Rongsheng Wang, Yipeng Liu, Siqi Cai, Benyou Wang, Zhiguo Zhang, Haizhou Li



2025-10-02



1  
min



136  
words

ARXIV QBIO NC

**Summary:** arXiv:2510.00032v1 Announce Type: cross Abstract: Electroencephalography (EEG) interpretation using multimodal large language models (MLLMs) offers a novel approach for analyzing brain signals. However, the complex nature of brain activity introduces critical challenges: EEG signals simultaneously ...



Read full article:

<https://arxiv.org/abs/2510.00032>

## Some Further Developments on a Neurobiologically-based Model for Color Sensations in Humans



Charles Q.  
Wu



2025-10-02



1  
min



243  
words

ARXIV QBIO NC

**Summary:** arXiv:2510.01000v1 Announce Type: new Abstract: At HVEI-2012, I presented a neurobiologically-based model for trichromatic color sensations in humans, mapping the neural substrate for color sensations to V1-L4: the thalamic recipient layer of the primary visual cortex. In this paper, I propose that...



Read full article:

<https://arxiv.org/abs/2510.01000>

## Emergence of Deviance Detection in Cortical Cultures through Maturation, Criticality, and Early Experience



Zhuo Zhang, Amit Yaron, Dai Akita, Tomoyo Isoguchi Shiramatsu, Zenas C. Chao, Hirokazu Takahashi



2025-10-02



1  
min



253  
words

ARXIV QBIO NC

**Summary:** arXiv:2510.00764v1 Announce Type: new Abstract: Mismatch negativity (MMN) in humans reflects deviance detection (DD), a core neural mechanism of predictive processing. However, the fundamental principles by which DD emerges and matures during early cortical development-potentially providing a neuro...



Read full article:

<https://arxiv.org/abs/2510.00764>

## Emergence of robust looming selectivity via coordinated inhibitory neural computations



Qinbing Fu, Ziyan  
Qin



2025-10-02



1  
min



224  
words

ARXIV QBIO NC

**Summary:** arXiv:2510.00498v1 Announce Type: new Abstract: In the locust's lobula giant movement detector neural pathways, four categories of inhibition, i.e., global inhibition, self-inhibition, lateral inhibition, and feed-forward inhibition, have been functionally explored in the context of looming percept...



Read full article:

<https://arxiv.org/abs/2510.00498>

## Evolutionary Kuramoto dynamics unravels origins of chimera states in neural populations



Thomas Zdyski, Scott Pauls, Feng  
Fu



2025-10-02



1  
min



157  
words

ARXIV QBIO NC

**Summary:** arXiv:2510.00423v1 Announce Type: new Abstract: Neural synchronization is central to cognition. However, incomplete synchronization often produces chimera states where coherent and incoherent dynamics coexist. While previous studies have explored such patterns using networks of coupled oscillators, ...



Read full article:

<https://arxiv.org/abs/2510.00423>

## Robust State-space Reconstruction of Brain Dynamics via Bootstrap Monte Carlo SSA



Sir-Lord Wiafe, Carter Hinsley, Vince D. Calhoun



2025-10-02



1 min



124 words

ARXIV QBIO NC

**Summary:** arXiv:2510.00011v1 Announce Type: new Abstract: Reconstructing latent state-space geometry from time series provides a powerful route to studying nonlinear dynamics across complex systems. Delay-coordinate embedding provides the theoretical basis but assumes long, noise-free recordings, which many ...



Read full article:

<https://arxiv.org/abs/2510.00011>

## Computational Advances in Taste Perception: From Ion Channels to Neural Coding



Vladimir A. Lazovsky, Sergey V. Stasenko, Victor B. Kazantsev



2025-10-02



1 min



136 words

ARXIV QBIO NC

**Summary:** arXiv:2510.00010v1 Announce Type: new Abstract: Recent advances in computational neuroscience demand models that balance biophysical realism with scalability. We present a hybrid neuron model combining the biophysical fidelity of Hodgkin-Huxley (HH) dynamics for taste receptor cells with the comput...




Read full article:

<https://arxiv.org/abs/2510.00010>

## Predicting infant vocabulary from neural connectivity and maternal speech: A machine learning approach

 1  
min

 33  
words

BRAIN RESEARCH

**Summary:**

Publication date: 1 November 2025

Source: Brain Research, Volume 1866


Author(s): Brigitta Tóth, Gábor P. Háden, Ildikó Tóth, Krisztina Lakatos, Anna Kohári, Katalin Mády, Bence Kas, Dénes Tóth, Ádám Szalontai, Uwe D. Reichel, István Winkler

 Read full article:

[https://www.sciencedirect.com/science/article/pii/S000689932500455X?dgcid=rss\\_sd\\_all](https://www.sciencedirect.com/science/article/pii/S000689932500455X?dgcid=rss_sd_all)

## LncRNA HOXA-AS3 drives glioma progression through miR-542-5p-Mediated regulation of HOXA1 and WNT5A signaling

 1  
min

 23  
words

BRAIN RESEARCH

**Summary:**

Publication date: 15 November 2025

Source: Brain Research, Volume 1867

Author(s): Lianxu Cui, Ruiyu He, Haomin Li, Siwei Peng, Meiru Zhang, Zhanchuan Ma, Zaiyu Li

 Read full article:

[https://www.sciencedirect.com/science/article/pii/S0006899325005153?dgcid=rss\\_sd\\_all](https://www.sciencedirect.com/science/article/pii/S0006899325005153?dgcid=rss_sd_all)

## Exploring phantom phenomena following brachial plexus block in intact limbs

 1  
min

 19  
words


BRAIN RESEARCH

**Summary:**

Publication date: 15 November 2025

Source: Brain Research, Volume 1867


Author(s): Emily Pettersen, Giacomo Valle, Paolo Sassu, Carina Reinholdt, Max Ortiz-Catalan

 Read full article:

[https://www.sciencedirect.com/science/article/pii/S0006899325005189?dgcid=rss\\_sd\\_all](https://www.sciencedirect.com/science/article/pii/S0006899325005189?dgcid=rss_sd_all)

## Network meta-analysis of migraine therapies: balancing efficacy and safety

 1  
min

 17  
words

BRAIN RESEARCH

**Summary:**

Publication date: 15 November 2025

Source: Brain Research, Volume 1867

Author(s): Rajat Sharma, Ayush Pandey, Rachna Agarwal, Shashank Tripathi


 Read full article:

[https://www.sciencedirect.com/science/article/pii/S0006899325005098?dgcid=rss\\_sd\\_all](https://www.sciencedirect.com/science/article/pii/S0006899325005098?dgcid=rss_sd_all)



## Network pharmacology combined with experimental verification for exploring the potential antidepressant mechanism of Traditional Chinese Medicine Buyang Huanwu Decoction in lipopolysaccharide-induced depressed mouse model

 1  
min

 21  
words

BRAIN RESEARCH

**Summary:**

Publication date: 15 November 2025

Source: Brain Research, Volume 1867

Author(s): Sashuang Liu, Yihe Wang, Xinyu Zhou, Yijing Zhao, Zhen Wang, Dexiang Liu



Read full article:

[https://www.sciencedirect.com/science/article/pii/S0006899325005293?dgcid=rss\\_sd\\_all](https://www.sciencedirect.com/science/article/pii/S0006899325005293?dgcid=rss_sd_all)

## Rethinking task importance in the visual world paradigm

 1  
min

 14  
words

BRAIN RESEARCH

**Summary:**

Publication date: 15 November 2025

Source: Brain Research, Volume 1867

Author(s): Falk Huettig, Michael K. Tanenhaus




Read full article:

[https://www.sciencedirect.com/science/article/pii/S0006899325005281?dgcid=rss\\_sd\\_all](https://www.sciencedirect.com/science/article/pii/S0006899325005281?dgcid=rss_sd_all)

## Utility of *Drosophila* for studying hypoxia-inducible factor (HIF) in neurodegenerative diseases: Advantages versus limitations

 1  
min

 24  
words

BRAIN RESEARCH

**Summary:**

Publication date: 15 November 2025

Source: Brain Research, Volume 1867


Author(s): Zoya Serebrovska, Lei Xi, Michael Khetsuriani, Oleksandra Protsenko, Nadiia Morozova, Denis A. Tolstun, Oksana Maksymchuk

 Read full article:

[https://www.sciencedirect.com/science/article/pii/S0006899325005165?dgcid=rss\\_sd\\_all](https://www.sciencedirect.com/science/article/pii/S0006899325005165?dgcid=rss_sd_all)

## BNIP3L/NIX-mediated mitophagy: Future directions in Alzheimer's disease

 1  
min

 19  
words

BRAIN RESEARCH

**Summary:**

Publication date: 15 November 2025

Source: Brain Research, Volume 1867


Author(s): Violina Kakoty, Khang Wen Goh, Prashant Kesharwani, Young Tag Ko

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[https://www.sciencedirect.com/science/article/pii/S0006899325005335?dgcid=rss\\_sd\\_all](https://www.sciencedirect.com/science/article/pii/S0006899325005335?dgcid=rss_sd_all)

## Functional characterization and *in vitro* pharmacological rescue of a novel *KCNA2* variant associated with developmental and epileptic encephalopathy

 1  
min

 18  
words

NEUROSCIENCE JOURNAL

**Summary:**

Publication date: 1 November 2025

Source: Neuroscience, Volume 586


Author(s): Changning Xie, Miriam Kessi, Fang He, Fei Yin, Jing Peng

 Read full article:

[https://www.sciencedirect.com/science/article/pii/S0306452225009352?dgcid=rss\\_sd\\_all](https://www.sciencedirect.com/science/article/pii/S0306452225009352?dgcid=rss_sd_all)

## An evidence-based analysis of machine learning prediction models for cognitive impairment in cerebral small vessel disease

 1  
min

 20  
words

NEUROSCIENCE JOURNAL

**Summary:**

Publication date: 1 November 2025

Source: Neuroscience, Volume 586


Author(s): Qi Wu, Jupeng Zhang, Peng Lei, Zhihao Zhang, Xiqi Zhu, Changhui Huang

 Read full article:

[https://www.sciencedirect.com/science/article/pii/S030645222500942X?dgcid=rss\\_sd\\_all](https://www.sciencedirect.com/science/article/pii/S030645222500942X?dgcid=rss_sd_all)


## Regional modulation of neurodegeneration and microglial activation by intravenous Wharton's jelly mesenchymal stromal cell therapy in a mouse model of amyotrophic lateral sclerosis

 1  
min

 57  
words

NEUROSCIENCE JOURNAL


**Summary:** <p>Publication date: 1 November 2025</p><p><b>Source:</b> Neuroscience, Volume 586</p><p>Author(s): Leandro C. Teixeira-Pinheiro, Renata Guedes J. Gonçalves, Michelle Furtado, Ana B. Decotelli, Juliana Ferreira Vasques, Mirella Maturano, Raiana Andrade Quintanilha Barbosa, Fernanda Vitoria Marques d...

 Read full article:


[https://www.sciencedirect.com/science/article/pii/S0306452225009534?dgcid=rss\\_sd\\_all](https://www.sciencedirect.com/science/article/pii/S0306452225009534?dgcid=rss_sd_all)

## Sensorimotor mismatch disrupts motor automaticity and increases anxiety during a goal-directed balance task

 Jian  
Wang

 2025-09-25

 1  
min

 183  
words

FRONTIERS HUMAN NEUROSCIENCE

**Summary:** IntroductionSensorimotor integration is crucial role for goal-directed tasks, with sensorimotor mismatch impairing movement execution and potentially evoking anxiety. However, the relationship between mismatch-induced anxiety, movement precision, and automaticity remains unexplored. This study inves...

 Read full article:

<https://www.frontiersin.org/articles/10.3389/fnhum.2025.1632265>

## Association between neuroticism and physical activity: a systematic review and meta-analysis



Wenxue  
Ma



2025-09-25



1  
min



358  
words

FRONTIERS HUMAN NEUROSCIENCE

**Summary:** BackgroundPhysical activity has been shown to be associated with neuroticism, a personality trait reflecting emotional instability and a tendency toward negative emotions. Understanding this relationship is crucial for developing effective mental health interventions. However, the underlying mechani...



Read full article:

<https://www.frontiersin.org/articles/10.3389/fnhum.2025.1557739>

## Comparison of the reticulospinal drive to lumbar erector spinae muscles in postural and voluntary tasks using the StartReact paradigm



Hugo Massé-  
Alarie



2025-09-25



1  
min



210  
words

FRONTIERS HUMAN NEUROSCIENCE


**Summary:** IntroductionWhile lesion and neurophysiological animal studies point toward a notable involvement of subcortical pathways in the control of low back muscles, little attention has been dedicated to the subject in humans. The StartReact paradigm may allow to indirectly test the potential contribution ...




Read full article:


<https://www.frontiersin.org/articles/10.3389/fnhum.2025.1648245>

## Case Report: Implementation of stereoelectroencephalography in Kazakhstan: early experience in surgical planning for drug-resistant epilepsy

 Berik  
Tuleubayev


 2025-09-29

 1  
min

 269  
words

FRONTIERS HUMAN NEUROSCIENCE


**Summary:** Introduction This clinical report describes the management of a 32-year-old patient with a long-standing history of drug-resistant epilepsy. It uniquely illustrates how stereoelectroencephalography (SEEG) played a significant role in the presurgical evaluation of a multifocal epileptic disorder which...

 Read full article:


<https://www.frontiersin.org/articles/10.3389/fnhum.2025.1666735>

## Dynamic graph neural networks for UAV-based group activity recognition in structured team sports

 Hui  
Liu

 2025-09-08

 1  
min

 278  
words

FRONTIERS NEUROBOTICS

**Summary:** Introduction Understanding group actions in real-world settings is essential for the advancement of applications in surveillance, robotics, and autonomous systems. Group activity recognition, particularly in sports scenarios, presents unique challenges due to dynamic interactions, occlusions, and var...

 Read full article:

<https://www.frontiersin.org/articles/10.3389/fnbot.2025.1631998>

## The impact of CSF-filled cavities on scalp EEG and its implications



Maria Carla  
Piastra



2024-06-14



1  
min



64  
words

OOSTENVELD ROBERT

**Summary:** Previous studies have found electroencephalogram (EEG) amplitude and scalp topography differences between neurotypical and neurological/neurosurgical groups, being interpreted at the cognitive level. However, these comparisons are invariably accompanied by anatomical changes. Critical to EEG are the...



Read full article:

<https://pubmed.ncbi.nlm.nih.gov/38873838/?>

[utm\\_source=BucketBot&utm\\_medium=rss&utm\\_campaign=None&utm\\_content=1BUB2BG5RbxOblm-hBbiJWEhGG43qVrvGNHOTqBKva9wWrltM&fc=None&ff=20251002002249&v=2.18.0.post9+e462414](https://pubmed.ncbi.nlm.nih.gov/38873838/?utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1BUB2BG5RbxOblm-hBbiJWEhGG43qVrvGNHOTqBKva9wWrltM&fc=None&ff=20251002002249&v=2.18.0.post9+e462414)

## Motion-BIDS: an extension to the brain imaging data structure to organize motion data for reproducible research



Julius  
Welzel



2024-07-02



1  
min



72  
words

OOSTENVELD ROBERT

**Summary:** We present an extension to the Brain Imaging Data Structure (BIDS) for motion data. Motion data is frequently recorded alongside human brain imaging and electrophysiological data. The goal of Motion-BIDS is to make motion data interoperable across different laboratories and with other data modalities...






Read full article:


<https://pubmed.ncbi.nlm.nih.gov/38956071/?>

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## One hundred years of EEG for brain and behaviour research

 Pedro Valdes-Sosa

 2024-08-22  1 min

 2 words


OOSTENVELD ROBERT



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## Freezing of gait in Parkinson's disease is related to imbalanced stopping-related cortical activity


 Richard J A van Wezel

 2024-09-04  1 min

 65 words

OOSTENVELD ROBERT

**Summary:** Freezing of gait, characterized by involuntary interruptions of walking, is a debilitating motor symptom of Parkinson's disease that restricts people's autonomy. Previous brain imaging studies investigating the mechanisms underlying freezing were restricted to scan people in supine positions and yie...


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## The past, present, and future of the brain imaging data structure (BIDS)

 Krzysztof J  
Gorgolewski

 2024-09-23

 1  
min

 82  
words

OOSTENVELD ROBERT


**Summary:** The Brain Imaging Data Structure (BIDS) is a community-driven standard for the organization of data and metadata from a growing range of neuroscience modalities. This paper is meant as a history of how the standard has developed and grown over time. We outline the principles behind the project, the ...


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## Human cortical high-gamma power scales with movement rate in healthy participants and stroke survivors

 Fanny  
Quandt

 2025-01-09

 1  
min

 65  
words

OOSTENVELD ROBERT


**Summary:** Motor cortical high-gamma oscillations (60-90 Hz) occur at movement onset and are spatially focused over the contralateral primary motor cortex. Although high-gamma oscillations are widely recognized for their significance in human motor control, their precise function on a cortical level remains el...


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## NIRS-BIDS: Brain Imaging Data Structure Extended to Near-Infrared Spectroscopy

 Luca  
Pollonini

 17 2025-01-27

 1  
min

 70  
words

OOSTENVELD ROBERT


**Summary:** Functional near-infrared spectroscopy (fNIRS) is an increasingly popular neuroimaging technique that measures cortical hemodynamic activity in a non-invasive and portable fashion. Although the fNIRS community has been successful in disseminating open-source processing tools and a standard file forma...


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## Pseudonymisation of neuroimages and data protection: Increasing access to data while retaining scientific utility

 Lyuba  
Zehl

 17 2025-06-26

 1  
min

 67  
words

OOSTENVELD ROBERT


**Summary:** For a number of years, facial features removal techniques such as 'defacing', 'skull stripping' and 'face masking/blurring', were considered adequate privacy preserving tools to openly share brain images. Scientifically, these measures were already a compromise between data protection requirements a...


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## Cycling on the Freeway: The perilous state of open-source neuroscience software

 Tim M  
Tierney

 2025-08-13

 1  
min

 74  
words

OOSTENVELD ROBERT


**Summary:** Most scientists need software to perform their research (Barker et al., 2020;Carver et al., 2022;Hettrick, 2014;Hettrick et al., 2014;Switters & Osimo, 2019), and neuroscientists are no exception. Whether we work with reaction times, electrophysiological signals, or magnetic resonance imaging data, ...


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## Optimal configuration of on-scalp OPMs with fixed channel counts

 Robert  
Oostenveld

 2025-08-13

 1  
min

 69  
words

OOSTENVELD ROBERT

**Summary:** Recent technological developments have brought optically pumped magnetometers (OPMs) within reach of the larger neuroscientific community. The current state-of-the-art consists of whole-head systems that measure the magnetic field at >100 locations. OPM sensors can be constructed to measure the fiel...

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## Case 341: Infratentorial Posterior Reversible Encephalopathy Syndrome Associated with Interferon- $\beta$ in Relapsing Multiple Sclerosis

 Joachim  
Fladt



2025-09-30



1  
min



67  
words

LOW VISION

**Summary:** A 36-year-old man with known history of relapsing multiple sclerosis (RMS) of 13-year duration who was undergoing continuous treatment with subcutaneous interferon- $\beta$  (INF- $\beta$ ) (44  $\mu$ g three times per week) presented to the emergency department of our hospital with blurry vision of 1-week duration. Rout...




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## Causes of Visual Impairment and Blindness in a Clinic Population from Puerto Rico

 Claudia Colón-  
Sanchez



2025-09-30



1  
min



56  
words

LOW VISION

**Summary:** CONCLUSION: This study provided insights into the causes of VI and blindness in Puerto Rico. These findings underscore the need for targeted interventions and public health initiatives to improve accessibility to visual rehabilitation. Further research is warranted to explore additional factors infl...



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## User cum expert judgement model for accessibility using fuzzy approach



Satinder  
Kaur



2025-09-30



1  
min



70  
words

LOW VISION

**Summary:** Well-designed websites play a pivotal role in technological innovation by improving accessibility, user interaction and digital inclusivity. It is crucial to evaluate website accessibility as it meets the diverse needs of its users and adheres to legal and ethical standards. Significant research has...



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## Optimizing retinal images based carotid atherosclerosis prediction with explainable foundation models



Jooyoung  
Chang



2025-09-30



1  
min



65  
words

LOW VISION

**Summary:** Carotid atherosclerosis is a key predictor of cardiovascular disease (CVD), necessitating early detection. While foundation models (FMs) show promise in medical imaging, their optimal selection and fine-tuning strategies for classifying carotid atherosclerosis from retinal images remain unclear. Usi...





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## The efficacy and safety of herbal medicines for glycaemic control and insulin resistance in individuals with type 2 diabetes: an umbrella review

 Carolyn  
Ee

 2025-10-01

 1  
min

 70  
words

LOW VISION


**Summary:** CONCLUSIONS: Current evidence supports the use of ginger and turmeric for glycaemic control in type 2 diabetes, however, given the high clinical heterogeneity and low quality of the review, our confidence in this finding is somewhat limited. Herbal medicines should be used only as an adjunct to conv...


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## Development of an embedded diagnostic tool for visual misalignment screening

 Ruthber Rodriguez  
Serrezuela

 2025-10-01

 1  
min

 70  
words

LOW VISION

**Summary:** This article presents the design, implementation, and validation of a low-cost embedded system for preliminary strabismus screening, based on computer vision and deep learning. The hardware integrates a Raspberry Pi 4, a USB camera, and a 3D-printed chin rest to ensure consistent facial positioning....

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## Swin-YOLO-SAM: a hybrid Transformer-based framework integrating Swin Transformer, YOLOv12, and SAM-2.1 for automated identification and segmentation of date palm leaf diseases



Ghassan  
Husnain



2025-10-01



1  
min



68  
words

LOW VISION

**Summary:** The cultivation of date palm (*Phoenix dactylifera* L.) is acutely impacted by numerous fungal, bacterial, and pest-related diseases that diminish yield, spoil fruit quality, and undermine long-term agricultural sustainability. The traditional methods of monitoring diseases, which rely heavily on expe...



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## Chronic endometritis diagnosis and fertility outcomes: an old unresolved question



Yohann  
Dabi



2025-10-01



1  
min



67  
words

LOW VISION

**Summary:** ABSTRACT: Chronic endometritis, defined by chronic inflammation of the endometrium, remains a clinical and biologic challenge even using hysteroscopy allowing a direct vision of the uterine cavity without anesthesia, and conventional histology using Hematoxylin and Eosin staining. Our primary object...



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## DTL: Parameter- and Memory-Efficient Disentangled Vision Learning



Jianxin  
Wu



2025-10-01



1  
min



77  
words

LOW VISION

**Summary:** The cost of finetuning a pretrained model on downstream tasks steadily increases as they grow larger. Parameter-efficient transfer learning (PETL) is proposed to reduce this cost by changing only a tiny subset of trainable parameters. But, the GPU memory footprint during training is not effectively ...



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## Exploring Vision-Based Active 3D Object Detection by Informativeness Characterization



Xi

Li



2025-10-01



1

min



76

words

LOW VISION

**Summary:** Vision-based 3D object detection (3DOD) gains lots of attention due to its low cost for deployment compared to Lidar-based tasks, while it suffers from labor-expensive data annotations. At the same time, active learning (AL) has shown great potential in reducing annotation costs in related tasks, wh...



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## The taste of trigeminal sensations: relation between taste, lingual tactile acuity, and spicy perception in patients with taste dysfunction



Thomas

Hummel



2025-05-28



1

min



70

words

TACTILE ACUITY

**Summary:** In the oral cavity, oral stereognosis and chemesthesis refer to the abilities to recognize shapes and detect noxious substances, respectively, through various receptors distributed on the tongue. The absence of standardized methods to assess oral somatosensory perception has led to a lack of consens...





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## Measuring the Distribution of Tactile Acuity at the Index Finger and Thumb Fingertips

 Hiroyuki  
Kajimoto

 2025-06-17

 1  
min

 75  
words

TACTILE ACUITY

**Summary:** In our day-to-day activities, we utilize not only the pads of our fingers but also the sides and hemispherical tips when manipulating objects. For teleoperation systems to replicate these real-life interactions, tactile sensation must be presented and distributed across the entire fingertip. Thus, u...


 Read full article:

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## Optimizing Vibrotactile Feedback for Sensory Substitution in the Thigh: Spatial Acuity and Frequency Characteristics

 Leah R  
Bent

 2025-06-27

 1  
min

 69  
words

TACTILE ACUITY


**Summary:** Amputation of a lower limb not only affects mobility but also interferes with sensory feedback, leading to an elevated risk of falls among individuals living with amputation. Sensory substitution, achieved through tactile displays embedded in transfemoral prosthetic sockets, presents a promising non...


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## Directional vibro-tactile hazard warnings for drivers with vision impairments

 Alex R  
Bowers

 2025-07-02

 1  
min

 80  
words

TACTILE ACUITY


**Summary:** Vision impairment may delay responses to hazards when driving. In a proof-of-concept driving simulator study, we evaluated a hazard warning device designed for vision impaired drivers. Three groups participated: 11 persons with central vision loss (CVL; median age 60 years), 12 with homonymous field...


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## Sensitivity and vagal reactivity to C-tactile-mediated affective touch in mild cognitive impairment due to Alzheimer's disease

 Cecilia  
Guariglia

 2025-08-01

 1  
min

 64  
words

TACTILE ACUITY

**Summary:** BackgroundC-tactile (CT) afferents preferentially activate in response to slow caress-like touch, evoking a diffuse pleasant sensation and promoting autonomic regulation. According to Braak's classic model, the neurodegenerative process in Alzheimer's disease (AD) only affects somatosensory cortices...


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## Differences in tactile grid localization accuracy between people with back pain compared to individuals without pain

 Eric  
Fjeldheim

 17 2025-08-24

 1  
min

 22  
words

TACTILE ACUITY


**Summary:** OBJECTIVES: The study aimed to investigate the grid localization test (GLT) between patients with lower back pain and those without back pain.


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VOQkZ1QsEMPlx7YY7aF6AfClqP-RYZd&fc=None&ff=20251002002236&v=2.18.0.post9+e462414

## Eye Drop Instillation Success and Hand Function in Adults with Glaucoma: A Pilot Study

 Paula Anne Newman-  
Casey


 17 2025-09-09

 1  
min

 74  
words

TACTILE ACUITY


**Summary:** CONCLUSIONS: Despite hand function deficits, in this exploratory pilot study, adults with glaucoma demonstrated eye drop instillation success comparable to those without glaucoma, though with higher rates of bottle tip contact with the eye, skin, or eyelashes, suggesting an increased risk of potenti...


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VOQkZ1QsEMPlx7YY7aF6AfClqP-RYZd&fc=None&ff=20251002002236&v=2.18.0.post9+e462414

## Functional evidence for early origin of tactile acuity in the vertebrate somatosensory system

 Sviatoslav N  
Bagriantsev

 2025-09-13

 1  
min

 58  
words

TACTILE ACUITY


**Summary:** Mammals and reptiles possess a sophisticated somatosensory system for precise tactile discrimination via mechanosensory end-organs, such as Meissner and Pacinian corpuscles and others. These structures detect sustained pressure, velocity, and vibrations, thereby facilitating nuanced environmental in...


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## The coarse mental map of the breast is anchored on the nipple

 Charles M  
Greenspon

 2025-09-18

 1  
min

 86  
words

TACTILE ACUITY


**Summary:** Touch plays a key role in our perception of our body and shapes our interactions with the world, from the objects we manipulate to the people we touch. While the tactile sensibility of the hand has been extensively characterized, much less is known about touch on other parts of the body. Despite the...



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# Haptic Feedback Systems for Lower-Limb Prosthetic Applications: A Review of System Design, User Experience, and Clinical Insights

 Runar  
Unnthorsson

 2025-09-27  1  
min

 65  
words


TACTILE ACUITY

**Summary:** Systems presenting haptic information have emerged as an important technological advance in assisting individuals with sensory impairments or amputations, where the aim is to enhance sensory perception or provide sensory substitution through tactile feedback. These systems provide information on lim...

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## Exploring the use of smartphone applications during navigation-based tasks for individuals who are blind or who have low vision: future directions and priorities

 Joseph Paul  
Nemargut



2025-08-25



1  
min



62  
words

**BRaille**

**Summary:** CONCLUSION: These results provide vital insights for technology developers about the perceived utility of smartphone apps for people with low vision or blindness during navigation. Our results highlight the importance of built-in accessibility features for users with visual impairments. As additiona...




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## Gradient Porous Flexible Pressure Sensors with the Relay Effect for High-Accuracy Braille-to-Speech Recognition

 Jianming  
Xu



2025-08-25



1  
min



62  
words

**BRaille**

**Summary:** The development of highly sensitive, wide linear-range flexible pressure sensors is crucial for practical applications in human-computer interaction, physiological signal detection, and motion monitoring. However, traditional flexible pressure sensors often suffer from limited compressibility in the...






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## Individual and community level factors influencing modern contraceptive use among women of reproductive age in South Africa: a multilevel analysis


 Million  
Phiri

 2025-08-26  1  
min

 46  
words

**BRaille**


**Summary:** CONCLUSION: Sensory disability status influenced women's contraceptive behaviour in South Africa. Current family planning interventions should target women with sensory disabilities by prioritising accessible communication methods (e.g., braille, sign language), disability awareness training for hea...



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## Explosion-powered eversible tactile displays

 Robert F  
Shepherd

 2025-08-27  1  
min

 64  
words

**BRaille**

**Summary:** High-resolution electronic tactile displays stand to transform haptics for remote machine operation, virtual reality, and digital information access for people who are blind or visually impaired. Yet, increasing the resolution of these displays requires increasing the number of individually addressa...


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## A Biomimetic Fiber-Entangled Permeable Electronic Skin for Strain-Insensitive and High-Resolution Tactile Sensing

 Zhijun  
Ma


 2025-08-28

 1  
min

 57  
words

[BRAILLE](#)


**Summary:** Electronic skins (e-skins) incorporating island architectures represent a promising platform for strain-insensitive tactile sensing by mechanically decoupling sensing units from deformations. However, conventional island designs encounter stress concentration issues caused by inherent modulus mismat...


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## High-Density Tactile Sensor Array for Sub-Millimeter Texture Recognition

 Min  
Zhang

 2025-08-28

 1  
min

 64  
words

[BRAILLE](#)

**Summary:** High-density tactile sensor arrays that replicate human touch could restore texture perception in paralyzed individuals. However, conventional tactile sensor arrays face inherent trade-offs between spatial resolution, sensitivity, and crosstalk suppression due to microstructure size limitations and ...

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## A Diachronic Investigation of the Change in Form and Formational-Semantic Systematicity of the Chinese Sign Language Lexicon



Hao  
Lin



2025-09-01



1  
min



72  
words

BRAILLE

**Summary:** It has been argued in previous research that several competing pressures guide the directions of language evolution (economy vs. redundancy; arbitrariness vs. systematicity). For sign languages, however, the effects of competing pressures on their change of lexical systems remain largely unclear. In...



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## Wireless Electrotactile System with Hydrogel-Based Electrodes for Conformal Tactile Interaction



Ji  
Liu



2025-09-02



1  
min



56  
words

BRAILLE

**Summary:** A wireless epidermal electrotactile interface is demonstrated through integration of skin-conformal electrodes and flexible circuitry, addressing existing limitations in haptic technology caused by mechanical mismatch and system-level integration challenges. This electrotactile system achieves low s...



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## Beyond access: rethinking assistive technology for individuals with visual impairments in Türkiye

Önder  
İşlek

17 2025-09-12

1  
min

55  
words

BRILLE

**Summary:** CONCLUSION: Despite demonstrating adaptability, individuals with VI in Türkiye face significant structural barriers to equitable AT access. Informal learning limited public support, and a lack of locally adapted tools contribute to digital exclusion. A rights-based approach-emphasizing inclusive fun...

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## High prevalence of bacterial STI, anal HPV, cytological abnormalities and anal lesions among MSM in Togo, 2021: a baseline analysis of the ANRS I MIE 12,400/DepIST-H cohort

Didier K  
Ekouevi

17 2025-09-27

1  
min

42  
words

BRILLE


**Summary:** CONCLUSIONS: These findings emphasize the high prevalence of STIs among MSM and confirm the unusual distribution of HPV types in West Africa, with HPV35 being highly prevalent. A national strategy regarding STI screening and HPV vaccination in this key population is needed.

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## Transcranial magnetic stimulation and transcranial direct current stimulation in psychiatric disorders in children and adolescents: an umbrella review of meta-analyses of clinical trials

 Andre Russowsky  
Brunoni

 17

2025-09-29

 1

min

 22

words

TDCS TACS TRNS


**Summary:** CONCLUSION: NIBS appears safe and effective to treat psychiatric disorders in children and adolescents but requires further high-quality RCTs for clinical validation.

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## An Investigation of the Effects of alpha- and beta-Frequency Neural Entrainment Using tACS on Phase-Aligned TMS-Evoked Corticospinal Excitability

 Stephen R  
Jackson

 17

2025-09-30

 1

min

 49

words

TDCS TACS TRNS


**Summary:** CONCLUSION: These findings confirm that aligning noninvasive brain stimulation to ongoing brain activity may increase the efficacy of TMS and reduce the variability of its effects. However, our results illustrate that the optimal phase of the tACS cycle at which to deliver TMS may vary for different...


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
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## Advancing pain assessment in Alzheimer's disease and related dementias: Functional near-infrared spectroscopy for investigating brain activity

 Hyochol  
Ahn

 2025-09-30

 1  
min

 58  
words

TDCS TACS TRNS

**Summary:** CONCLUSION: fNIRS demonstrated feasibility as an objective pain assessment tool in ADRD. tDCS served only as a probe to induce cortical modulation for evaluating fNIRS performance. In this study, tDCS functioned as a probe to induce cortical modulation for evaluating fNIRS sensitivity, not as a ther...

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## Preliminary evidence for high-definition transcranial direct current stimulation effects on white matter microstructure and executive function in mild cognitive impairment



Huan

Li



2025-09-30



1

min



62

words

TDCS TACS TRNS

**Summary:** CONCLUSION: The findings suggest that HD-tDCS targeting the L-DLPFC may promote microstructural remodeling in white matter tracts, evidenced by elevated fractional anisotropy within the corticospinal and anterior thalamic pathways. While global cognitive measures remained stable, a trend toward impr...



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## Stepwise interventional psychiatry approach for major depression: A case series



Jean-Philippe

Miron



2025-09-30



1

min



46

words

TDCS TACS TRNS

**Summary:** CONCLUSIONS: This case series suggests that a sequential neuromodulation strategy may increase overall response rates in TRD by capturing different responder profiles across modalities. These findings support the feasibility of a pragmatic stepwise approach and highlight the need for controlled stud...






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## On the mechanisms of epidermal stemness and differentiation

 Raghvendra  
Singh

 2025-10-01  1  
min

 70  
words

TDCS TACS TRNS


**Summary:** High Wnt and low Notch activities characterize epidermal stem cells (SCs), while low Wnt and high Notch activities characterize the terminally differentiated epidermal cells (TDCs). However, the mechanism by which transit amplifying cells (TACs) are induced to become terminally differentiated remain...


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## Effects of Transcranial Direct Current Stimulation on pain and pain-related outcomes: an umbrella review

 Dmitriy  
Viderman

 2025-10-01  1  
min

 64  
words

TDCS TACS TRNS


**Summary:** CONCLUSIONS: Our findings suggest that tDCS might be effective for fibromyalgia, migraine, and neuropathic pain associated with spinal cord injury and stroke. However, further evidence is needed for chronic orofacial pain, multiple sclerosis, knee osteoarthritis, central post-stroke pain, intra-abdo...


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## A novel machine learning-based method to quantify the effect of transcranial direct current stimulation on opioid users

 Davoud  
Ahmadi

 2025-10-01

 1  
min

 19  
words

TDCS TACS TRNS

**Summary:** CONCLUSION: These findings suggest that tDCS can be an effective intervention for reducing craving in patients with opioid addiction.


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## Quantitative analysis of [<sup>18</sup>F]CHL2310, a novel PET ligand for cholesterol 24-Hydroxylase, in nonhuman primate brain

 Lu  
Wang

 2025-10-01

 1  
min

 32  
words

TDCS TACS TRNS

**Summary:** CONCLUSION: [<sup>18</sup>F]CHL2310 shows high in vivo specificity, favorable pharmacokinetic properties, and robust quantitative performance in non-human primates. These characteristics support its potential as a PET radiotracer for imaging CYP46A1 in human studies.


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## Dissemination and Impact of a Multimodal Pain Regimen on Analgesia Prescribing at an Academic Hospital

 Avi  
Bhavaraju

 2025-10-01

 1  
min

 30  
words

TDCS TACS TRNS

**Summary:** CONCLUSIONS: Implementation of an MMP protocol by a single division can facilitate the spread of nonopioid adjunctive pain medication use and decrease opioid utilization throughout surgical specialties in a hospital.


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## Healthy Cognitive Aging Through Movement: A Practical Approach of Light-Intensity Aerobic Dance for Older Adults

 Hideaki  
Soya

 2025-09-26

 1  
min

 75  
words

FNIRS


**Summary:** Cognitive decline is a natural part of aging, though its progression varies significantly among individuals. There is a great deal of evidence showing that exercise is one of the most promising lifestyle factors that can both improve cognitive function and reduce the risk of dementia by causing mole...


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
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## Linking connectivity dynamics to symptom severity and cognitive abilities in children with autism spectrum disorder: An fNIRS study

 Yaqiong  
Xiao

 2025-09-26

 1  
min

 66  
words

**FNIRS**


**Summary:** Functional near-infrared spectroscopy (fNIRS) has emerged as a valuable tool for investigating neurobiological markers in children with autism spectrum disorder (ASD). While previous studies have identified abnormal functional connectivity in ASD children compared to typically developing (TD) peers,...


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## AI-Driven Multimodal Brain-State Decoding for Personalized Closed-Loop TENS: A Comprehensive Review

 Ping  
Shi

 2025-09-27

 1  
min

 64  
words

**FNIRS**

**Summary:** Chronic pain is a dynamic, brain-wide condition that eludes effective management by conventional, static treatment approaches. Transcutaneous Electrical Nerve Stimulation (TENS), traditionally perceived as a simple and generic modality, is on the verge of a significant transformation. Guided by adva...

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## Exploring Imagined Movement for Brain-Computer Interface Control: An fNIRS and EEG Review



Jamshed  
Iqbal



2025-09-27



1  
min



66  
words

**fNIRS**

**Summary:** Brain-Computer Interfaces (BCIs) offer a non-invasive pathway for restoring motor function, particularly for individuals with limb loss. This review explored the effectiveness of Electroencephalography (EEG) and function Near-Infrared Spectroscopy (fNIRS) in decoding Motor Imagery (MI) movements for...



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## Sex Differences in Cortical Hemodynamic Responses During Interactive and Passive Tasks: An fNIRS Study Using the Nefroball System



Aleksandra  
Rył



2025-09-27



1  
min



69  
words

**fNIRS**

**Summary:** The present study aimed to investigate sex differences in the hemodynamic response of the cerebral cortex during interactive and passive tasks using functional near-infrared spectroscopy fNIRS. Ninety-seven healthy adults (63 women, 34 men) participated in the study. Participants performed two tasks...





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## Editorial: Advanced fNIRS applications in neuroscience and neurological disorders

 Daifa Wang

 2025-09-29

 1 min

 2 words


**FNIRS**


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## Brain network evolution in late preterm to term infants: a near-infrared spectroscopy imaging study

 Yiwei Li

 2025-09-29

 1 min

 27 words

**FNIRS**


**Summary:** CONCLUSIONS: These results underscore the critical role of GA in shaping neonatal brain network functional organization and provide valuable insights for early intervention strategies in preterm infants.


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## Effectiveness and mechanism of moxibustion in treating chronic non-specific low back pain: study protocol for a multicenter randomized controlled trial

 Han  
Xiang

 2025-09-29

 1  
min

 67  
words

FNIRS

**Summary:** INTRODUCTION: Chronic non-specific low back pain (CNLBP) represents the most commonly encountered subtype of low back pain (LBP) in clinical practice. It has no clearly identified etiological factors and is prone to recurrence, which severely compromises patients' quality of life. Moxibustion therap...


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## Effects of robot assisted mirror therapy on motor function and cortical activation in patients with right hemisphere damage

 Yifan Wang


 2025-09-29

 1 min

 75 words

FNIRS

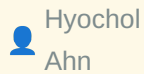
**Summary:** Robot-assisted mirror therapy (MRT) is a cutting-edge rehabilitative treatment that combines mirror therapy and rehabilitation robots and can improve stroke patient participation in rehabilitation training. The aim of this study was to investigate the effects of MRT training in patients with right-h...

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## Advancing pain assessment in Alzheimer's disease and related dementias: Functional near-infrared spectroscopy for investigating brain activity



2025-09-30

1  
min58  
words


FNIRS

**Summary:** CONCLUSION: fNIRS demonstrated feasibility as an objective pain assessment tool in ADRD. tDCS served only as a probe to induce cortical modulation for evaluating fNIRS performance. In this study, tDCS functioned as a probe to induce cortical modulation for evaluating fNIRS sensitivity, not as a ther...


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## E-Sort: empowering end-to-end neural network for multi-channel spike sorting with transfer learning and fast post-processing

 Shiwei  
Wang

 2025-09-29

 1  
min

 62  
words

BRAIN COMPUTER INTERFACE

**Summary:** OBJECTIVE: Spike sorting, which involves detecting and attributing spikes to their putative neurons from extracellular recordings, is a common process in electrophysiology and brain-computer interface systems. Recent advances in large-scale neural recording technologies are challenging the conventio...

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## Dexamethasone-loaded platelet-inspired nanoparticles improve intracortical microelectrode recording performance



Andrew J  
Shoffstall



2025-09-29



1  
min



59  
words

BRAIN COMPUTER INTERFACE

**Summary:** Long-term robust intracortical microelectrode (IME) neural recording quality is negatively affected by the neuroinflammatory response following microelectrode insertion. This adversely impacts brain-machine interface (BMI) performance for patients with neurological disorders or amputations. Recent s...



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[tbw4049Wgf\\_RdKXdtNCvGW0IVBZFpHe7zaN4k4DwoD5&fc=None&ff=20251002002223&v=2.18.0.post9+e462414](https://pubmed.ncbi.nlm.nih.gov/41022774/?utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1rSUu--tbw4049Wgf_RdKXdtNCvGW0IVBZFpHe7zaN4k4DwoD5&fc=None&ff=20251002002223&v=2.18.0.post9+e462414)

## Representation of top-down versus bottom-up attention in the right dorsolateral prefrontal cortex and superior parietal lobule

 Ling  
Li

 2025-09-30

 1  
min

 44  
words

BRAIN COMPUTER INTERFACE

**Summary:** CONCLUSIONS: These results indicate that the right DLPFC and SPL showed stronger activity and connectivity under top-down versus bottom-up attention, allowing for neural representation of visual selective attention. This study provides evidence for understanding the role of the fronto-parietal netwo...

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[tbw4049Wgf\\_RdKXdtnCvGW0lVBZFpHe7zaN4k4DwoD5&fc=None&ff=20251002002223&v=2.18.0.post9+e462414](https://pubmed.ncbi.nlm.nih.gov/41024222/?utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1rSUu--tbw4049Wgf_RdKXdtnCvGW0lVBZFpHe7zaN4k4DwoD5&fc=None&ff=20251002002223&v=2.18.0.post9+e462414)

## Innovative augmentation techniques and optimized ANN model for imagined speech decoding in EEG-based BCI



R S  
Anand



2025-09-30



1  
min



65  
words

BRAIN COMPUTER INTERFACE

**Summary:** Electroencephalogram (EEG) based Brain computer interface (BCI) emerges as a transformative technology with vast applications in neuroscience and rehabilitation. Imagined speech is the mental process of thinking and formulating words without vocalizing them through articulators. EEG signal is used t...



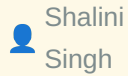
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[tbw4049Wgf\\_RdKXdtnCvGW0lVBZFpHe7zaN4k4DwoD5&fc=None&ff=20251002002223&v=2.18.0.post9+e462414](https://pubmed.ncbi.nlm.nih.gov/41025122/?utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1rSUu--tbw4049Wgf_RdKXdtnCvGW0lVBZFpHe7zaN4k4DwoD5&fc=None&ff=20251002002223&v=2.18.0.post9+e462414)

## Designing behavioural change intervention module for tobacco cessation counselling among pregnant tobacco users in India: a methodology paper



Shalini  
Singh



2025-09-30



1  
min



72  
words

BRAIN COMPUTER INTERFACE

**Summary:** Tobacco use has detrimental effects on women's reproductive health and is associated with poor pregnancy outcomes. Antenatal care (ANC) check-ups provide health professionals with a unique opportunity to screen and counsel pregnant tobacco users to quit. Currently, in India, pregnant women are not b...



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[tbw4049Wgf\\_RdKXdtNCvGW0IVBZFpHe7zaN4k4DwoD5&fc=None&ff=20251002002223&v=2.18.0.post9+e462414](https://pubmed.ncbi.nlm.nih.gov/41025886/?utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1rSUu--tbw4049Wgf_RdKXdtNCvGW0IVBZFpHe7zaN4k4DwoD5&fc=None&ff=20251002002223&v=2.18.0.post9+e462414)

## Machine learning predictions from unpredictable chaos



Guo-Wei  
Wei



2025-09-30



1  
min



68  
words

BRAIN COMPUTER INTERFACE

**Summary:** Chaos is omnipresent in nature, and its understanding provides enormous social and economic benefits. However, the unpredictability of chaotic systems is a textbook concept due to their sensitivity to initial conditions, aperiodic behaviour, fractal dimensions, nonlinearity and strange attractors. I...



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[tbw4049Wgf\\_RdKXdtNCvGW0IVBZFpHe7zaN4k4DwoD5&fc=None&ff=20251002002223&v=2.18.0.post9+e462414](https://pubmed.ncbi.nlm.nih.gov/41027482/?utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1rSUu--tbw4049Wgf_RdKXdtNCvGW0IVBZFpHe7zaN4k4DwoD5&fc=None&ff=20251002002223&v=2.18.0.post9+e462414)

## EEG-based motor execution classification of upper and lower extremities using machine learning

 Cengiz  
Tepe

 2025-10-01

 1  
min

 61  
words

BRAIN COMPUTER INTERFACE

**Summary:** This study classifies upper- and lower-extremity motor execution from electroencephalography (EEG). We compared two feature extractors, statistical features and Common Spatial Patterns (CSP), and four classifiers: K-Nearest Neighbors, Linear Discriminant Analysis (LDA), Multilayer Perceptron, and Su...


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## The Contribution of Wearable Devices and Artificial Intelligence to Promoting Healthy Aging

 Chaiyavat  
Chaiysut

 2025-10-01

 1  
min

 51  
words

BRAIN COMPUTER INTERFACE

**Summary:** CONCLUSION: The evolving landscape of wearable technologies, exemplified by Fitbit®, Acti- Graph™, and other interventions, holds substantial promise for reshaping healthcare approaches for the aging population. Addressing the limitations will be crucial as research progresses to ensure the effectiv...


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## Revolutionizing brain-computer interfaces: Compact and high-speed wireless neural signal acquisition

 Gang  
Wang

 2025-10-01

 1  
min

 64  
words

BRAIN COMPUTER INTERFACE

**Summary:** A brain-computer interface (BCI) facilitates the connection between the human brain and external devices by decoding neurophysiological signals, thereby enabling seamless interaction between humans and machines. However, existing neural signal acquisition systems often suffer from limited channel co...


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## An EEG-EMG-based Hybrid Brain-Computer Interface for Decoding Tones in Silent and Audible Speech

 Chunzhi  
Yi

 2025-10-01

 1  
min

 72  
words

BRAIN COMPUTER INTERFACE




**Summary:** Speech recognition can be widely applied to support people with language disabilities by enabling them to communicate through brain-computer interfaces (BCIs), thus improving their quality of life. Despite the essential role of tonal variations in conveying semantic meaning, there have been limited ...

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## Anatomical connectivity-based parcellation of the human orbitofrontal cortex.




 2025-07-10  1 min  222 words

BEHAVIORAL NEUROSCIENCE

**Summary:** The orbitofrontal cortex (OFC) is critical for learning and decision making, but its organization in terms of anatomical connections to other brain areas is not well understood in humans. Here we used diffusion magnetic resonance imaging and probabilistic tractography to characterize the cortical an...

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## The RAG Obituary: Killed by agents, buried by context windows

 2025-10-01  1 min  2 words

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<https://www.nicolasbustamante.com/p/the-rag-obituary-killed-by-agents>

## Neural mechanisms contributing to increased acoustic startle reactivity in *Cntnap2* knock-out rats

 1  
min

 19  
words

NEUROSCIENCE JOURNAL

**Summary:**

Publication date: 1 November 2025

Source: Neuroscience, Volume 586


Author(s): Alice Zheng, Tashfin Rahman, Parth Patel, Brian L. Allman, Susanne Schmid

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## Characterization of a rat model expressing Cre recombinase in oxytocinergic neurons: NTac:SD-Oxt<sup>em1(cre)</sup>Sage<sup>+</sup>

 1  
min

 40  
words


NEUROSCIENCE JOURNAL

**Summary:**

Publication date: 1 November 2025

Source: Neuroscience, Volume 586

Author(s): Thomas J. Martin, Conner W. Martin, Nayana Murulikanth, Renee Parker, Miriam das Dores Fonseca, Edgar Alfonso Romero-Sandoval, Christopher M. Peters, Joseph Abbott, Sara Gordon, Guojun Zhao, Douglas G...


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## Ipsilateral contraction increases map area and decreases motor threshold for contralateral hand muscle

 1  
min

 33  
words

NEUROSCIENCE JOURNAL

**Summary:**

Publication date: 1 November 2025

Source: Neuroscience, Volume 586


Author(s): Mustaali Hussain, Stevie D. Foglia, Jiyeon Park, Karishma R. Ramdeo, Faith C. Adams, Chloe C. Drapeau, Ava R. Bobinski, Michael J. Carter, Aimee J. Nelson

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## Linking dynamic connectivity states to cognitive decline and anatomical changes in Alzheimer's disease

 1  
min

 28  
words

NEUROIMAGE

**Summary:**

Publication date: 15 October 2025

Source: NeuroImage, Volume 320


Author(s): Jacopo Tessadori, Ilaria Boscolo Galazzo, Silvia F. Storti, Lorenzo Pini, Lorenza Brusini, Federica Cruciani, Diego Sona, Gloria Menegaz, Vittorio Murino

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## Multiparametric mapping of brain oxygen consumption with resting state calibrated functional MRI

 1  
min

 35  
words

NEUROIMAGE

**Summary:**

Publication date: 15 October 2025

Source: Neurolmage, Volume 320

Author(s): Antonio M. Chiarelli, Michael Germuska, Davide Di Censo, Ian Driver, Maria Eugenia Caligiuri, Hannah Thomas, Svetla Manolova, Hannah L Chandler, Alessandra Caporale, Emma Biondetti, Richard G. Wise

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## Reduced integrity of white matter fiber tracts connecting frontal and posterior sites are associated with a higher propensity to experience meaningful coincidences

 1  
min

 17  
words

NEUROIMAGE

**Summary:**

Publication date: 15 October 2025

Source: Neurolmage, Volume 320


Author(s): Christian Rominger, Karl Koschutnig, Andreas Fink, Corinna M. Perchtold-Stefan

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## Neural mechanisms of articulatory motor speech deficit in post-stroke aphasia: An ERP study

 1  
min

 14  
words

NEUROIMAGE

**Summary:**

Publication date: 15 October 2025

Source: Neurolmage, Volume 320

Author(s): Vahid Nejati, Ayoub Daliri, Roozbeh Behroozmand

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## The role of physical exercise on hippocampal volume in depressive symptoms: a systematic review and multi-level meta-analysis

 1  
min

 18  
words

NEUROIMAGE

**Summary:**

Publication date: 15 October 2025

Source: Neurolmage, Volume 320


Author(s): Florian Javelle, Judith Suhrkamp, Laura Wählen, Lars Donath, Wilhelm Bloch

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## Distinct prefrontal lateralization in placebo and reappraisal mechanisms: An ALE meta-analysis

 1  
min

 19  
words


NEUROIMAGE

**Summary:**

Publication date: 15 October 2025

Source: Neurolmage, Volume 320


Author(s): Bianca Monachesi, Elisabetta Pisanu, Daniele Chiffi, Raffaella Ida Rumiati, Alessandro Grecucci

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## An ALE meta-analysis of activation patterns in phantom limb pain: Novel insights into multisensory integration across movement tasks, facial stimulation, and pain-reducing interventions

 1  
min

 17  
words

NEUROIMAGE

**Summary:**

Publication date: 15 October 2025

Source: Neurolmage, Volume 320

Author(s): Daniël S.L. Loewenstein, Sezai Özkan, Kris Vissers, Dylan Henssen

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## Fast, slow, and metacognitive thinking in AI

 2025-10-01  1 min  0 words





NATURE NEUROSCIENCE SUBJECTS



Read full article:

<https://www.nature.com/articles/s44387-025-00027-5>

## Toward accurate single image sand dust removal by utilizing uncertainty-aware neural network

 Yixin Wang  2025-09-10  1 min  189 words

FRONTIERS NEUROBOTICS

**Summary:** Although deep learning methods have made significant strides in single image sand dust removal, the heterogeneous uncertainty induced by dusty environments poses a considerable challenge. In response, our research presents a novel framework known as the Hierarchical Interactive Uncertainty-aware Net...



Read full article:

<https://www.frontiersin.org/articles/10.3389/fnbot.2025.1575995>

## The impact of CSF-filled cavities on scalp EEG and its implications



Maria Carla  
Piastra



2024-06-14



1  
min



64  
words

OOSTENVELD ROBERT

**Summary:** Previous studies have found electroencephalogram (EEG) amplitude and scalp topography differences between neurotypical and neurological/neurosurgical groups, being interpreted at the cognitive level. However, these comparisons are invariably accompanied by anatomical changes. Critical to EEG are the...



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## Motion-BIDS: an extension to the brain imaging data structure to organize motion data for reproducible research



Julius  
Welzel



2024-07-02



1  
min



72  
words

OOSTENVELD ROBERT

**Summary:** We present an extension to the Brain Imaging Data Structure (BIDS) for motion data. Motion data is frequently recorded alongside human brain imaging and electrophysiological data. The goal of Motion-BIDS is to make motion data interoperable across different laboratories and with other data modalities...






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## One hundred years of EEG for brain and behaviour research

 Pedro Valdes-Sosa

 2024-08-22  1 min

 2 words


OOSTENVELD ROBERT



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## Freezing of gait in Parkinson's disease is related to imbalanced stopping-related cortical activity

 Richard J A van Wezel

 2024-09-04  1 min

 65 words

OOSTENVELD ROBERT

**Summary:** Freezing of gait, characterized by involuntary interruptions of walking, is a debilitating motor symptom of Parkinson's disease that restricts people's autonomy. Previous brain imaging studies investigating the mechanisms underlying freezing were restricted to scan people in supine positions and yie...


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## The past, present, and future of the brain imaging data structure (BIDS)

 Krzysztof J  
Gorgolewski

 2024-09-23

 1  
min

 82  
words

OOSTENVELD ROBERT


**Summary:** The Brain Imaging Data Structure (BIDS) is a community-driven standard for the organization of data and metadata from a growing range of neuroscience modalities. This paper is meant as a history of how the standard has developed and grown over time. We outline the principles behind the project, the ...


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## Human cortical high-gamma power scales with movement rate in healthy participants and stroke survivors

 Fanny  
Quandt

 2025-01-09

 1  
min

 65  
words

OOSTENVELD ROBERT

**Summary:** Motor cortical high-gamma oscillations (60-90 Hz) occur at movement onset and are spatially focused over the contralateral primary motor cortex. Although high-gamma oscillations are widely recognized for their significance in human motor control, their precise function on a cortical level remains el...


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## NIRS-BIDS: Brain Imaging Data Structure Extended to Near-Infrared Spectroscopy

 Luca  
Pollonini

 17 2025-01-27

 1  
min

 70  
words

OOSTENVELD ROBERT


**Summary:** Functional near-infrared spectroscopy (fNIRS) is an increasingly popular neuroimaging technique that measures cortical hemodynamic activity in a non-invasive and portable fashion. Although the fNIRS community has been successful in disseminating open-source processing tools and a standard file forma...


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## Pseudonymisation of neuroimages and data protection: Increasing access to data while retaining scientific utility

 Lyuba  
Zehl

 17 2025-06-26

 1  
min

 67  
words

OOSTENVELD ROBERT


**Summary:** For a number of years, facial features removal techniques such as 'defacing', 'skull stripping' and 'face masking/blurring', were considered adequate privacy preserving tools to openly share brain images. Scientifically, these measures were already a compromise between data protection requirements a...


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## Cycling on the Freeway: The perilous state of open-source neuroscience software

 Tim M  
Tierney

 17 2025-08-13

 1  
min

 74  
words

OOSTENVELD ROBERT


**Summary:** Most scientists need software to perform their research (Barker et al., 2020;Carver et al., 2022;Hettrick, 2014;Hettrick et al., 2014;Switters & Osimo, 2019), and neuroscientists are no exception. Whether we work with reaction times, electrophysiological signals, or magnetic resonance imaging data, ...


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## Optimal configuration of on-scalp OPMs with fixed channel counts

 Robert  
Oostenveld

 17 2025-08-13

 1  
min

 69  
words

OOSTENVELD ROBERT

**Summary:** Recent technological developments have brought optically pumped magnetometers (OPMs) within reach of the larger neuroscientific community. The current state-of-the-art consists of whole-head systems that measure the magnetic field at >100 locations. OPM sensors can be constructed to measure the fiel...

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## Case 341: Infratentorial Posterior Reversible Encephalopathy Syndrome Associated with Interferon- $\beta$ in Relapsing Multiple Sclerosis

 Joachim  
Fladt

 17

2025-09-30



1  
min



67  
words

LOW VISION


**Summary:** A 36-year-old man with known history of relapsing multiple sclerosis (RMS) of 13-year duration who was undergoing continuous treatment with subcutaneous interferon- $\beta$  (INF- $\beta$ ) (44  $\mu$ g three times per week) presented to the emergency department of our hospital with blurry vision of 1-week duration. Rout...

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## Causes of Visual Impairment and Blindness in a Clinic Population from Puerto Rico

 Claudia Colón-  
Sanchez

 17

2025-09-30



1  
min



56  
words

LOW VISION

**Summary:** CONCLUSION: This study provided insights into the causes of VI and blindness in Puerto Rico. These findings underscore the need for targeted interventions and public health initiatives to improve accessibility to visual rehabilitation. Further research is warranted to explore additional factors infl...

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## User cum expert judgement model for accessibility using fuzzy approach



Satinder  
Kaur



2025-09-30



1  
min



70  
words

LOW VISION

**Summary:** Well-designed websites play a pivotal role in technological innovation by improving accessibility, user interaction and digital inclusivity. It is crucial to evaluate website accessibility as it meets the diverse needs of its users and adheres to legal and ethical standards. Significant research has...



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## Optimizing retinal images based carotid atherosclerosis prediction with explainable foundation models



Jooyoung  
Chang



2025-09-30



1  
min



65  
words

LOW VISION

**Summary:** Carotid atherosclerosis is a key predictor of cardiovascular disease (CVD), necessitating early detection. While foundation models (FMs) show promise in medical imaging, their optimal selection and fine-tuning strategies for classifying carotid atherosclerosis from retinal images remain unclear. Usi...





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
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## The efficacy and safety of herbal medicines for glycaemic control and insulin resistance in individuals with type 2 diabetes: an umbrella review

 Carolyn  
Ee

 2025-10-01

 1  
min

 70  
words

LOW VISION


**Summary:** CONCLUSIONS: Current evidence supports the use of ginger and turmeric for glycaemic control in type 2 diabetes, however, given the high clinical heterogeneity and low quality of the review, our confidence in this finding is somewhat limited. Herbal medicines should be used only as an adjunct to conv...


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## Development of an embedded diagnostic tool for visual misalignment screening

 Ruthber Rodriguez  
Serrezuela

 2025-10-01

 1  
min

 70  
words

LOW VISION

**Summary:** This article presents the design, implementation, and validation of a low-cost embedded system for preliminary strabismus screening, based on computer vision and deep learning. The hardware integrates a Raspberry Pi 4, a USB camera, and a 3D-printed chin rest to ensure consistent facial positioning....

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## Swin-YOLO-SAM: a hybrid Transformer-based framework integrating Swin Transformer, YOLOv12, and SAM-2.1 for automated identification and segmentation of date palm leaf diseases



Ghassan  
Husnain



2025-10-01



1  
min



68  
words

LOW VISION

**Summary:** The cultivation of date palm (*Phoenix dactylifera* L.) is acutely impacted by numerous fungal, bacterial, and pest-related diseases that diminish yield, spoil fruit quality, and undermine long-term agricultural sustainability. The traditional methods of monitoring diseases, which rely heavily on expe...



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## Chronic endometritis diagnosis and fertility outcomes: an old unresolved question



Yohann  
Dabi



2025-10-01



1  
min



67  
words

LOW VISION

**Summary:** ABSTRACT: Chronic endometritis, defined by chronic inflammation of the endometrium, remains a clinical and biologic challenge even using hysteroscopy allowing a direct vision of the uterine cavity without anesthesia, and conventional histology using Hematoxylin and Eosin staining. Our primary object...



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## DTL: Parameter- and Memory-Efficient Disentangled Vision Learning



Jianxin  
Wu



2025-10-01



1  
min



77  
words

LOW VISION

**Summary:** The cost of finetuning a pretrained model on downstream tasks steadily increases as they grow larger. Parameter-efficient transfer learning (PETL) is proposed to reduce this cost by changing only a tiny subset of trainable parameters. But, the GPU memory footprint during training is not effectively ...



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## Exploring Vision-Based Active 3D Object Detection by Informativeness Characterization



Xi

Li



2025-10-01



1

min



76

words

LOW VISION

**Summary:** Vision-based 3D object detection (3DOD) gains lots of attention due to its low cost for deployment compared to Lidar-based tasks, while it suffers from labor-expensive data annotations. At the same time, active learning (AL) has shown great potential in reducing annotation costs in related tasks, wh...



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## The taste of trigeminal sensations: relation between taste, lingual tactile acuity, and spicy perception in patients with taste dysfunction



Thomas

Hummel



2025-05-28



1

min



70

words

TACTILE ACUITY

**Summary:** In the oral cavity, oral stereognosis and chemesthesis refer to the abilities to recognize shapes and detect noxious substances, respectively, through various receptors distributed on the tongue. The absence of standardized methods to assess oral somatosensory perception has led to a lack of consens...




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## Measuring the Distribution of Tactile Acuity at the Index Finger and Thumb Fingertips

 Hiroyuki  
Kajimoto


 2025-06-17

 1  
min

 75  
words

TACTILE ACUITY

**Summary:** In our day-to-day activities, we utilize not only the pads of our fingers but also the sides and hemispherical tips when manipulating objects. For teleoperation systems to replicate these real-life interactions, tactile sensation must be presented and distributed across the entire fingertip. Thus, u...


 Read full article:

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## Optimizing Vibrotactile Feedback for Sensory Substitution in the Thigh: Spatial Acuity and Frequency Characteristics

 Leah R  
Bent

 2025-06-27

 1  
min

 69  
words

TACTILE ACUITY


**Summary:** Amputation of a lower limb not only affects mobility but also interferes with sensory feedback, leading to an elevated risk of falls among individuals living with amputation. Sensory substitution, achieved through tactile displays embedded in transfemoral prosthetic sockets, presents a promising non...


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## Directional vibro-tactile hazard warnings for drivers with vision impairments

 Alex R  
Bowers

 2025-07-02

 1  
min

 80  
words

TACTILE ACUITY


**Summary:** Vision impairment may delay responses to hazards when driving. In a proof-of-concept driving simulator study, we evaluated a hazard warning device designed for vision impaired drivers. Three groups participated: 11 persons with central vision loss (CVL; median age 60 years), 12 with homonymous field...


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## Sensitivity and vagal reactivity to C-tactile-mediated affective touch in mild cognitive impairment due to Alzheimer's disease

 Cecilia  
Guariglia

 2025-08-01

 1  
min

 64  
words

TACTILE ACUITY

**Summary:** BackgroundC-tactile (CT) afferents preferentially activate in response to slow caress-like touch, evoking a diffuse pleasant sensation and promoting autonomic regulation. According to Braak's classic model, the neurodegenerative process in Alzheimer's disease (AD) only affects somatosensory cortices...


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## Differences in tactile grid localization accuracy between people with back pain compared to individuals without pain

 Eric  
Fjeldheim


 17 2025-08-24

 1  
min

 22  
words

TACTILE ACUITY


**Summary:** OBJECTIVES: The study aimed to investigate the grid localization test (GLT) between patients with lower back pain and those without back pain.


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## Eye Drop Instillation Success and Hand Function in Adults with Glaucoma: A Pilot Study

 Paula Anne Newman-  
Casey

 17 2025-09-09

 1  
min

 74  
words

TACTILE ACUITY


**Summary:** CONCLUSIONS: Despite hand function deficits, in this exploratory pilot study, adults with glaucoma demonstrated eye drop instillation success comparable to those without glaucoma, though with higher rates of bottle tip contact with the eye, skin, or eyelashes, suggesting an increased risk of potenti...


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## Functional evidence for early origin of tactile acuity in the vertebrate somatosensory system

 Sviatoslav N  
Bagriantsev

 2025-09-13

 1  
min

 58  
words

TACTILE ACUITY


**Summary:** Mammals and reptiles possess a sophisticated somatosensory system for precise tactile discrimination via mechanosensory end-organs, such as Meissner and Pacinian corpuscles and others. These structures detect sustained pressure, velocity, and vibrations, thereby facilitating nuanced environmental in...


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## The coarse mental map of the breast is anchored on the nipple

 Charles M  
Greenspon


 2025-09-18

 1  
min

 86  
words

TACTILE ACUITY


**Summary:** Touch plays a key role in our perception of our body and shapes our interactions with the world, from the objects we manipulate to the people we touch. While the tactile sensibility of the hand has been extensively characterized, much less is known about touch on other parts of the body. Despite the...



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# Haptic Feedback Systems for Lower-Limb Prosthetic Applications: A Review of System Design, User Experience, and Clinical Insights

 Runar  
Unnthorsson

 2025-09-27  1  
min

 65  
words


TACTILE ACUITY

**Summary:** Systems presenting haptic information have emerged as an important technological advance in assisting individuals with sensory impairments or amputations, where the aim is to enhance sensory perception or provide sensory substitution through tactile feedback. These systems provide information on lim...

 **Read full article:**

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## Exploring the use of smartphone applications during navigation-based tasks for individuals who are blind or who have low vision: future directions and priorities

 Joseph Paul  
Nemargut

 2025-08-25  1 min  62 words


**BRaille**




**Summary:** CONCLUSION: These results provide vital insights for technology developers about the perceived utility of smartphone apps for people with low vision or blindness during navigation. Our results highlight the importance of built-in accessibility features for users with visual impairments. As additiona...

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## Gradient Porous Flexible Pressure Sensors with the Relay Effect for High-Accuracy Braille-to-Speech Recognition

 Jianming  
Xu

 2025-08-25  1 min  62 words

**BRaille**



**Summary:** The development of highly sensitive, wide linear-range flexible pressure sensors is crucial for practical applications in human-computer interaction, physiological signal detection, and motion monitoring. However, traditional flexible pressure sensors often suffer from limited compressibility in the...


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## Individual and community level factors influencing modern contraceptive use among women of reproductive age in South Africa: a multilevel analysis

 Million  
Phiri

 2025-08-26  1  
min

 46  
words

**BRaille**


**Summary:** CONCLUSION: Sensory disability status influenced women's contraceptive behaviour in South Africa. Current family planning interventions should target women with sensory disabilities by prioritising accessible communication methods (e.g., braille, sign language), disability awareness training for hea...



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## Explosion-powered eversible tactile displays

 Robert F  
Shepherd

 2025-08-27  1  
min

 64  
words

**BRaille**


**Summary:** High-resolution electronic tactile displays stand to transform haptics for remote machine operation, virtual reality, and digital information access for people who are blind or visually impaired. Yet, increasing the resolution of these displays requires increasing the number of individually addressa...

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## A Biomimetic Fiber-Entangled Permeable Electronic Skin for Strain-Insensitive and High-Resolution Tactile Sensing

 Zhijun  
Ma

 2025-08-28

 1  
min

 57  
words

[BRAILLE](#)


**Summary:** Electronic skins (e-skins) incorporating island architectures represent a promising platform for strain-insensitive tactile sensing by mechanically decoupling sensing units from deformations. However, conventional island designs encounter stress concentration issues caused by inherent modulus mismat...


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## High-Density Tactile Sensor Array for Sub-Millimeter Texture Recognition

 Min  
Zhang

 2025-08-28

 1  
min

 64  
words

[BRAILLE](#)

**Summary:** High-density tactile sensor arrays that replicate human touch could restore texture perception in paralyzed individuals. However, conventional tactile sensor arrays face inherent trade-offs between spatial resolution, sensitivity, and crosstalk suppression due to microstructure size limitations and ...

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## A Diachronic Investigation of the Change in Form and Formational-Semantic Systematicity of the Chinese Sign Language Lexicon



Hao  
Lin



2025-09-01



1  
min



72  
words

BRAILLE

**Summary:** It has been argued in previous research that several competing pressures guide the directions of language evolution (economy vs. redundancy; arbitrariness vs. systematicity). For sign languages, however, the effects of competing pressures on their change of lexical systems remain largely unclear. In...



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## Wireless Electrotactile System with Hydrogel-Based Electrodes for Conformal Tactile Interaction



Ji  
Liu



2025-09-02



1  
min



56  
words

BRAILLE

**Summary:** A wireless epidermal electrotactile interface is demonstrated through integration of skin-conformal electrodes and flexible circuitry, addressing existing limitations in haptic technology caused by mechanical mismatch and system-level integration challenges. This electrotactile system achieves low s...

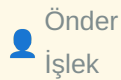


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## Beyond access: rethinking assistive technology for individuals with visual impairments in Türkiye



Önder

İşlek



2025-09-12



1

min



55

words

BRILLE

**Summary:** CONCLUSION: Despite demonstrating adaptability, individuals with VI in Türkiye face significant structural barriers to equitable AT access. Informal learning limited public support, and a lack of locally adapted tools contribute to digital exclusion. A rights-based approach-emphasizing inclusive fun...



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[utm\\_source=BucketBot&utm\\_medium=rss&utm\\_campaign=None&utm\\_content=165yO28ehHLjXJb8W3JvTx2bYozdDe8lvyFRBIOfHZxFR8o1uX&fc=None&ff=20251001234803&v=2.18.0.post9+e462414](https://pubmed.ncbi.nlm.nih.gov/40937808/?utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=165yO28ehHLjXJb8W3JvTx2bYozdDe8lvyFRBIOfHZxFR8o1uX&fc=None&ff=20251001234803&v=2.18.0.post9+e462414)

## High prevalence of bacterial STI, anal HPV, cytological abnormalities and anal lesions among MSM in Togo, 2021: a baseline analysis of the ANRS I MIE 12,400/DepIST-H cohort



Didier K

Ekouevi



2025-09-27



1

min



42

words

BRILLE


**Summary:** CONCLUSIONS: These findings emphasize the high prevalence of STIs among MSM and confirm the unusual distribution of HPV types in West Africa, with HPV35 being highly prevalent. A national strategy regarding STI screening and HPV vaccination in this key population is needed.



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## Transcranial magnetic stimulation and transcranial direct current stimulation in psychiatric disorders in children and adolescents: an umbrella review of meta-analyses of clinical trials

 Andre Russowsky  
Brunoni

 17

2025-09-29

 1

min

 22

words

TDCS TACS TRNS


**Summary:** CONCLUSION: NIBS appears safe and effective to treat psychiatric disorders in children and adolescents but requires further high-quality RCTs for clinical validation.

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## An Investigation of the Effects of alpha- and beta-Frequency Neural Entrainment Using tACS on Phase-Aligned TMS-Evoked Corticospinal Excitability

 Stephen R  
Jackson

 17

2025-09-30

 1

min

 49

words

TDCS TACS TRNS


**Summary:** CONCLUSION: These findings confirm that aligning noninvasive brain stimulation to ongoing brain activity may increase the efficacy of TMS and reduce the variability of its effects. However, our results illustrate that the optimal phase of the tACS cycle at which to deliver TMS may vary for different...


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## Advancing pain assessment in Alzheimer's disease and related dementias: Functional near-infrared spectroscopy for investigating brain activity

 Hyochol  
Ahn


 2025-09-30

 1  
min

 58  
words

TDCS TACS TRNS

**Summary:** CONCLUSION: fNIRS demonstrated feasibility as an objective pain assessment tool in ADRD. tDCS served only as a probe to induce cortical modulation for evaluating fNIRS performance. In this study, tDCS functioned as a probe to induce cortical modulation for evaluating fNIRS sensitivity, not as a ther...

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## Preliminary evidence for high-definition transcranial direct current stimulation effects on white matter microstructure and executive function in mild cognitive impairment



Huan

Li



2025-09-30



1

min



62

words

TDCS TACS TRNS

**Summary:** CONCLUSION: The findings suggest that HD-tDCS targeting the L-DLPFC may promote microstructural remodeling in white matter tracts, evidenced by elevated fractional anisotropy within the corticospinal and anterior thalamic pathways. While global cognitive measures remained stable, a trend toward impr...



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## Stepwise interventional psychiatry approach for major depression: A case series



Jean-Philippe

Miron



2025-09-30



1

min



46

words

TDCS TACS TRNS

**Summary:** CONCLUSIONS: This case series suggests that a sequential neuromodulation strategy may increase overall response rates in TRD by capturing different responder profiles across modalities. These findings support the feasibility of a pragmatic stepwise approach and highlight the need for controlled stud...






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[utm\\_source=BucketBot&utm\\_medium=rss&utm\\_campaign=None&utm\\_content=143rKCPgMwbasrj66gQ1r1ebioUg42SIGRyVKSoW4m6X-ecQ00&fc=None&ff=20251001234800&v=2.18.0.post9+e462414](https://pubmed.ncbi.nlm.nih.gov/41027319/?utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=143rKCPgMwbasrj66gQ1r1ebioUg42SIGRyVKSoW4m6X-ecQ00&fc=None&ff=20251001234800&v=2.18.0.post9+e462414)

## On the mechanisms of epidermal stemness and differentiation

 Raghvendra  
Singh

 2025-10-01  1  
min

 70  
words

TDCS TACS TRNS


**Summary:** High Wnt and low Notch activities characterize epidermal stem cells (SCs), while low Wnt and high Notch activities characterize the terminally differentiated epidermal cells (TDCs). However, the mechanism by which transit amplifying cells (TACs) are induced to become terminally differentiated remain...

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## Effects of Transcranial Direct Current Stimulation on pain and pain-related outcomes: an umbrella review

 Dmitriy  
Viderman

 2025-10-01  1  
min

 64  
words

TDCS TACS TRNS


**Summary:** CONCLUSIONS: Our findings suggest that tDCS might be effective for fibromyalgia, migraine, and neuropathic pain associated with spinal cord injury and stroke. However, further evidence is needed for chronic orofacial pain, multiple sclerosis, knee osteoarthritis, central post-stroke pain, intra-abdo...


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## A novel machine learning-based method to quantify the effect of transcranial direct current stimulation on opioid users

 Davoud  
Ahmadi

 2025-10-01

 1  
min

 19  
words

TDCS TACS TRNS

**Summary:** CONCLUSION: These findings suggest that tDCS can be an effective intervention for reducing craving in patients with opioid addiction.


 Read full article:

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## Quantitative analysis of [<sup>18</sup>F]CHL2310, a novel PET ligand for cholesterol 24-Hydroxylase, in nonhuman primate brain

 Lu  
Wang

 2025-10-01

 1  
min

 32  
words

TDCS TACS TRNS


**Summary:** CONCLUSION: [<sup>18</sup>F]CHL2310 shows high in vivo specificity, favorable pharmacokinetic properties, and robust quantitative performance in non-human primates. These characteristics support its potential as a PET radiotracer for imaging CYP46A1 in human studies.


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## Dissemination and Impact of a Multimodal Pain Regimen on Analgesia Prescribing at an Academic Hospital

 Avi  
Bhavaraju


 2025-10-01

 1  
min

 30  
words

TDCS TACS TRNS

**Summary:** CONCLUSIONS: Implementation of an MMP protocol by a single division can facilitate the spread of nonopioid adjunctive pain medication use and decrease opioid utilization throughout surgical specialties in a hospital.


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## Healthy Cognitive Aging Through Movement: A Practical Approach of Light-Intensity Aerobic Dance for Older Adults

 Hideaki  
Soya

 2025-09-26

 1  
min

 75  
words

FNIRS

**Summary:** Cognitive decline is a natural part of aging, though its progression varies significantly among individuals. There is a great deal of evidence showing that exercise is one of the most promising lifestyle factors that can both improve cognitive function and reduce the risk of dementia by causing mole...


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## Linking connectivity dynamics to symptom severity and cognitive abilities in children with autism spectrum disorder: An fNIRS study

 Yaqiong  
Xiao

 2025-09-26

 1  
min

 66  
words

**FNIRS**


**Summary:** Functional near-infrared spectroscopy (fNIRS) has emerged as a valuable tool for investigating neurobiological markers in children with autism spectrum disorder (ASD). While previous studies have identified abnormal functional connectivity in ASD children compared to typically developing (TD) peers,...


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## AI-Driven Multimodal Brain-State Decoding for Personalized Closed-Loop TENS: A Comprehensive Review

 Ping  
Shi

 2025-09-27

 1  
min

 64  
words

**FNIRS**

**Summary:** Chronic pain is a dynamic, brain-wide condition that eludes effective management by conventional, static treatment approaches. Transcutaneous Electrical Nerve Stimulation (TENS), traditionally perceived as a simple and generic modality, is on the verge of a significant transformation. Guided by adva...

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## Exploring Imagined Movement for Brain-Computer Interface Control: An fNIRS and EEG Review



Jamshed  
Iqbal



2025-09-27



1  
min



66  
words

**fNIRS**

**Summary:** Brain-Computer Interfaces (BCIs) offer a non-invasive pathway for restoring motor function, particularly for individuals with limb loss. This review explored the effectiveness of Electroencephalography (EEG) and function Near-Infrared Spectroscopy (fNIRS) in decoding Motor Imagery (MI) movements for...



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## Sex Differences in Cortical Hemodynamic Responses During Interactive and Passive Tasks: An fNIRS Study Using the Nefroball System



Aleksandra  
Rył



2025-09-27



1  
min



69  
words

**fNIRS**

**Summary:** The present study aimed to investigate sex differences in the hemodynamic response of the cerebral cortex during interactive and passive tasks using functional near-infrared spectroscopy fNIRS. Ninety-seven healthy adults (63 women, 34 men) participated in the study. Participants performed two tasks...





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## Editorial: Advanced fNIRS applications in neuroscience and neurological disorders

 Daifa  
Wang

 2025-09-29

 1  
min

 2  
words


**FNIRS**


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## Brain network evolution in late preterm to term infants: a near-infrared spectroscopy imaging study

 Yiwei  
Li

 2025-09-29

 1  
min

 27  
words

**FNIRS**


**Summary:** CONCLUSIONS: These results underscore the critical role of GA in shaping neonatal brain network functional organization and provide valuable insights for early intervention strategies in preterm infants.


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## Effectiveness and mechanism of moxibustion in treating chronic non-specific low back pain: study protocol for a multicenter randomized controlled trial

 Han  
Xiang


 2025-09-29

 1  
min

 67  
words

FNIRS

**Summary:** INTRODUCTION: Chronic non-specific low back pain (CNLBP) represents the most commonly encountered subtype of low back pain (LBP) in clinical practice. It has no clearly identified etiological factors and is prone to recurrence, which severely compromises patients' quality of life. Moxibustion therap...


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## Effects of robot assisted mirror therapy on motor function and cortical activation in patients with right hemisphere damage

 Yifan Wang

 2025-09-29

 1 min

 75 words

FNIRS


**Summary:** Robot-assisted mirror therapy (MRT) is a cutting-edge rehabilitative treatment that combines mirror therapy and rehabilitation robots and can improve stroke patient participation in rehabilitation training. The aim of this study was to investigate the effects of MRT training in patients with right-h...


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## Advancing pain assessment in Alzheimer's disease and related dementias: Functional near-infrared spectroscopy for investigating brain activity

 Hyochol  
Ahn


 17 2025-09-30

 1  
min

 58  
words

**FNIRS**

**Summary:** CONCLUSION: fNIRS demonstrated feasibility as an objective pain assessment tool in ADRD. tDCS served only as a probe to induce cortical modulation for evaluating fNIRS performance. In this study, tDCS functioned as a probe to induce cortical modulation for evaluating fNIRS sensitivity, not as a ther...


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## E-Sort: empowering end-to-end neural network for multi-channel spike sorting with transfer learning and fast post-processing

 Shiwei Wang


 2025-09-29

 1 min

 62 words

BRAIN COMPUTER INTERFACE

**Summary:** OBJECTIVE: Spike sorting, which involves detecting and attributing spikes to their putative neurons from extracellular recordings, is a common process in electrophysiology and brain-computer interface systems. Recent advances in large-scale neural recording technologies are challenging the conventio...

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## Dexamethasone-loaded platelet-inspired nanoparticles improve intracortical microelectrode recording performance



Andrew J  
Shoffstall



2025-09-29



1  
min



59  
words

BRAIN COMPUTER INTERFACE

**Summary:** Long-term robust intracortical microelectrode (IME) neural recording quality is negatively affected by the neuroinflammatory response following microelectrode insertion. This adversely impacts brain-machine interface (BMI) performance for patients with neurological disorders or amputations. Recent s...



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## Representation of top-down versus bottom-up attention in the right dorsolateral prefrontal cortex and superior parietal lobule

 Ling  
Li

 2025-09-30

 1  
min

 44  
words

BRAIN COMPUTER INTERFACE

**Summary:** CONCLUSIONS: These results indicate that the right DLPFC and SPL showed stronger activity and connectivity under top-down versus bottom-up attention, allowing for neural representation of visual selective attention. This study provides evidence for understanding the role of the fronto-parietal netwo...

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## Innovative augmentation techniques and optimized ANN model for imagined speech decoding in EEG-based BCI

 R S  
Anand

 2025-09-30

 1  
min

 65  
words

BRAIN COMPUTER INTERFACE

**Summary:** Electroencephalogram (EEG) based Brain computer interface (BCI) emerges as a transformative technology with vast applications in neuroscience and rehabilitation. Imagined speech is the mental process of thinking and formulating words without vocalizing them through articulators. EEG signal is used t...

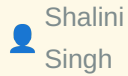
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## Designing behavioural change intervention module for tobacco cessation counselling among pregnant tobacco users in India: a methodology paper



Shalini  
Singh



2025-09-30



1  
min



72  
words

BRAIN COMPUTER INTERFACE

**Summary:** Tobacco use has detrimental effects on women's reproductive health and is associated with poor pregnancy outcomes. Antenatal care (ANC) check-ups provide health professionals with a unique opportunity to screen and counsel pregnant tobacco users to quit. Currently, in India, pregnant women are not b...



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## Machine learning predictions from unpredictable chaos



Guo-Wei  
Wei



2025-09-30



1  
min



68  
words

BRAIN COMPUTER INTERFACE

**Summary:** Chaos is omnipresent in nature, and its understanding provides enormous social and economic benefits. However, the unpredictability of chaotic systems is a textbook concept due to their sensitivity to initial conditions, aperiodic behaviour, fractal dimensions, nonlinearity and strange attractors. I...



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## EEG-based motor execution classification of upper and lower extremities using machine learning

 Cengiz  
Tepe

 2025-10-01

 1  
min

 61  
words

BRAIN COMPUTER INTERFACE

**Summary:** This study classifies upper- and lower-extremity motor execution from electroencephalography (EEG). We compared two feature extractors, statistical features and Common Spatial Patterns (CSP), and four classifiers: K-Nearest Neighbors, Linear Discriminant Analysis (LDA), Multilayer Perceptron, and Su...


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## The Contribution of Wearable Devices and Artificial Intelligence to Promoting Healthy Aging

 Chaiyavat  
Chaiysut

 2025-10-01

 1  
min

 51  
words

BRAIN COMPUTER INTERFACE

**Summary:** CONCLUSION: The evolving landscape of wearable technologies, exemplified by Fitbit®, Acti- Graph™, and other interventions, holds substantial promise for reshaping healthcare approaches for the aging population. Addressing the limitations will be crucial as research progresses to ensure the effectiv...


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## Revolutionizing brain-computer interfaces: Compact and high-speed wireless neural signal acquisition

 Gang  
Wang

 2025-10-01

 1  
min

 64  
words

BRAIN COMPUTER INTERFACE

**Summary:** A brain-computer interface (BCI) facilitates the connection between the human brain and external devices by decoding neurophysiological signals, thereby enabling seamless interaction between humans and machines. However, existing neural signal acquisition systems often suffer from limited channel co...

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## An EEG-EMG-based Hybrid Brain-Computer Interface for Decoding Tones in Silent and Audible Speech

 Chunzhi  
Yi

 2025-10-01

 1  
min

 72  
words

BRAIN COMPUTER INTERFACE

**Summary:** Speech recognition can be widely applied to support people with language disabilities by enabling them to communicate through brain-computer interfaces (BCIs), thus improving their quality of life. Despite the essential role of tonal variations in conveying semantic meaning, there have been limited ...

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## Early contingency information enhances human punishment sensitivity when punishment is frequent but not rare.



2025-07-10

1  
min155  
words

BEHAVIORAL NEUROSCIENCE

**Summary:** Individuals differ in sensitivity to the adverse consequences of their actions. We have shown that these differences can be linked to differences in correctly learning causal relationships between actions and their negative consequences. To further assess this, here we used a conditioned punishment ...



Read full article:

<http://doi.org/10.1037/bne0000627>

## Deep brain stimulation of nucleus basalis of meynert: Effect of stimulation mode and duration on learning in rat model of dementia.



2025-06-09

1  
min273  
words

BEHAVIORAL NEUROSCIENCE

**Summary:** Deep brain stimulation (DBS) of the nucleus basalis of Meynert (NBM) has been preliminarily investigated as a potential treatment for dementia. The degeneration of NBM cholinergic neurons is a pathological feature of many forms of dementia. Although NBM stimulation has been demonstrated to improve l...



Read full article:

<http://doi.org/10.1037/bne0000625>

## Influence of context on extinguished appetitive conditioning in male and female rats.



2025-05-15

1  
min230  
words

BEHAVIORAL NEUROSCIENCE

**Summary:** Extinction is fundamental to adaptive behavior in that it allows organisms to alter previously conditioned behaviors based on the prevailing environmental contingencies. Extinguished responses, however, will renew when the conditioned stimulus is presented outside the extinction context. There has b...



Read full article:

<http://doi.org/10.1037/bne0000626>

## Gonadectomy maintains goal-directed responding in female rats and accelerates habit formation in male rats.



2025-04-07

1  
min271  
words

BEHAVIORAL NEUROSCIENCE

**Summary:** We have previously demonstrated that gonadally intact female rats become habitual following around 120 response–outcome (R-Os) exposures during operant training. This rapid development of habit does not occur in gonadally intact male rats, which remain goal-directed up to at least 320 R-Os. The pres...



Read full article:

<http://doi.org/10.1037/bne0000622>

## Monthly Updates [April]

17

2025-04-01

2

min

555

words

FMHY

**Summary:**

INFO

These update threads only contains major updates. If you're interested in seeing all minor changes you can follow our [Commits Page](https://github.com/fmhy/FMHYedit/commits/main) on ...

 **Read full article:**  
<https://fmhy.net/posts/april-2025>

## The Internet Archive needs your help.

17

2025-04-21

1

min

181

words

FMHY

**Summary:**

A coalition of major record labels has filed a lawsuit against the Internet Archive—demanding **\$700 million** for our work preserving and providing access to historical 78rpm records. These fragile, obsolete discs hold some of the earliest recordings of a vanishing American culture....

 **Read full article:**  
<https://fmhy.net/posts/support-ia>



## Monthly Updates [May]

17

2025-05-01

3

min

704

words

FMHY

**Summary:**

INFO

These update threads only contains major updates. If you're interested in seeing all minor changes you can follow our [Commits Page](https://github.com/fmhy/FMHYedit/commits/main) on ...

 **Read full article:**  
<https://fmhy.net/posts/may-2025>

## Monthly Updates [June]

17

2025-06-01

3

min

761

words

FMHY

**Summary:**

INFO

These update threads only contains major updates. If you're interested in seeing all minor changes you can follow our [Commits Page](https://github.com/fmhy/FMHYedit/commits/main) on ...

 **Read full article:**  
<https://fmhy.net/posts/june-2025>

## Monthly Updates [July]

17

2025-07-01

3

min

749

words

FMHY

**Summary:**

INFO

These update threads only contains major updates. If you're interested in seeing all minor changes you can follow our [Commits Page](https://github.com/fmhy/FMHYedit/commits/main) on ...

 **Read full article:**  
<https://fmhy.net/posts/july-2025>

## Monthly Updates [August]

17

2025-08-01

4

min

858

words

FMHY



**Summary:**

INFO

These update threads only contains major updates. If you're interested in seeing all minor changes you can follow our [Commits Page](https://github.com/fmhy/FMHYedit/commits/main) on ...

 **Read full article:**  
<https://fmhy.net/posts/aug-2025>

## Monthly Updates [Sept]




 2025-08-31  2 min  569 words

[FMHY](#)

**Summary:** **INFO**  
These update threads only contains major updates. If you're interested in seeing all minor changes you can follow our [Commits Page](https://github.com/fmhy/FMHYedit/commits/main) on ...

 **Read full article:**  
<https://fmhy.net/posts/sept-2025>

## Fight Chat Control


 2025-09-04  1 min  153 words

[FMHY](#)

**Summary:**

### The EU (still) wants to scan your private messages and photos.

  
The "Chat Control" proposal would mand...

 **Read full article:**  
<https://fmhy.net/posts/FCC>

## Education: References



Adriel  
Carridice



2025-02-13



1  
min



61  
words

BRAIN

**Summary:** [1] OECD "Neurotechnology Toolkit To support policymakers in implementing the OECD Recommendation on Responsible Innovation in Neurotechnology," 2024.: <https://www.oecd.org/content/dam/oecd/en/topics/policy-sub-issues/emerging-technologies/neurotech-toolkit.pdf>. [2] van Kesteren and Meeter, 2020 htt...



Read full article:

<https://brain.ieee.org/publications/neuroethics-framework/education/references/education-references/>

## IEEE Brain Annual Flagship Workshop a Success



ieebrain



2025-03-03



1  
min



61  
words

BRAIN





**Summary:** IEEE Brain once again hosted the IEEE Brain Discovery and Neurotechnology Workshop as a satellite event to the 2024 Society of Neuroscience Workshop (SfN). Approximately 180 attended the two-day event, which was held at the University of Illinois Chicago (UIC), October 3-4, 2024 (Figure 1). Groundbr...



Read full article:

<https://brain.ieee.org/braininsight-articles/ieee-brain-annual-flagship-workshop-a-success/>

## IEEE Brain Workshop on AI for Neurotechnology






 ieeebrain  2025-03-03  1 min  61 words 

**Summary:** The IEEE Brain Workshop on AI for Neurotechnology was held on June 30, 2024, at the Pacifico Yokohama Conference Center in Japan. This event was part of the World Congress on Computational Intelligence (WCCI 2024) and was conducted in association with the International Joint Conference on Neural Net...

 Read full article:

<https://brain.ieee.org/braininsight-articles/ieee-brain-workshop-on-ai-for-neurotechnology/>

## Call for Papers: IEEE Brain Special Issue

 ieeebrain  2025-03-03  1 min  36 words 

**Summary:** In a unique interdisciplinary collaboration with the IEEE's Society on Social Implications of Technology (SSIT) and IEEE Brain, J-FLEX is joining forces to explore both the technology of the Internet-of-Medical-Things (IoMT) solutions and medical wearables/implantables. &#160;

 Read full article:

<https://brain.ieee.org/braininsight-articles/ieee-journal-on-flexible-electronics/>

## IEEE Brain Joins the American Brain Coalition





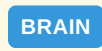
 ieeebrian  2025-03-03  1 min  61 words 

**Summary:** IEEE Brain is pleased to announce its acceptance as a nonprofit member of the American Brain Coalition (ABC), a prestigious alliance of over 150 organizations dedicated to advancing brain research, advocacy, and improving treatments for individuals affected by brain conditions. The ABC Board has ent...


 **Read full article:**

<https://brain.ieee.org/braininsight-articles/ieee-brain-joins-the-american-brain-coalition-as-a-nonprofit-member/>

## Call for Papers: IEEE Transactions on Human-Machine Systems




 Adriel Carridice  2025-06-18  1 min  61 words 

**Summary:** Special Issue on Brain Discovery and Neurotechnology: Featured Research from 2024 IEEE Brain Discovery & Neurotechnology Workshop & This special issue is motivated by the success of the IEEE Brain Discovery and Neurotechnology Workshop held in October 2024. This annual workshop is sponsore...

 **Read full article:**

<https://brain.ieee.org/braininsight-articles/call-for-papers-ieee-transactions-on-human-machine-systems/>

## Evaluation on Human Perception of Various Vibrotactile Encoding Methods Through a High Density Haptic Feedback Interface

 2025-05-09  1 min  197 words

TRANSACTIONS HAPTICS

**Summary:** High density (HD) haptic interfaces have become increasingly common for entertainment thanks to advancements in virtual reality technology, however their flexibility may make them a useful sensory substitution interface for motor rehabilitation. Yet little research has explored how users interpret d...

 Read full article:

<http://ieeexplore.ieee.org/document/10994678>

## Enhancing Video Experiences for DHH Individuals Through Sound-Inspired Motion Caption-Based Spatiotemporal Tacton

 2025-04-01  1 min  146 words




TRANSACTIONS HAPTICS

**Summary:** When deaf and hard of hearing (DHH) individuals watch videos, captions are essential for them to understand the linguistic content. Current captions, however, are not suitable for conveying non-verbal sound information, such as background music, sound effects, or speech nuances. In this paper, we de...

 Read full article:

<http://ieeexplore.ieee.org/document/10946856>

## VibTac: A High-Resolution High-Bandwidth Tactile Sensing Finger for Multi-Modal Perception in Robotic Manipulation

 2025-04-15  1 min  169 words


TRANSACTIONS HAPTICS

**Summary:** Tactile sensing is pivotal for enhancing robot manipulation abilities by providing crucial feedback for localized information. However, existing sensors often lack the necessary resolution and bandwidth required for intricate tasks. To address this gap, we introduce VibTac, a novel multi-modal tacti...

 Read full article:

<http://ieeexplore.ieee.org/document/10965524>

## Age-Related Impact in Illusory Torque Cues Induced by Asymmetric Vibrations

 2025-04-07  1 min  197 words

TRANSACTIONS HAPTICS




**Summary:** Illusory pulling sensations in the translational or rotational direction are induced by asymmetric vibrations applied to the fingertips. Although previous studies have discussed the involvement of mechanoreceptors associated with skin deformation and spatial processing in the parietal association co...

 Read full article:

<http://ieeexplore.ieee.org/document/10955171>



## A Force/Torque Taxonomy for Classifying States During Physical Co-Manipulation

 2025-06-17  1 min  149 words




TRANSACTIONS HAPTICS

**Summary:** Achieving seamless human-robot collaboration requires a deeper understanding of how agents manage and communicate forces during shared tasks. Force interactions during collaborative manipulation are inherently complex, especially when considering how they evolve over time. To address this complexity...

 Read full article:

<http://ieeexplore.ieee.org/document/11037651>

## Haptic Relocation Away From the Fingertip: Where, Why, and How

 2025-06-20  1 min  194 words




TRANSACTIONS HAPTICS

**Summary:** Tactile haptic devices are often designed to render meaningful, complex, and realistic touch-based information on users' skin. While fingertips and hands are the most preferred body locations to render haptic feedback, recent trends allow such feedback to be extended to alternative body locations (e...

 Read full article:

<http://ieeexplore.ieee.org/document/11045422>

## Tactile–Thermal Interactions: Cooperation and Competition

 2025-03-10  1 min  198 words




TRANSACTIONS HAPTICS

**Summary:** This review focuses on the interactions between the cutaneous senses, and in particular touch and temperature, as these are the most relevant for developing skin-based display technologies for use in virtual reality (VR) and for designing multimodal haptic devices. A broad spectrum of research is re...

 Read full article:

<http://ieeexplore.ieee.org/document/10918829>

## Twenty Years of World Haptics: Retrospective and Future Directions

 2025-09-19  1 min  1 words

TRANSACTIONS HAPTICS


 Read full article:

<http://ieeexplore.ieee.org/document/11174044>

## Table of Contents

 2025-09-19  1 min  1 words


TRANSACTIONS HAPTICS

 Read full article:

<http://ieeexplore.ieee.org/document/11174043>

## Differential effects of acute and chronic fluoxetine on c-Fos expression in specific subpopulations of midbrain dopaminergic neurons

 1  
min

 20  
words

NEUROSCIENCE JOURNAL

**Summary:**

Publication date: 1 November 2025

Source: Neuroscience, Volume 586

Author(s): Maarten van den Buuse, Kira-Elise Wilson, Jennyfer M. Payet, Matthew W. Hale




Read full article:

[https://www.sciencedirect.com/science/article/pii/S0306452225009625?dgcid=rss\\_sd\\_all](https://www.sciencedirect.com/science/article/pii/S0306452225009625?dgcid=rss_sd_all)

## The impact of trust violations on emotional conflict control

 1  
min

 14  
words

NEUROIMAGE

**Summary:**

Publication date: 15 October 2025

Source: NeuroImage, Volume 320


Author(s): Shuge Yuan, Mengsi Xu, Yue Zhu






Read full article:

[https://www.sciencedirect.com/science/article/pii/S1053811925004914?dgcid=rss\\_sd\\_all](https://www.sciencedirect.com/science/article/pii/S1053811925004914?dgcid=rss_sd_all)

## Effects of combined prenatal exposure to air pollution and maternal stress on immune and dopaminergic gene expression in the gut-brain axis

 Martin, E. M., Morales, M. J., Li, N. Y., Stoehr, M. C., Kern, M. J., Winters, M. F., Smith, C. J.

 2025-10-01  1 min  262 words




BIORXIV NEUROSCIENCE

**Summary:** Air pollution and maternal stress during pregnancy are both risk factors for neurodevelopmental disorders and often converge on the same communities. Epidemiological and animal studies suggest that maternal psychosocial stress may worsen the effects of air pollutants on neurodevelopmental outcomes. ...

 Read full article:

<https://www.biorxiv.org/content/10.1101/2025.09.30.678116v1?rss=1>

## Reward circuit function and treatment outcome following vALIC deep brain stimulation in treatment-resistant depression


 2025-10-01  1 min  0 words


NATURE NEUROSCIENCE SUBJECTS

 Read full article:


<https://www.nature.com/articles/s41380-025-03284-7>

## Rapid learning of neural circuitry from holographic ensemble stimulation enabled by model-based compressed sensing

 Liam  
Paninski

 17 2025-09-17

 1  
min

 28  
words

NATURE NEUROSCIENCE


**Summary:**

Nature Neuroscience, Published online: 17 September 2025; [doi:10.1038/s41593-025-02053-7](https://www.nature.com/articles/s41593-025-02053-7)

The authors develop a new computational system for high-throughput mapping of synaptic connectivity using two-photon holographic optogenetic...


 **Read full article:**  
<https://www.nature.com/articles/s41593-025-02053-7>

## High-throughput synaptic connectivity mapping using in vivo two-photon holographic optogenetics and compressive sensing

 Valentina  
Emiliani

 17 2025-09-17

 1  
min

 30  
words

NATURE NEUROSCIENCE


**Summary:**


Nature Neuroscience, Published online: 17 September 2025; [doi:10.1038/s41593-025-02024-y](https://www.nature.com/articles/s41593-025-02024-y)

Using two-photon optogenetics, electrical recordings and sparse signal reconstruction, the authors demonstrate in vivo synaptic connectivity...


 **Read full article:**  
<https://www.nature.com/articles/s41593-025-02024-y>

## Temporal integration in human auditory cortex is predominantly yoked to absolute time

 Nima  
Mesgarani

 17 2025-09-18

 1  
min

 36  
words

NATURE NEUROSCIENCE

**Summary:**

Nature Neuroscience, Published online: 18 September 2025; [doi:10.1038/s41593-025-02060-8](https://www.nature.com/articles/s41593-025-02060-8)


Temporal integration throughout the human auditory cortex is predominantly locked to absolute time and does not vary with the duration of sp...

 Read full article:


<https://www.nature.com/articles/s41593-025-02060-8>

## Hormonal milieu influences whole-brain structural dynamics across the menstrual cycle using dense sampling in multiple individuals

 Christian  
Gaser

 17 2025-09-26

 1  
min

 44  
words

NATURE NEUROSCIENCE

**Summary:**

Nature Neuroscience, Published online: 26 September 2025; [doi:10.1038/s41593-025-02066-2](https://www.nature.com/articles/s41593-025-02066-2)

Heller et al. showed dense longitudinal imaging in four females, including one with endometriosis and one using oral contraceptives, and the...

 Read full article:

<https://www.nature.com/articles/s41593-025-02066-2>

## Towards the implementation of Indigenous data governance in neurogenomics research



Louise C. Parr-  
Brownlie



2025-09-29



1  
min



88  
words

NATURE NEUROSCIENCE

**Summary:** <p>Nature Neuroscience, Published online: 29 September 2025; <a href="https://www.nature.com/articles/s41593-025-02070-6">doi:10.1038/s41593-025-02070-6</a></p>The promise of genomics-focused neuroscience to improve health outcomes for Indigenous Peoples depends on ensuring more equitable data relat...



Read full article:

<https://www.nature.com/articles/s41593-025-02070-6>

## This Week in The Journal



McKeon,  
P.



2025-09-03



1  
min



0  
words


JOURNAL NEUROSCIENCE THIS WEEK




Read full article:


<http://www.jneurosci.org/cgi/content/short/45/36/etwij45362025?rss=1>

## VAE deep learning model with domain adaptation, transfer learning and harmonization for diagnostic classification from multi-site neuroimaging data

 D.  
Rangaprakash

 17 2025-09-11

 1  
min

 276  
words

FRONTIERS NEUROINFORMATICS

**Summary:** In large public multi-site fMRI datasets, the sample characteristics, data acquisition methods, and MRI scanner models vary across sites and datasets. This non-neural variability obscures neural differences between groups and leads to poor machine learning based diagnostic classification of neurodev...

 Read full article:


<https://www.frontiersin.org/articles/10.3389/fninf.2025.1553035>

## The impact of CSF-filled cavities on scalp EEG and its implications

 Maria Carla  
Piastra

 17 2024-06-14

 1  
min

 64  
words

OOSTENVELD ROBERT

**Summary:** Previous studies have found electroencephalogram (EEG) amplitude and scalp topography differences between neurotypical and neurological/neurosurgical groups, being interpreted at the cognitive level. However, these comparisons are invariably accompanied by anatomical changes. Critical to EEG are the...

 Read full article:

<https://pubmed.ncbi.nlm.nih.gov/38873838/?>

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## Motion-BIDS: an extension to the brain imaging data structure to organize motion data for reproducible research

 Julius  
Welzel



2024-07-02


1  
min72  
words

OOSTENVELD ROBERT

**Summary:** We present an extension to the Brain Imaging Data Structure (BIDS) for motion data. Motion data is frequently recorded alongside human brain imaging and electrophysiological data. The goal of Motion-BIDS is to make motion data interoperable across different laboratories and with other data modalitie...

**Read full article:**[https://pubmed.ncbi.nlm.nih.gov/38956071/?](https://pubmed.ncbi.nlm.nih.gov/38956071/?utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1BUB2BG5RbxOblm-hBbiJWEhGG43qIVrvGNHOTqBKva9wWrltM&fc=None&ff=20251001232959&v=2.18.0.post9+e462414)[utm\\_source=BucketBot&utm\\_medium=rss&utm\\_campaign=None&utm\\_content=1BUB2BG5RbxOblm-hBbiJWEhGG43qIVrvGNHOTqBKva9wWrltM&fc=None&ff=20251001232959&v=2.18.0.post9+e462414](https://pubmed.ncbi.nlm.nih.gov/38956071/?utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1BUB2BG5RbxOblm-hBbiJWEhGG43qIVrvGNHOTqBKva9wWrltM&fc=None&ff=20251001232959&v=2.18.0.post9+e462414)

## One hundred years of EEG for brain and behaviour research

 Pedro Valdes-  
Sosa



2024-08-22

1  
min2  
words

OOSTENVELD ROBERT

**Read full article:**[https://pubmed.ncbi.nlm.nih.gov/39174725/?](https://pubmed.ncbi.nlm.nih.gov/39174725/?utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1BUB2BG5RbxOblm-hBbiJWEhGG43qIVrvGNHOTqBKva9wWrltM&fc=None&ff=20251001232959&v=2.18.0.post9+e462414)[utm\\_source=BucketBot&utm\\_medium=rss&utm\\_campaign=None&utm\\_content=1BUB2BG5RbxOblm-hBbiJWEhGG43qIVrvGNHOTqBKva9wWrltM&fc=None&ff=20251001232959&v=2.18.0.post9+e462414](https://pubmed.ncbi.nlm.nih.gov/39174725/?utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1BUB2BG5RbxOblm-hBbiJWEhGG43qIVrvGNHOTqBKva9wWrltM&fc=None&ff=20251001232959&v=2.18.0.post9+e462414)

## Freezing of gait in Parkinson's disease is related to imbalanced stopping-related cortical activity



Richard J A van  
Wezel



2024-09-04



1  
min



65  
words

OOSTENVELD ROBERT

**Summary:** Freezing of gait, characterized by involuntary interruptions of walking, is a debilitating motor symptom of Parkinson's disease that restricts people's autonomy. Previous brain imaging studies investigating the mechanisms underlying freezing were restricted to scan people in supine positions and yie...



Read full article:

<https://pubmed.ncbi.nlm.nih.gov/39229492/?>

[utm\\_source=BucketBot&utm\\_medium=rss&utm\\_campaign=None&utm\\_content=1BUB2BG5RbxOblm-hBbiJWEhGG43qIVrvGNHOTqBKva9wWrltM&fc=None&ff=20251001232959&v=2.18.0.post9+e462414](https://pubmed.ncbi.nlm.nih.gov/39229492/?utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1BUB2BG5RbxOblm-hBbiJWEhGG43qIVrvGNHOTqBKva9wWrltM&fc=None&ff=20251001232959&v=2.18.0.post9+e462414)

## The past, present, and future of the brain imaging data structure (BIDS)



Krzysztof J  
Gorgolewski



2024-09-23



1  
min



82  
words

OOSTENVELD ROBERT

**Summary:** The Brain Imaging Data Structure (BIDS) is a community-driven standard for the organization of data and metadata from a growing range of neuroscience modalities. This paper is meant as a history of how the standard has developed and grown over time. We outline the principles behind the project, the ...




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## Human cortical high-gamma power scales with movement rate in healthy participants and stroke survivors

Fanny  
Quandt

 2025-01-09

 1  
min

 65  
words

OOSTENVELD ROBERT

**Summary:** Motor cortical high-gamma oscillations (60-90 Hz) occur at movement onset and are spatially focused over the contralateral primary motor cortex. Although high-gamma oscillations are widely recognized for their significance in human motor control, their precise function on a cortical level remains el...

 **Read full article:**

<https://pubmed.ncbi.nlm.nih.gov/39786979/>


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## NIRS-BIDS: Brain Imaging Data Structure Extended to Near-Infrared Spectroscopy

Luca  
Pollonini

 2025-01-27

 1  
min

 70  
words

OOSTENVELD ROBERT


**Summary:** Functional near-infrared spectroscopy (fNIRS) is an increasingly popular neuroimaging technique that measures cortical hemodynamic activity in a non-invasive and portable fashion. Although the fNIRS community has been successful in disseminating open-source processing tools and a standard file forma...



 **Read full article:**


<https://pubmed.ncbi.nlm.nih.gov/39870674/>

utm\_source=BucketBot&utm\_medium=rss&utm\_campaign=None&utm\_content=1BUB2BG5RbxOblm-hBbiJWEhGG43qIVrvGNHOTqBKva9wWrltM&fc=None&ff=20251001232959&v=2.18.0.post9+e462414

## Pseudonymisation of neuroimages and data protection: **Increasing access to data while retaining scientific utility**

 Lyuba  
Zehl

 2025-06-26  1  
min

 67  
words

OOSTENVELD ROBERT

**Summary:** For a number of years, facial features removal techniques such as 'defacing', 'skull stripping' and 'face masking/blurring', were considered adequate privacy preserving tools to openly share brain images. Scientifically, these measures were already a compromise between data protection requirements a...



 **Read full article:**


[https://pubmed.ncbi.nlm.nih.gov/40568426/?](https://pubmed.ncbi.nlm.nih.gov/40568426/?utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1BUB2BG5RbxOblm-hBbiJWEhGG43qIVrvGNHOTqBKva9wWrltM&fc=None&ff=20251001232959&v=2.18.0.post9+e462414)

[utm\\_source=BucketBot&utm\\_medium=rss&utm\\_campaign=None&utm\\_content=1BUB2BG5RbxOblm-hBbiJWEhGG43qIVrvGNHOTqBKva9wWrltM&fc=None&ff=20251001232959&v=2.18.0.post9+e462414](https://pubmed.ncbi.nlm.nih.gov/40568426/?utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1BUB2BG5RbxOblm-hBbiJWEhGG43qIVrvGNHOTqBKva9wWrltM&fc=None&ff=20251001232959&v=2.18.0.post9+e462414)

## Cycling on the Freeway: The perilous state of open-source neuroscience software

 Tim M  
Tierney

 2025-08-13  1  
min

 74  
words

OOSTENVELD ROBERT


**Summary:** Most scientists need software to perform their research (Barker et al., 2020;Carver et al., 2022;Hettrick, 2014;Hettrick et al., 2014;Switters & Osimo, 2019), and neuroscientists are no exception. Whether we work with reaction times, electrophysiological signals, or magnetic resonance imaging data, ...


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## Optimal configuration of on-scalp OPMs with fixed channel counts

 Robert  
Oostenveld

 17 2025-08-13  1  
min

 69  
words

OOSTENVELD ROBERT


**Summary:** Recent technological developments have brought optically pumped magnetometers (OPMs) within reach of the larger neuroscientific community. The current state-of-the-art consists of whole-head systems that measure the magnetic field at >100 locations. OPM sensors can be constructed to measure the fiel...



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## Case 341: Infratentorial Posterior Reversible Encephalopathy Syndrome Associated with Interferon- $\beta$ in Relapsing Multiple Sclerosis

 Joachim  
Fladt

 17 2025-09-30  1  
min

 67  
words

LOW VISION

**Summary:** A 36-year-old man with known history of relapsing multiple sclerosis (RMS) of 13-year duration who was undergoing continuous treatment with subcutaneous interferon- $\beta$  (INF- $\beta$ ) (44  $\mu$ g three times per week) presented to the emergency department of our hospital with blurry vision of 1-week duration. Rout...

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## Causes of Visual Impairment and Blindness in a Clinic Population from Puerto Rico



Claudia Colón-  
Sanchez



2025-09-30



1  
min



56  
words

LOW VISION

**Summary:** CONCLUSION: This study provided insights into the causes of VI and blindness in Puerto Rico. These findings underscore the need for targeted interventions and public health initiatives to improve accessibility to visual rehabilitation. Further research is warranted to explore additional factors infl...



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## User cum expert judgement model for accessibility using fuzzy approach



Satinder  
Kaur



2025-09-30



1  
min



70  
words

LOW VISION

**Summary:** Well-designed websites play a pivotal role in technological innovation by improving accessibility, user interaction and digital inclusivity. It is crucial to evaluate website accessibility as it meets the diverse needs of its users and adheres to legal and ethical standards. Significant research has...





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## Optimizing retinal images based carotid atherosclerosis prediction with explainable foundation models

 Jooyoung  
Chang

 2025-09-30

 1  
min

 65  
words

LOW VISION


**Summary:** Carotid atherosclerosis is a key predictor of cardiovascular disease (CVD), necessitating early detection. While foundation models (FMs) show promise in medical imaging, their optimal selection and fine-tuning strategies for classifying carotid atherosclerosis from retinal images remain unclear. Usi...


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## The efficacy and safety of herbal medicines for glycaemic control and insulin resistance in individuals with type 2 diabetes: an umbrella review

 Carolyn  
Ee

 2025-10-01

 1  
min

 70  
words

LOW VISION

**Summary:** CONCLUSIONS: Current evidence supports the use of ginger and turmeric for glycaemic control in type 2 diabetes, however, given the high clinical heterogeneity and low quality of the review, our confidence in this finding is somewhat limited. Herbal medicines should be used only as an adjunct to conv...

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## Development of an embedded diagnostic tool for visual misalignment screening



Ruthber Rodriguez  
Serrezuela



2025-10-01



1  
min



70  
words

LOW VISION

**Summary:** This article presents the design, implementation, and validation of a low-cost embedded system for preliminary strabismus screening, based on computer vision and deep learning. The hardware integrates a Raspberry Pi 4, a USB camera, and a 3D-printed chin rest to ensure consistent facial positioning....



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## Swin-YOLO-SAM: a hybrid Transformer-based framework integrating Swin Transformer, YOLOv12, and SAM-2.1 for automated identification and segmentation of date palm leaf diseases



Ghassan  
Husnain



2025-10-01



1  
min



68  
words

LOW VISION

**Summary:** The cultivation of date palm (*Phoenix dactylifera* L.) is acutely impacted by numerous fungal, bacterial, and pest-related diseases that diminish yield, spoil fruit quality, and undermine long-term agricultural sustainability. The traditional methods of monitoring diseases, which rely heavily on expe...



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## Chronic endometritis diagnosis and fertility outcomes: an old unresolved question



Yohann  
Dabi



2025-10-01



1  
min



67  
words

LOW VISION

**Summary:** ABSTRACT: Chronic endometritis, defined by chronic inflammation of the endometrium, remains a clinical and biologic challenge even using hysteroscopy allowing a direct vision of the uterine cavity without anesthesia, and conventional histology using Hematoxylin and Eosin staining. Our primary object...



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## DTL: Parameter- and Memory-Efficient Disentangled Vision Learning



Jianxin  
Wu



2025-10-01



1  
min



77  
words

LOW VISION

**Summary:** The cost of finetuning a pretrained model on downstream tasks steadily increases as they grow larger. Parameter-efficient transfer learning (PETL) is proposed to reduce this cost by changing only a tiny subset of trainable parameters. But, the GPU memory footprint during training is not effectively ...



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## Exploring Vision-Based Active 3D Object Detection by Informativeness Characterization



Xi

Li



2025-10-01



1

min



76

words

LOW VISION

**Summary:** Vision-based 3D object detection (3DOD) gains lots of attention due to its low cost for deployment compared to Lidar-based tasks, while it suffers from labor-expensive data annotations. At the same time, active learning (AL) has shown great potential in reducing annotation costs in related tasks, wh...



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## The taste of trigeminal sensations: relation between taste, lingual tactile acuity, and spicy perception in patients with taste dysfunction

Thomas  
Hummel

2025-05-28



1

min



70

words

TACTILE ACUITY

**Summary:** In the oral cavity, oral stereognosis and chemesthesis refer to the abilities to recognize shapes and detect noxious substances, respectively, through various receptors distributed on the tongue. The absence of standardized methods to assess oral somatosensory perception has led to a lack of consens...





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## Measuring the Distribution of Tactile Acuity at the Index Finger and Thumb Fingertips

 Hiroyuki  
Kajimoto

 2025-06-17

 1  
min

 75  
words

TACTILE ACUITY

**Summary:** In our day-to-day activities, we utilize not only the pads of our fingers but also the sides and hemispherical tips when manipulating objects. For teleoperation systems to replicate these real-life interactions, tactile sensation must be presented and distributed across the entire fingertip. Thus, u...


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## Optimizing Vibrotactile Feedback for Sensory Substitution in the Thigh: Spatial Acuity and Frequency Characteristics

 Leah R  
Bent

 2025-06-27

 1  
min

 69  
words

TACTILE ACUITY


**Summary:** Amputation of a lower limb not only affects mobility but also interferes with sensory feedback, leading to an elevated risk of falls among individuals living with amputation. Sensory substitution, achieved through tactile displays embedded in transfemoral prosthetic sockets, presents a promising non...


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## Directional vibro-tactile hazard warnings for drivers with vision impairments

 Alex R  
Bowers

 2025-07-02

 1  
min

 80  
words

TACTILE ACUITY


**Summary:** Vision impairment may delay responses to hazards when driving. In a proof-of-concept driving simulator study, we evaluated a hazard warning device designed for vision impaired drivers. Three groups participated: 11 persons with central vision loss (CVL; median age 60 years), 12 with homonymous field...


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## Sensitivity and vagal reactivity to C-tactile-mediated affective touch in mild cognitive impairment due to Alzheimer's disease

 Cecilia  
Guariglia

 2025-08-01

 1  
min

 64  
words

TACTILE ACUITY

**Summary:** BackgroundC-tactile (CT) afferents preferentially activate in response to slow caress-like touch, evoking a diffuse pleasant sensation and promoting autonomic regulation. According to Braak's classic model, the neurodegenerative process in Alzheimer's disease (AD) only affects somatosensory cortices...


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## Differences in tactile grid localization accuracy between people with back pain compared to individuals without pain

 Eric  
Fjeldheim

 17 2025-08-24

 1  
min

 22  
words

TACTILE ACUITY


**Summary:** OBJECTIVES: The study aimed to investigate the grid localization test (GLT) between patients with lower back pain and those without back pain.


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## Eye Drop Instillation Success and Hand Function in Adults with Glaucoma: A Pilot Study

 Paula Anne Newman-  
Casey


 17 2025-09-09

 1  
min

 74  
words

TACTILE ACUITY


**Summary:** CONCLUSIONS: Despite hand function deficits, in this exploratory pilot study, adults with glaucoma demonstrated eye drop instillation success comparable to those without glaucoma, though with higher rates of bottle tip contact with the eye, skin, or eyelashes, suggesting an increased risk of potenti...


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VOQkZ1QsEMPlx7YY7aF6AfClqP-RYZd&fc=None&ff=20251001232953&v=2.18.0.post9+e462414

## Functional evidence for early origin of tactile acuity in the vertebrate somatosensory system

 Sviatoslav N  
Bagriantsev


 2025-09-13

 1  
min

 58  
words

TACTILE ACUITY


**Summary:** Mammals and reptiles possess a sophisticated somatosensory system for precise tactile discrimination via mechanosensory end-organs, such as Meissner and Pacinian corpuscles and others. These structures detect sustained pressure, velocity, and vibrations, thereby facilitating nuanced environmental in...


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## The coarse mental map of the breast is anchored on the nipple

 Charles M  
Greenspon

 2025-09-18

 1  
min

 86  
words

TACTILE ACUITY

**Summary:** Touch plays a key role in our perception of our body and shapes our interactions with the world, from the objects we manipulate to the people we touch. While the tactile sensibility of the hand has been extensively characterized, much less is known about touch on other parts of the body. Despite the...



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# Haptic Feedback Systems for Lower-Limb Prosthetic Applications: A Review of System Design, User Experience, and Clinical Insights

 Runar  
Unnthorsson

 2025-09-27  1  
min

 65  
words

TACTILE ACUITY


**Summary:** Systems presenting haptic information have emerged as an important technological advance in assisting individuals with sensory impairments or amputations, where the aim is to enhance sensory perception or provide sensory substitution through tactile feedback. These systems provide information on lim...

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## Exploring the use of smartphone applications during navigation-based tasks for individuals who are blind or who have low vision: future directions and priorities

 Joseph Paul  
Nemargut



2025-08-25



1  
min



62  
words

**BRaille**

**Summary:** CONCLUSION: These results provide vital insights for technology developers about the perceived utility of smartphone apps for people with low vision or blindness during navigation. Our results highlight the importance of built-in accessibility features for users with visual impairments. As additiona...




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## Gradient Porous Flexible Pressure Sensors with the Relay Effect for High-Accuracy Braille-to-Speech Recognition

 Jianming  
Xu



2025-08-25



1  
min



62  
words

**BRaille**

**Summary:** The development of highly sensitive, wide linear-range flexible pressure sensors is crucial for practical applications in human-computer interaction, physiological signal detection, and motion monitoring. However, traditional flexible pressure sensors often suffer from limited compressibility in the...





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
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## Individual and community level factors influencing modern contraceptive use among women of reproductive age in South Africa: a multilevel analysis


 Million  
Phiri

 2025-08-26  1  
min

 46  
words

**BRaille**


**Summary:** CONCLUSION: Sensory disability status influenced women's contraceptive behaviour in South Africa. Current family planning interventions should target women with sensory disabilities by prioritising accessible communication methods (e.g., braille, sign language), disability awareness training for hea...



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## Explosion-powered eversible tactile displays

 Robert F  
Shepherd

 2025-08-27  1  
min

 64  
words

**BRaille**


**Summary:** High-resolution electronic tactile displays stand to transform haptics for remote machine operation, virtual reality, and digital information access for people who are blind or visually impaired. Yet, increasing the resolution of these displays requires increasing the number of individually addressa...


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## A Biomimetic Fiber-Entangled Permeable Electronic Skin for Strain-Insensitive and High-Resolution Tactile Sensing

 Zhijun  
Ma

 2025-08-28

 1  
min

 57  
words

[BRAILLE](#)


**Summary:** Electronic skins (e-skins) incorporating island architectures represent a promising platform for strain-insensitive tactile sensing by mechanically decoupling sensing units from deformations. However, conventional island designs encounter stress concentration issues caused by inherent modulus mismat...


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## High-Density Tactile Sensor Array for Sub-Millimeter Texture Recognition

 Min  
Zhang

 2025-08-28

 1  
min

 64  
words

[BRAILLE](#)

**Summary:** High-density tactile sensor arrays that replicate human touch could restore texture perception in paralyzed individuals. However, conventional tactile sensor arrays face inherent trade-offs between spatial resolution, sensitivity, and crosstalk suppression due to microstructure size limitations and ...



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## A Diachronic Investigation of the Change in Form and Formational-Semantic Systematicity of the Chinese Sign Language Lexicon

 Hao  
Lin

 2025-09-01  1  
min

 72  
words

**BRAILLE**

**Summary:** It has been argued in previous research that several competing pressures guide the directions of language evolution (economy vs. redundancy; arbitrariness vs. systematicity). For sign languages, however, the effects of competing pressures on their change of lexical systems remain largely unclear. In...



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## Wireless Electrotactile System with Hydrogel-Based Electrodes for Conformal Tactile Interaction

 Ji  
Liu

 2025-09-02  1  
min

 56  
words

**BRAILLE**

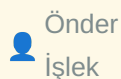
**Summary:** A wireless epidermal electrotactile interface is demonstrated through integration of skin-conformal electrodes and flexible circuitry, addressing existing limitations in haptic technology caused by mechanical mismatch and system-level integration challenges. This electrotactile system achieves low s...

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## Beyond access: rethinking assistive technology for individuals with visual impairments in Türkiye



Önder

İşlek



2025-09-12



1

min



55

words

BRILLE

**Summary:** CONCLUSION: Despite demonstrating adaptability, individuals with VI in Türkiye face significant structural barriers to equitable AT access. Informal learning limited public support, and a lack of locally adapted tools contribute to digital exclusion. A rights-based approach-emphasizing inclusive fun...



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## High prevalence of bacterial STI, anal HPV, cytological abnormalities and anal lesions among MSM in Togo, 2021: a baseline analysis of the ANRS I MIE 12,400/DepIST-H cohort



Didier K

Ekouevi



2025-09-27



1

min



42

words

BRILLE


**Summary:** CONCLUSIONS: These findings emphasize the high prevalence of STIs among MSM and confirm the unusual distribution of HPV types in West Africa, with HPV35 being highly prevalent. A national strategy regarding STI screening and HPV vaccination in this key population is needed.



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## Transcranial magnetic stimulation and transcranial direct current stimulation in psychiatric disorders in children and adolescents: an umbrella review of meta-analyses of clinical trials

 Andre Russowsky  
Brunoni



2025-09-29



1  
min



22  
words

TDCS TACS TRNS


**Summary:** CONCLUSION: NIBS appears safe and effective to treat psychiatric disorders in children and adolescents but requires further high-quality RCTs for clinical validation.

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## An Investigation of the Effects of alpha- and beta-Frequency Neural Entrainment Using tACS on Phase-Aligned TMS-Evoked Corticospinal Excitability

 Stephen R  
Jackson



2025-09-30



1  
min



49  
words

TDCS TACS TRNS


**Summary:** CONCLUSION: These findings confirm that aligning noninvasive brain stimulation to ongoing brain activity may increase the efficacy of TMS and reduce the variability of its effects. However, our results illustrate that the optimal phase of the tACS cycle at which to deliver TMS may vary for different...


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## Advancing pain assessment in Alzheimer's disease and related dementias: Functional near-infrared spectroscopy for investigating brain activity

 Hyochol  
Ahn


 2025-09-30

 1  
min

 58  
words

TDCS TACS TRNS

**Summary:** CONCLUSION: fNIRS demonstrated feasibility as an objective pain assessment tool in ADRD. tDCS served only as a probe to induce cortical modulation for evaluating fNIRS performance. In this study, tDCS functioned as a probe to induce cortical modulation for evaluating fNIRS sensitivity, not as a ther...



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## Preliminary evidence for high-definition transcranial direct current stimulation effects on white matter microstructure and executive function in mild cognitive impairment


 Huan  
Li

 2025-09-30  1  
min

 62  
words

TDCS TACS TRNS


**Summary:** CONCLUSION: The findings suggest that HD-tDCS targeting the L-DLPFC may promote microstructural remodeling in white matter tracts, evidenced by elevated fractional anisotropy within the corticospinal and anterior thalamic pathways. While global cognitive measures remained stable, a trend toward impr...



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## Stepwise interventional psychiatry approach for major depression: A case series

 Jean-Philippe  
Miron

 2025-09-30  1  
min

 46  
words

TDCS TACS TRNS

**Summary:** CONCLUSIONS: This case series suggests that a sequential neuromodulation strategy may increase overall response rates in TRD by capturing different responder profiles across modalities. These findings support the feasibility of a pragmatic stepwise approach and highlight the need for controlled stud...

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## On the mechanisms of epidermal stemness and differentiation

 Raghvendra  
Singh

 2025-10-01

 1  
min

 70  
words

TDCS TACS TRNS


**Summary:** High Wnt and low Notch activities characterize epidermal stem cells (SCs), while low Wnt and high Notch activities characterize the terminally differentiated epidermal cells (TDCs). However, the mechanism by which transit amplifying cells (TACs) are induced to become terminally differentiated remain...


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## Effects of Transcranial Direct Current Stimulation on pain and pain-related outcomes: an umbrella review

 Dmitriy  
Viderman

 2025-10-01

 1  
min

 64  
words

TDCS TACS TRNS


**Summary:** CONCLUSIONS: Our findings suggest that tDCS might be effective for fibromyalgia, migraine, and neuropathic pain associated with spinal cord injury and stroke. However, further evidence is needed for chronic orofacial pain, multiple sclerosis, knee osteoarthritis, central post-stroke pain, intra-abdo...


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## A novel machine learning-based method to quantify the effect of transcranial direct current stimulation on opioid users

 Davoud  
Ahmadi

 2025-10-01

 1  
min

 19  
words

TDCS TACS TRNS

**Summary:** CONCLUSION: These findings suggest that tDCS can be an effective intervention for reducing craving in patients with opioid addiction.


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## Quantitative analysis of [<sup>18</sup>F]CHL2310, a novel PET ligand for cholesterol 24-Hydroxylase, in nonhuman primate brain

 Lu  
Wang

 2025-10-01

 1  
min

 32  
words

TDCS TACS TRNS


**Summary:** CONCLUSION: [<sup>18</sup>F]CHL2310 shows high in vivo specificity, favorable pharmacokinetic properties, and robust quantitative performance in non-human primates. These characteristics support its potential as a PET radiotracer for imaging CYP46A1 in human studies.


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## Dissemination and Impact of a Multimodal Pain Regimen on Analgesia Prescribing at an Academic Hospital

 Avi  
Bhavaraju

 2025-10-01

 1  
min

 30  
words

TDCS TACS TRNS

**Summary:** CONCLUSIONS: Implementation of an MMP protocol by a single division can facilitate the spread of nonopioid adjunctive pain medication use and decrease opioid utilization throughout surgical specialties in a hospital.


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## Healthy Cognitive Aging Through Movement: A Practical Approach of Light-Intensity Aerobic Dance for Older Adults

 Hideaki  
Soya

 2025-09-26

 1  
min

 75  
words

FNIRS


**Summary:** Cognitive decline is a natural part of aging, though its progression varies significantly among individuals. There is a great deal of evidence showing that exercise is one of the most promising lifestyle factors that can both improve cognitive function and reduce the risk of dementia by causing mole...


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
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## Linking connectivity dynamics to symptom severity and cognitive abilities in children with autism spectrum disorder: An fNIRS study

 Yaqiong  
Xiao

 2025-09-26

 1  
min

 66  
words

**FNIRS**


**Summary:** Functional near-infrared spectroscopy (fNIRS) has emerged as a valuable tool for investigating neurobiological markers in children with autism spectrum disorder (ASD). While previous studies have identified abnormal functional connectivity in ASD children compared to typically developing (TD) peers,...


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## AI-Driven Multimodal Brain-State Decoding for Personalized Closed-Loop TENS: A Comprehensive Review

 Ping  
Shi

 2025-09-27

 1  
min

 64  
words

**FNIRS**

**Summary:** Chronic pain is a dynamic, brain-wide condition that eludes effective management by conventional, static treatment approaches. Transcutaneous Electrical Nerve Stimulation (TENS), traditionally perceived as a simple and generic modality, is on the verge of a significant transformation. Guided by adva...

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## Exploring Imagined Movement for Brain-Computer Interface Control: An fNIRS and EEG Review



Jamshed  
Iqbal



2025-09-27



1  
min



66  
words

**fNIRS**

**Summary:** Brain-Computer Interfaces (BCIs) offer a non-invasive pathway for restoring motor function, particularly for individuals with limb loss. This review explored the effectiveness of Electroencephalography (EEG) and function Near-Infrared Spectroscopy (fNIRS) in decoding Motor Imagery (MI) movements for...



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## Sex Differences in Cortical Hemodynamic Responses During Interactive and Passive Tasks: An fNIRS Study Using the Nefroball System



Aleksandra  
Rył



2025-09-27



1  
min



69  
words

**fNIRS**

**Summary:** The present study aimed to investigate sex differences in the hemodynamic response of the cerebral cortex during interactive and passive tasks using functional near-infrared spectroscopy fNIRS. Ninety-seven healthy adults (63 women, 34 men) participated in the study. Participants performed two tasks...




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## Editorial: Advanced fNIRS applications in neuroscience and neurological disorders

 Daifa  
Wang

 2025-09-29

 1  
min

 2  
words


**FNIRS**


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## Brain network evolution in late preterm to term infants: a near-infrared spectroscopy imaging study

 Yiwei  
Li

 2025-09-29

 1  
min

 27  
words

**FNIRS**


**Summary:** CONCLUSIONS: These results underscore the critical role of GA in shaping neonatal brain network functional organization and provide valuable insights for early intervention strategies in preterm infants.


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## Effectiveness and mechanism of moxibustion in treating chronic non-specific low back pain: study protocol for a multicenter randomized controlled trial

 Han  
Xiang


 2025-09-29

 1  
min

 67  
words

**FNIRS**

**Summary:** INTRODUCTION: Chronic non-specific low back pain (CNLBP) represents the most commonly encountered subtype of low back pain (LBP) in clinical practice. It has no clearly identified etiological factors and is prone to recurrence, which severely compromises patients' quality of life. Moxibustion therap...


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## Effects of robot assisted mirror therapy on motor function and cortical activation in patients with right hemisphere damage

 Yifan Wang

 2025-09-29

 1 min

 75 words

FNIRS

**Summary:** Robot-assisted mirror therapy (MRT) is a cutting-edge rehabilitative treatment that combines mirror therapy and rehabilitation robots and can improve stroke patient participation in rehabilitation training. The aim of this study was to investigate the effects of MRT training in patients with right-h...


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## Advancing pain assessment in Alzheimer's disease and related dementias: Functional near-infrared spectroscopy for investigating brain activity

 Hyochol  
Ahn


 17 2025-09-30

 1  
min

 58  
words

**FNIRS**

**Summary:** CONCLUSION: fNIRS demonstrated feasibility as an objective pain assessment tool in ADRD. tDCS served only as a probe to induce cortical modulation for evaluating fNIRS performance. In this study, tDCS functioned as a probe to induce cortical modulation for evaluating fNIRS sensitivity, not as a ther...

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## E-Sort: empowering end-to-end neural network for multi-channel spike sorting with transfer learning and fast post-processing

 Shiwei  
Wang



2025-09-29



1  
min



62  
words

BRAIN COMPUTER INTERFACE

**Summary:** OBJECTIVE: Spike sorting, which involves detecting and attributing spikes to their putative neurons from extracellular recordings, is a common process in electrophysiology and brain-computer interface systems. Recent advances in large-scale neural recording technologies are challenging the conventio...



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## Dexamethasone-loaded platelet-inspired nanoparticles improve intracortical microelectrode recording performance



Andrew J  
Shoffstall



2025-09-29



1  
min



59  
words

BRAIN COMPUTER INTERFACE

**Summary:** Long-term robust intracortical microelectrode (IME) neural recording quality is negatively affected by the neuroinflammatory response following microelectrode insertion. This adversely impacts brain-machine interface (BMI) performance for patients with neurological disorders or amputations. Recent s...



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## Representation of top-down versus bottom-up attention in the right dorsolateral prefrontal cortex and superior parietal lobule

 Ling  
Li


 2025-09-30

 1  
min

 44  
words

BRAIN COMPUTER INTERFACE

**Summary:** CONCLUSIONS: These results indicate that the right DLPFC and SPL showed stronger activity and connectivity under top-down versus bottom-up attention, allowing for neural representation of visual selective attention. This study provides evidence for understanding the role of the fronto-parietal netwo...

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## Innovative augmentation techniques and optimized ANN model for imagined speech decoding in EEG-based BCI



R S  
Anand



2025-09-30



1  
min



65  
words

BRAIN COMPUTER INTERFACE

**Summary:** Electroencephalogram (EEG) based Brain computer interface (BCI) emerges as a transformative technology with vast applications in neuroscience and rehabilitation. Imagined speech is the mental process of thinking and formulating words without vocalizing them through articulators. EEG signal is used t...



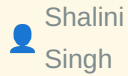
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[tbw4049Wgf\\_RdKXdtnCvGW0lVBZFpHe7zaN4k4DwoD5&fc=None&ff=20251001232942&v=2.18.0.post9+e462414](https://pubmed.ncbi.nlm.nih.gov/41025122/?utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1rSUu--tbw4049Wgf_RdKXdtnCvGW0lVBZFpHe7zaN4k4DwoD5&fc=None&ff=20251001232942&v=2.18.0.post9+e462414)

## Designing behavioural change intervention module for tobacco cessation counselling among pregnant tobacco users in India: a methodology paper



Shalini  
Singh



2025-09-30



1  
min



72  
words

BRAIN COMPUTER INTERFACE

**Summary:** Tobacco use has detrimental effects on women's reproductive health and is associated with poor pregnancy outcomes. Antenatal care (ANC) check-ups provide health professionals with a unique opportunity to screen and counsel pregnant tobacco users to quit. Currently, in India, pregnant women are not b...



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## Machine learning predictions from unpredictable chaos



Guo-Wei  
Wei



2025-09-30



1  
min



68  
words

BRAIN COMPUTER INTERFACE

**Summary:** Chaos is omnipresent in nature, and its understanding provides enormous social and economic benefits. However, the unpredictability of chaotic systems is a textbook concept due to their sensitivity to initial conditions, aperiodic behaviour, fractal dimensions, nonlinearity and strange attractors. I...



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## EEG-based motor execution classification of upper and lower extremities using machine learning

 Cengiz  
Tepe

 2025-10-01

 1  
min

 61  
words

BRAIN COMPUTER INTERFACE

**Summary:** This study classifies upper- and lower-extremity motor execution from electroencephalography (EEG). We compared two feature extractors, statistical features and Common Spatial Patterns (CSP), and four classifiers: K-Nearest Neighbors, Linear Discriminant Analysis (LDA), Multilayer Perceptron, and Su...


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## The Contribution of Wearable Devices and Artificial Intelligence to Promoting Healthy Aging

 Chaiyavat  
Chaiysut

 2025-10-01

 1  
min

 51  
words

BRAIN COMPUTER INTERFACE

**Summary:** CONCLUSION: The evolving landscape of wearable technologies, exemplified by Fitbit®, Acti- Graph™, and other interventions, holds substantial promise for reshaping healthcare approaches for the aging population. Addressing the limitations will be crucial as research progresses to ensure the effectiv...


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## Revolutionizing brain-computer interfaces: Compact and high-speed wireless neural signal acquisition

 Gang Wang

 2025-10-01

 1 min

 64 words

BRAIN COMPUTER INTERFACE

**Summary:** A brain-computer interface (BCI) facilitates the connection between the human brain and external devices by decoding neurophysiological signals, thereby enabling seamless interaction between humans and machines. However, existing neural signal acquisition systems often suffer from limited channel co...


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## An EEG-EMG-based Hybrid Brain-Computer Interface for Decoding Tones in Silent and Audible Speech

 Chunzhi Yi

 2025-10-01

 1 min

 72 words

BRAIN COMPUTER INTERFACE

**Summary:** Speech recognition can be widely applied to support people with language disabilities by enabling them to communicate through brain-computer interfaces (BCIs), thus improving their quality of life. Despite the essential role of tonal variations in conveying semantic meaning, there have been limited ...


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## Why We're Here


 2025-09-11  1 min  352 words

FMHY



**Summary:**

People always want to know what the point of life is. Why are they on earth? What are we doing here? Whats our purpose? *Whats the point?*

For most of my life, I didn't really have any answer, but as I got older, I realized, things weren't about me. I took a step back, and recognize...


 Read full article:  
<https://fmhy.net/posts/WWH>

## Building the heap: racking 30 petabytes of hard drives for pretraining




 2025-10-01  1 min  2 words

HACKER NEWS

**Summary:** [Comments](https://news.ycombinator.com/item?id=45438496)


 Read full article:  
<https://si.inc/posts/the-heap/>

## Show HN: Autism Simulator




 2025-10-01  1 min  2 words

HACKER NEWS

**Summary:** [Comments](https://news.ycombinator.com/item?id=45438346)

 **Read full article:**  
<https://autism-simulator.vercel.app/>




## Front Cover

 2025-09-19  1 min  1 words

TRANSACTIONS HAPTICS

 **Read full article:**  
<http://ieeexplore.ieee.org/document/11174042>

## An Exploration of the Electrocorticogram Signatures Evoked by Ultrasound Thalamus Stimulation Under Isoflurane Anesthesia in Rats

 2025-03-28  1 min  252 words

TRANSACTIONS BIOMEDICAL ENGINEERING

**Summary:** Objective: The transcranial ultrasound stimulation (TUS) on the thalamus can indirectly induce cortical response. Studies have shown that general anesthetic induced unconsciousness is related to interruption of thalamocortical connectivity. However, the neural mechanism of how anesthesia levels infl...

 Read full article:

<http://ieeexplore.ieee.org/document/10945385>

## Pulmonary Hypertension Detection From Heart Sound Analysis

 2025-03-28  1 min  206 words




TRANSACTIONS BIOMEDICAL ENGINEERING

**Summary:** The detection of Pulmonary Hypertension (PH) from the computer analysis of digitized heart sounds is a low-cost and non-invasive solution for early PH detection and screening. We present an extensive cross-domain evaluation methodology with varying animals (humans and porcine animals) and varying au...

 Read full article:

<http://ieeexplore.ieee.org/document/10944577>




## Features of autism can affect age of diagnosis – and so can genes

 2025-10-01  1 min  0 words

NATURE NEUROSCIENCE SUBJECTS

 Read full article:  
<https://www.nature.com/articles/d41586-025-03180-8>

## Slow-wave sleep and REM sleep differentially contribute to memory representational transformation

 2025-10-01  1 min  0 words

NATURE NEUROSCIENCE SUBJECTS

 Read full article:  
<https://www.nature.com/articles/s42003-025-08812-3>

## HippoMaps: multiscale cartography of human hippocampal organization

 2025-10-01  1 min  0 words

NATURE NEUROSCIENCE SUBJECTS

 Read full article:  
<https://www.nature.com/articles/s41592-025-02783-3>

## Spatial attention selectively alters visual cortical representation during target anticipation

 2025-10-01  1 min  0 words

NATURE NEUROSCIENCE SUBJECTS



Read full article:

<https://www.nature.com/articles/s41467-025-63795-3>

## Safety and efficacy of one-dose nocturnal levetiracetam for the treatment of self-limited epilepsy with centrotemporal spikes: a randomized clinical trial

 2025-10-01  1 min  0 words



NATURE NEUROSCIENCE SUBJECTS



Read full article:

<https://www.nature.com/articles/s41598-025-11906-x>

## COVID-19 infection associated with increased risk of new-onset vascular dementia in adults $\geq 50$ years

 2025-10-01  1 min  0 words

NATURE NEUROSCIENCE SUBJECTS



Read full article:

<https://www.nature.com/articles/s44400-025-00034-y>

## The behavioural essence of episodic memory

 2025-10-01  1 min  0 words

NATURE NEUROSCIENCE SUBJECTS



Read full article:

<https://www.nature.com/articles/s44159-025-00501-6>

## Grid cells go local

 2025-10-01  1 min  0 words


NATURE NEUROSCIENCE SUBJECTS



Read full article:

<https://www.nature.com/articles/s41583-025-00978-3>

## Multiple sclerosis: molecular pathogenesis and therapeutic intervention

 2025-10-02  1 min  0 words

NATURE NEUROSCIENCE SUBJECTS






Read full article:

<https://www.nature.com/articles/s41392-025-02415-4>

## Facial expressions in mice reveal latent cognitive variables and their neural correlates

 Zachary F.  
Mainen

 2025-09-30  1  
min

 43  
words

NATURE NEUROSCIENCE

**Summary:**

Nature Neuroscience, Published online: 30 September 2025; [doi:10.1038/s41593-025-02071-5](https://www.nature.com/articles/s41593-025-02071-5)

The face reveals more than just emotion. Cazettes, Reato and colleagues show that subtle facial movements reveal hidden cognitive states, re...

 Read full article:

<https://www.nature.com/articles/s41593-025-02071-5>

## Biomarkers of immune dysregulation and posttreatment inflammation in spinal muscular atrophy

Sean C. JordanMojtaba BakhtiariSwati S. BhasinSumit VermaManoj K. BhasinaDivision of Pediatric Hematology/Oncology/BMT, Aflac Cancer and Blood Disorders Center, Children's Healthcare of Atlanta, Atlanta, GA 30329bDepartment of Biomedical Informatics, Emory University, Atlanta, GA 30322cDepartment of Pediatrics, Emory University School of Medicine, Atlanta, GA 30322

 2025-09-23  1  
min  54  
words

PNAS NEUROSCIENCE

**Summary:** Proceedings of the National Academy of Sciences, Volume 122, Issue 39, September 2025.   
SignificanceSpinal Muscular Atrophy (SMA) is best known as a genetic disorder that weakens motor neurons, but emerging evidence suggests the immune system also plays a role in how the disease progresses and ...

 Read full article:

<https://www.pnas.org/doi/abs/10.1073/pnas.2506976122?af=R>

## ALKBH5 demethylates the m6A modification of SOCS3 in microglia/macrophages and alleviates neuroinflammation after brain injury

Lin CaiYuqing LiangXiaoyu LiRunxi FuXingyu NiuYuxiao JinYuxin LiYuheng ZhangPei OuyangChen


WangQiuyuan GongYang YangLai WeiYao JingDianxu YangZhiming XuFang YuanJun DingHao

ChenBo PengYanxia RaoHengli TianaDepartment of Neurosurgery, Shanghai Sixth People's Hospital

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 Children's Hospital, Institute for Translational Brain Research, State Key Laboratory of Medical

Neurobiology, Ministry of Education Frontiers Center for Brain Science, Ministry of Education

Innovative Center for New Drug Development of Immune Inflammatory Diseases, Shanghai Key

Laboratory of Gene Editing and Cell Therapy for Rare Diseases, Fudan University, Shanghai 200032,

ChinadDepartment of Neurosurgery, Huashan Hospital, Fudan University, Shanghai 200040,

ChinaeDepartment of Pediatric Surgery, Xinhua Hospital Affiliated to Shanghai Jiao Tong University

School of Medicine, Shanghai Institute for Pediatric Research, Shanghai 200092, China

 2025-09-23  1 min  44 words

PNAS NEUROSCIENCE

**Summary:** Proceedings of the National Academy of Sciences, Volume 122, Issue 39, September 2025.   
SignificanceChronic neurological deficits following traumatic brain injury (TBI) are largely attributable to sustained neuroinflammation mediated by microglia/macrophages. This study identifies ALKBH5, the m...

 Read full article:

<https://www.pnas.org/doi/abs/10.1073/pnas.2504697122?af=R>



## Leveraging neuroinformatics to understand cognitive phenotypes in elite athletes through systems neuroscience



Qi

Yu

2025-08-19

1 min

152 words

FRONTIERS NEUROINFORMATICS

**Summary:** Introduction Understanding the cognitive phenotypes of elite athletes offers a unique perspective on the intricate interplay between neurological traits and high-performance behaviors. This study aligns with advancing neuroinformatics by proposing a novel framework designed to capture and analyze the...



Read full article:

<https://www.frontiersin.org/articles/10.3389/fninf.2025.1557879>

## Improving EEG classification of alcoholic and control subjects using DWT-CNN-BiGRU with various noise filtering techniques



Swati

Jain

2025-08-19

1 min

188 words

FRONTIERS NEUROINFORMATICS


**Summary:** Electroencephalogram (EEG) signal analysis plays a vital role in diagnosing and monitoring alcoholism, where accurate classification of individuals into alcoholic and control groups is essential. However, the inherent noise and complexity of EEG signals pose significant challenges. This study invest...




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## Large language models can extract metadata for annotation of human neuroimaging publications

 Jessica A. Turner

 2025-08-20

 1 min

 171 words


FRONTIERS NEUROINFORMATICS


**Summary:** We show that recent (mid-to-late 2024) commercial large language models (LLMs) are capable of good quality metadata extraction and annotation with very little work on the part of investigators for several exemplar real-world annotation tasks in the neuroimaging literature. We investigated the GPT-4o...

 Read full article:


<https://www.frontiersin.org/articles/10.3389/fninf.2025.1609077>

## A correlation-based tool for quantifying membrane periodic skeleton associated periodicity

 Hanne B. Rasmussen

 2025-08-22

 1 min

 156 words


FRONTIERS NEUROINFORMATICS


**Summary:** IntroductionThe advent of super-resolution microscopy revealed the membrane-associated periodic skeleton (MPS), a specialized neuronal cytoskeletal structure composed of actin rings spaced 190 nm apart by two spectrin dimers. While numerous ion channels, cell adhesion molecules, and signaling protei...

 Read full article:


<https://www.frontiersin.org/articles/10.3389/fninf.2025.1628538>

## Software and pipelines for registration and analyses of rodent brain image data in reference atlas space

 Jan G.  
Bjaalie

 17 2025-09-24

 1  
min

 207  
words


FRONTIERS NEUROINFORMATICS


**Summary:** Advancements in methodologies for efficient large-scale acquisition of high-resolution serial microscopy image data have opened new possibilities for experimental studies of cellular and subcellular features across whole brains in animal models. There is a high demand for open-source software and wo...

 Read full article:


<https://www.frontiersin.org/articles/10.3389/fninf.2025.1629388>

## Effects of AC induced electric fields on neuronal firing sensitivity and activity patterns

 Yueyang  
Zhao

 17 2025-09-18

 1  
min

 218  
words

FRONTIERS COMPUTATIONAL NEUROSCIENCE

**Summary:** Introduction Understanding how neurons respond to time-varying electric fields is essential for both basic neuroscience and the development of neuromodulation strategies. However, the mechanisms by which alternating-current induced electric fields (AC-IEF) influence neuronal sensitivity and firing re...

 Read full article:

<https://www.frontiersin.org/articles/10.3389/fncom.2025.1612314>

## Intrinsic calcium resonance and its modulation: insights from computational modeling



Hanoch  
Kaphzan



2025-09-18



1  
min



254  
words

FRONTIERS COMPUTATIONAL NEUROSCIENCE

**Summary:** Hippocampal neurons generate membrane potential resonance due to specific voltage-gated ion channels, known as resonating conductances, which play crucial physiological roles. However, it is not known whether this phenomenon of resonance is limited to membrane voltage or whether it propagates through...



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## Auricular acupressure combined with auricular acupoint massage enhances cognitive function in night shift nurses: a P300 wave analysis



Qian  
Zhong



2025-09-30



1  
min



251  
words

FRONTIERS HUMAN NEUROSCIENCE

**Summary:** Objectives Night-shift work is associated with cognitive impairments, but convenient, effective, and acceptable traditional Chinese medicine-based interventions remain limited. This study aimed to evaluate the effects of auricular acupressure combined with auricular acupoint massage on cognitive func...



Read full article:

<https://www.frontiersin.org/articles/10.3389/fnhum.2025.1626528>

## The impact of CSF-filled cavities on scalp EEG and its implications



Maria Carla  
Piastra



2024-06-14



1  
min



64  
words

OOSTENVELD ROBERT

**Summary:** Previous studies have found electroencephalogram (EEG) amplitude and scalp topography differences between neurotypical and neurological/neurosurgical groups, being interpreted at the cognitive level. However, these comparisons are invariably accompanied by anatomical changes. Critical to EEG are the...



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## Motion-BIDS: an extension to the brain imaging data structure to organize motion data for reproducible research



Julius  
Welzel



2024-07-02



1  
min



72  
words

OOSTENVELD ROBERT

**Summary:** We present an extension to the Brain Imaging Data Structure (BIDS) for motion data. Motion data is frequently recorded alongside human brain imaging and electrophysiological data. The goal of Motion-BIDS is to make motion data interoperable across different laboratories and with other data modalities...






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## One hundred years of EEG for brain and behaviour research

 Pedro Valdes-Sosa

 2024-08-22  1 min

 2 words

OOSTENVELD ROBERT



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## Freezing of gait in Parkinson's disease is related to imbalanced stopping-related cortical activity


 Richard J A van Wezel

 2024-09-04  1 min

 65 words

OOSTENVELD ROBERT


**Summary:** Freezing of gait, characterized by involuntary interruptions of walking, is a debilitating motor symptom of Parkinson's disease that restricts people's autonomy. Previous brain imaging studies investigating the mechanisms underlying freezing were restricted to scan people in supine positions and yie...


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## The past, present, and future of the brain imaging data structure (BIDS)

 Krzysztof J  
Gorgolewski


 2024-09-23

 1  
min

 82  
words

OOSTENVELD ROBERT


**Summary:** The Brain Imaging Data Structure (BIDS) is a community-driven standard for the organization of data and metadata from a growing range of neuroscience modalities. This paper is meant as a history of how the standard has developed and grown over time. We outline the principles behind the project, the ...


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## Human cortical high-gamma power scales with movement rate in healthy participants and stroke survivors

 Fanny  
Quandt

 2025-01-09

 1  
min

 65  
words

OOSTENVELD ROBERT


**Summary:** Motor cortical high-gamma oscillations (60-90 Hz) occur at movement onset and are spatially focused over the contralateral primary motor cortex. Although high-gamma oscillations are widely recognized for their significance in human motor control, their precise function on a cortical level remains el...

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## NIRS-BIDS: Brain Imaging Data Structure Extended to Near-Infrared Spectroscopy

 Luca  
Pollonini

 17

2025-01-27



1  
min



70  
words

OOSTENVELD ROBERT


**Summary:** Functional near-infrared spectroscopy (fNIRS) is an increasingly popular neuroimaging technique that measures cortical hemodynamic activity in a non-invasive and portable fashion. Although the fNIRS community has been successful in disseminating open-source processing tools and a standard file forma...

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## Pseudonymisation of neuroimages and data protection: Increasing access to data while retaining scientific utility

 Lyuba  
Zehl

 17

2025-06-26



1  
min



67  
words

OOSTENVELD ROBERT

**Summary:** For a number of years, facial features removal techniques such as 'defacing', 'skull stripping' and 'face masking/blurring', were considered adequate privacy preserving tools to openly share brain images. Scientifically, these measures were already a compromise between data protection requirements a...


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## Cycling on the Freeway: The perilous state of open-source neuroscience software

 Tim M  
Tierney


 2025-08-13

 1  
min

 74  
words

OOSTENVELD ROBERT


**Summary:** Most scientists need software to perform their research (Barker et al., 2020;Carver et al., 2022;Hettrick, 2014;Hettrick et al., 2014;Switters & Osimo, 2019), and neuroscientists are no exception. Whether we work with reaction times, electrophysiological signals, or magnetic resonance imaging data, ...


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## Optimal configuration of on-scalp OPMs with fixed channel counts

 Robert  
Oostenveld

 2025-08-13

 1  
min

 69  
words

OOSTENVELD ROBERT

**Summary:** Recent technological developments have brought optically pumped magnetometers (OPMs) within reach of the larger neuroscientific community. The current state-of-the-art consists of whole-head systems that measure the magnetic field at >100 locations. OPM sensors can be constructed to measure the fiel...



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
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## Case 341: Infratentorial Posterior Reversible Encephalopathy Syndrome Associated with Interferon- $\beta$ in Relapsing Multiple Sclerosis

 Joachim  
Fladt

 2025-09-30  1  
min

 67  
words

LOW VISION


**Summary:** A 36-year-old man with known history of relapsing multiple sclerosis (RMS) of 13-year duration who was undergoing continuous treatment with subcutaneous interferon- $\beta$  (INF- $\beta$ ) (44  $\mu$ g three times per week) presented to the emergency department of our hospital with blurry vision of 1-week duration. Rout...



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## Causes of Visual Impairment and Blindness in a Clinic Population from Puerto Rico

 Claudia Colón-  
Sanchez

 2025-09-30  1  
min

 56  
words

LOW VISION

**Summary:** CONCLUSION: This study provided insights into the causes of VI and blindness in Puerto Rico. These findings underscore the need for targeted interventions and public health initiatives to improve accessibility to visual rehabilitation. Further research is warranted to explore additional factors infl...

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## User cum expert judgement model for accessibility using fuzzy approach



Satinder  
Kaur



2025-09-30



1  
min



70  
words

LOW VISION

**Summary:** Well-designed websites play a pivotal role in technological innovation by improving accessibility, user interaction and digital inclusivity. It is crucial to evaluate website accessibility as it meets the diverse needs of its users and adheres to legal and ethical standards. Significant research has...



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