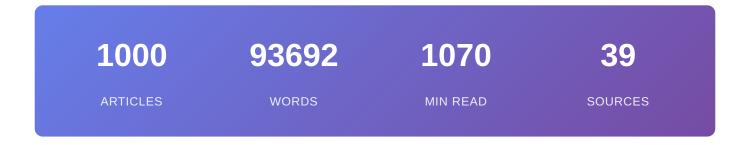


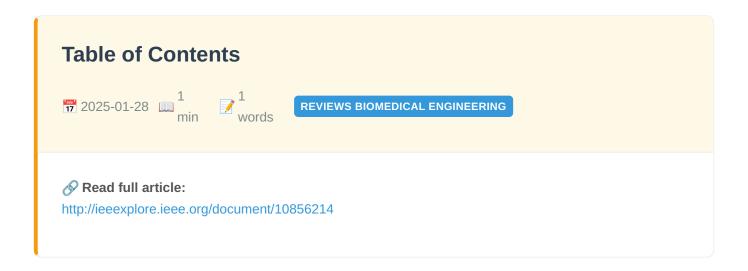
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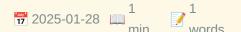
Monday, October 13, 2025



# Today's Top Stories



### **IEEE Engineering in Medicine and Biology Society**



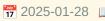


REVIEWS BIOMEDICAL ENGINEERING

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#### **Front Cover**







2025-01-28 min REVIEWS BIOMEDICAL ENGINEERING

http://ieeexplore.ieee.org/document/10856260

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





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...

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

1 251 min 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...

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

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





**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:

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

1 244 min 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)...

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

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





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...

# Impact of Transcutaneous Vagus Nerve Stimulation on Eventrelated Potentials during a Response Inhibition Task

1 157 min 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...

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

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





**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...

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







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...



http://ieeexplore.ieee.org/document/11153351

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







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...



# Galectin-3 in Alzheimer's disease: pathological roles, biomarker potential, and therapeutic implications

1 min

BRAIN RESEARCH

**Summary:** Publication date: 15 November 2025<b>Source:</b> Brain Research, Volume 1867Author(s): A Akash, Mustak Ahamed, Pratyush Porel, Khadga Raj Aran

https://www.sciencedirect.com/science/article/pii/S0006899325005128?dgcid=rss sd all

# Visuo-spatial functions mediate the association between cortical thickness of fronto-parietal areas and social processing abilities in congenital atypical development

1 min



NEUROIMAGE

**Summary:** Publication date: 1 November 2025<b>Source:</b> NeuroImage, Volume 321Author(s): Viola Oldrati, Elisabetta Ferrari, Niccolò Butti, Chiara Gagliardi, Romina Romaniello, Renato Borgatti, Denis Peruzzo, Cosimo Urgesi

https://www.sciencedirect.com/science/article/pii/S1053811925005154?dgcid=rss sd all

# Atlas-based analysis of diffusion imaging may predict efficacy of forelimb movement therapy for motor recovery in post-stroke rats





NEUROIMAGE

**Summary:** Publication date: 1 November 2025<b>Source:</b> NeuroImage, Volume 321Author(s): Xinxin Zhao, Jingjing Ruan, Bo Li, Jiahui Cheng, Jianrong Xu, Yulian Zhu, Ce Li, Yan Zhou



https://www.sciencedirect.com/science/article/pii/S1053811925005208?dgcid=rss\_sd\_all

# Developmental changes in phonological awareness in Chinese-English bilingual children: An fNIRS longitudinal study





NEUROIMAGE

**Summary:** Publication date: 1 November 2025<b>Source:</b> NeuroImage, Volume 321Author(s): Yueh-Lin Li, Li-Ying Fan, Hsin-Chin Chen, Shiou-Yuan Chen, Ioulia Kovelman, Tai-Li Chou



https://www.sciencedirect.com/science/article/pii/S1053811925005257?dqcid=rss\_sd\_all

#### Motor-related neural oscillations in mood disorders

NEUROIMAGE

Summary: Publication date: 1 November 2025<b>Source:</b> NeuroImage, Volume 321Author(s): Yi Xia, Xiaoqin Wang, Shujia Hu, Shuangyu Cai, Tingting Xiong, Junling Sheng, Rui Yan, Zhijian Yao, Qing Lu

#### 

https://www.sciencedirect.com/science/article/pii/S1053811925005269?dgcid=rss\_sd\_all

# VAE deep learning model with domain adaptation, transfer learning and harmonization for diagnostic classification from multi-site neuroimaging data









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 nonneural variability obscures neural differences between groups and leads to poor machine learning based diagnostic classification of neurodev...



https://www.frontiersin.org/articles/10.3389/fninf.2025.1553035

# Software and pipelines for registration and analyses of rodent brain image data in reference atlas space

Jan G. Bjaalie

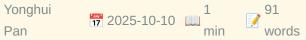
1 207 min words

FRONTIERS NEUROINFORMATICS

Summary: Advancements in methodologies for efficient large-scale acquisition of highresolution 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...

https://www.frontiersin.org/articles/10.3389/fninf.2025.1629388

## A summary of the current circumstances of migraineurs in China: a review of the GBD2019 database



FRONTIERS HUMAN NEUROSCIENCE

**Summary:** Migraine is a common, chronic and recurrent neurovascular disorder ranked by the WHO as one of the 20 most disabling conditions worldwide. Frequent and severe headaches can significantly impair patients' quality of life, learning capacity, and physical and mental health. On the basis of the Global B...

https://www.frontiersin.org/articles/10.3389/fnhum.2025.1626607

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

Maria Carla
Piastra

1
2024-06-14

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



1 72 min words

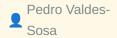
OOSTENVELD ROBERT

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...

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







OOSTENVELD ROBERT

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









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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https://pubmed.ncbi.nlm.nih.gov/39229492/?

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

Krzysztof J
Gorgolewski

1 2024-09-23 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

1 65 min 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...

#### 

https://pubmed.ncbi.nlm.nih.gov/39786979/?

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

Luca 1 70
Pollonini 2025-01-27 min 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: <em>Increasing access to data while retaining scientific utility</em>

Lyuba
Zehl

Zehl

Zo25-06-26 min

Zostenveld robert

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/?

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

Tim M
Tierney

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

1 69 min 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...

#### 

https://pubmed.ncbi.nlm.nih.gov/40800964/?

# Patient-reported vision impairment in low luminance relates to visual function in age-related macular degeneration: A MACUSTAR study report



**Summary:** Early stages of age-related macular degeneration (AMD) can lead to a number of visual function deficits, but the patient relevance of these deficits is largely unknown. We therefore investigated how bilateral visual function domains affected by age-related macular degeneration (AMD) are associated w...

#### **⊗** Read full article:

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# Multi-interactive feature embedding learning for medical image segmentation

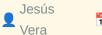


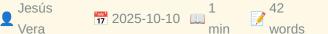
**Summary:** Medical image segmentation task can provide the lesion object semantic information, but ignores edge texture details from the lesion region. Conversely, the medical image reconstruction task furnishes the object detailed information to facilitate the semantic segmentation through self-supervised lea...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41070074/?

# Acute intraocular pressure changes during isometric exercise in glaucoma patients: the influence of exercise and intensity







LOW VISION

Summary: CONCLUSION: These findings suggest that while isometric exercises can elevate IOP temporarily, they may still be incorporated into training regimens for POAG patients if intensity is carefully managed. Careful monitoring of IOP is essential to avoid exacerbating glaucoma conditions during isometric ...

#### 

https://pubmed.ncbi.nlm.nih.gov/41071217/?

# Automated detection of pyogenic liver abscess and diagnosis of Klebsiella pneumoniae infection based on CECT images with deep learning: A multicenter study



Yi 1 38 Wang min words



Summary: CONCLUSIONS: The PLADA system provides an accurate, non-invasive method for KPLA diagnosis through a clinically interpretable two-stage AI framework. While limited by a retrospective, single-country dataset, this approach shows particular promise for early detection of KPLA in resource-limited settin...

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# Ocular Hypertension and Glaucoma After Pars Plana **Vitrectomy: A Systematic Review and Meta-analysis**



1 43 words





LOW VISION

Summary: CONCLUSIONS: PPV is associated with clinically meaningful risk of OHT and glaucoma, especially in pseudophakic eyes. Despite limitations from nonrandomized data and heterogeneity, these findings highlight lens status as a key modifier of post-PPV risk and support tailored surgical planning and posto...

#### Read full article:

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# Computer vision-based laser communication system for robust optical beam tracking and alignment



**Summary:** Free-space optical (FSO) communication is a promising technology for high-speed data transmission, but its effectiveness is highly dependent on precise beam alignment. In this work, we present a computer vision-assisted tracking system designed to maintain robust optical alignment in real time. By c...

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# Integrated petrophysical and seal characterization of the heterogeneous jurassic plover formation for CO<sub>2</sub> storage assessment in Northwest Australia



**Summary:** Geological storage of carbon dioxide is critical to mitigate emissions; however, subsurface heterogeneity poses a major challenge. This study investigates the Jurassic Plover Formation in the Browse Basin, Northwest Australia, a region underexplored for carbon storage potential. An integrated petrop...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41073534/?

# The Okanagan charter in action: mapping health promotion strategies in Italian state universities in 2025







LOW VISION

Summary: CONCLUSIONS: Italian universities showed a growing but uneven commitment to health promotion. Despite frequent references to wellbeing, its integration remains partial and sectoral. This study identified key areas for improvement, such as participation, and highlighted a selection of good practices....

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# **Quantifying Effects Of Lifestyle Changes On Progression To Advanced Age-Related Macular Degeneration In High Genetic Risk Individuals**







LOW VISION

Summary: CONCLUSION: Unhealthy behaviors increased incidence of AAMD by 3 to 5fold among a highly genetically susceptible population, and 56-60% of AAMD incidence was attributed to modifiable factors: smoking, high BMI, high caloric intake and low intake of foods rich in lutein-zeaxanthin and omega-3 fatty ...

#### **Read full article:**

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# Artificial intelligence in the non-clinical laboratory: enhancing good laboratory and documentation practices

Firman

1 65 min words

Summary: Non-clinical laboratories are under increasing regulatory pressure from agencies such as the FDA, EMA, and MHRA to ensure data integrity, traceability, and compliance with Good Laboratory Practice (GLP) and Good Documentation Practice (GDP). While Artificial Intelligence (AI) has been widely explore...

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



1 70 min 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...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/40434896/?

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

Hiroyuki
Kajimoto

75 TACTILE ACUITY words

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 1 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...

#### 

https://pubmed.ncbi.nlm.nih.gov/40577301/?

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

Alex R

Bowers

1

2025-07-02

min

80

words

TACTILE ACUITY

Summary: Vision impairment may delay responses to hazards when driving. In a proof-ofconcept 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



1 64 min 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...

#### Read full article:

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

Eric 1 2025-08-24 min 22 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



**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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https://pubmed.ncbi.nlm.nih.gov/40924900/?

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

Sviatoslav N Bagriantsev

1 2025-09-13 min 58 TACTILE ACUITY words

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

Greenspon

1 86 min 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...

#### 

https://pubmed.ncbi.nlm.nih.gov/40964349/?

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

Runar 1 65 TACTILE ACUITY words

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



**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...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/40854103/?

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



Million 1 46
Phiri 2025-08-26 min words

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...

#### **⊗** Read full article:

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### **Explosion-powered eversible tactile displays**



1 64 min 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...

#### 

https://pubmed.ncbi.nlm.nih.gov/40864730/?

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







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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https://pubmed.ncbi.nlm.nih.gov/40874468/?

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











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 ...

#### 

https://pubmed.ncbi.nlm.nih.gov/40871941/?

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



**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...

#### **⊗** Read full article:

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



**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:

https://pubmed.ncbi.nlm.nih.gov/40891563/?

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





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 rightsbased approach-emphasizing inclusive fun...

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https://pubmed.ncbi.nlm.nih.gov/40937808/?

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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









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:

https://pubmed.ncbi.nlm.nih.gov/41013315/?

# **Development and Assessment of a Novel Audiosensory** Performance Method for Improving the Oral Health of Visually **Impaired Children**







**Summary:** This study evaluated the effectiveness of an audiosensory performance method in enhancing oral health knowledge and status among visually impaired children aged 6-12 years in the National Capital Region (NCR), Delhi. An interventional study design was used, involving 251 participants equally divided...

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# Reply to Simani et al. Home-Based tDCS: Safety **Considerations and Technical Monitoring**







TDCS TACS TRNS

### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41067686/?

# Comparative chloroplast genomics of Erigeron (Asteroideae, Asteraceae)

Xiaoxuan
Tian

Tia

Summary: The genus Erigeron L. (Astereae, Asteroideae, Asteraceae), commonly known as fleabanes, comprises approximately 457 species with a near-cosmopolitan distribution. However, taxonomic discrepancies persist within the genus. In this study, the complete chloroplast (cp.) genomes of 16 Erigeron species w...

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# Can transcranial direct current stimulation aimed at reducing mind wandering alleviate depression?



1 2025-10-10 min words

#### 

https://pubmed.ncbi.nlm.nih.gov/41069944/?

# Transcranial Direct Current Stimulation as a Therapeutic **Approach for Anxiety and Related Markers: Comprehensive Systematic Review**

Rosa Maria Martins de

1 50 TDCS TACS TRNS words

Summary: CONCLUSIONS: The review highlights a lack of standardized protocols for using tDCS in treating anxiety. The methodological quality of most studies was critically low, per PRISMA guidelines. There was considerable variation in methodological approaches across the studies, indicating a need for standa...

#### **⊗** Read full article:

https://pubmed.ncbi.nlm.nih.gov/41071919/?

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# The role of the medial prefrontal cortex in risk and time preferences: A tDCS study



Fan 1 70 Li 2025-10-10 min words

TDCS TACS TRNS

**Summary:** Risk and time preferences are fundamental determinants of economic decision making. Although medial prefrontal cortex (mPFC) activity has been associated with valuation across these domains, causal evidence that focal mPFC perturbation alters both risky and intertemporal choices remains limited. In ...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41072297/?

# Cerebellar transcranial direct current stimulation combined with virtual reality training for the balance of older adults: study protocol for a randomized controlled trial







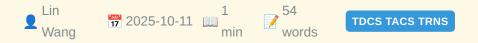
TDCS TACS TRNS

Summary: BACKGROUND: Falls are a major public safety issue, and improving the posture control ability of elderly people is highly important for preventing falls. Transcranial direct current stimulation (tDCS) and virtual reality-based balance training (VRBT) have been proven to be effective in improving post...

#### 

https://pubmed.ncbi.nlm.nih.gov/41074127/?

Effects of transcranial direct current stimulation on foot sensorimotor function and postural control in healthy young adults: A systematic review and meta-analysis based on randomized controlled trials



**Summary:** CONCLUSION: In conclusion, the current evidence suggested that tDCS may enhance ankle joint proprioception in healthy young adults, while no significant improvements were observed in foot muscle strength or static and dynamic postural control. Further research is warranted to determine the optimal s...

#### 

https://pubmed.ncbi.nlm.nih.gov/41075626/?

# "Shadow government": how transcription factors regulate plant cell wall formation

Natalya
Syrchina

1 2025-10-11 min 66 TDCS TACS TRNS

Summary: The plant cell wall is a dynamic, structurally complex supramolecular compartment essential for the development, defense, and adaptation of plants to their environment. While the biosynthesis and transcriptional regulation of secondary cell walls (SCWs) have been extensively studied and are relative...

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https://pubmed.ncbi.nlm.nih.gov/41075738/?

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# Lcn2 from neutrophil extracellular traps induces astrogliosis and post-stroke emotional disorders

Zhengrun

1 63 min words

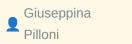
**TDCS TACS TRNS** 

**Summary:** Patients with an ischemic stroke are often predisposed to emotional disorders. However, the mechanisms underlying post-stroke emotional disorders (PSEDs) remain unclear. Recent research highlights the role of neuroinflammation, driven primarily by infiltration of circulating immune cells within the ...

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https://pubmed.ncbi.nlm.nih.gov/41075784/?

# Response to Vogelmann et al: Contextualizing Home-Based tDCS Safety: The Remotely Supervised Model







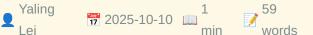
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# **Exploring the neural mechanisms of electroacupuncture for** cognitive impairment in depression using functional nearinfrared spectroscopy: a randomized controlled trial











Summary: CONCLUSION: Compared with pharmacotherapy alone, the combination of pharmacotherapy with electroacupuncture improved cognitive symptoms, mood, and executive function more effectively in patients with depression over a short period. In addition, this combination was associated with enhanced cortical ...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41069950/?

# Task-specific cortical mechanisms of taVNS-paired taskoriented training for post-stroke upper extremity dysfunction under cognitive load: an fNIRS study



1 57 min words



Summary: CONCLUSION: taVNS paired with TOT enhances autonomic homeostasis, increases corticospinal pathway excitability, activates cognition-motor related brain regions, and modulates functional connectivity networks through multi-pathway neuroregulatory mechanisms. This promotes the formation of task-specif...

#### **⊗** Read full article:

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# Multimodal MBC-ATT: cross-modality attentional fusion of **EEG-fNIRS** for cognitive state decoding



1 63 min words





FNIRS

Summary: With the rapid development of brain-computer interface (BCI) technology, the effective integration of multimodal biological signals to improve classification accuracy has become a research hotspot. However, existing methods often fail to fully exploit crossmodality correlations in complex cognitive...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41070190/?

Prefrontal cortex activity during virtual obstacle avoidance and distracted walking: A methodological proof of concept using augmented reality and functional near-infrared spectroscopy



**Summary:** CONCLUSIONS: This combination of technologies elicited task-dependent modulation in PFC activity and gait behaviours in healthy adults, confirming the efficacy of AR-projected obstacles in a cognitive-motor dual-task paradigm. Based on these outcomes, it is likely that this experimental approach wil...

#### 

https://pubmed.ncbi.nlm.nih.gov/41071803/?

Effect of mahjong, a Chinese tiled-based game, combined with upper limb robot training on upper limb function and rehabilitation participation in Chinese stroke patients: a clinical trial protocol









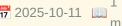
Summary: INTRODUCTION: Stroke is the second leading cause of death and disability creating a huge economic burden annually. Robot-assisted training (RT) is a promising therapy in stroke rehabilitation, but for the elderly, traditional 'reaching objects'" tasks do not seem to create sufficient motivation, an ...

#### 

https://pubmed.ncbi.nlm.nih.gov/41073118/?

# **Effect of Intelligence Quotient Discrepancy on Attention and Executive Function in Children with Attention Deficit Hyperactivity Disorder: An fNIRS Study**









Summary: Intelligence quotient discrepancy (IQD) is associated with neurodevelopmental disorders, but its impact on attention and executive function (EF) deficits in children with attention deficit hyperactivity disorder (ADHD) is unknown. This study aimed to examine the effect of IQD by functional near-infra...

#### 

https://pubmed.ncbi.nlm.nih.gov/41076036/?

# Developmental changes in phonological awareness in Chinese-English bilingual children: An fNIRS longitudinal study



Tai-Li
Chou
Tai-Li
To
words



Summary: Learning to read triggers a cascade of changes in children's minds and brains, changes that lead to the formation of the "reading brain". Importantly, the developmental trajectory of these changes differs across languages. The development of phonological literacy skills comes first for learners of a...

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# Sensitivity Analysis of the Balloon Model Parameters in **Functional Near-Infrared Spectroscopy Simulation**







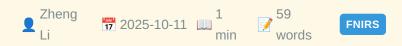


Summary: CONCLUSIONS: The fNIRS hemodynamic response is highly sensitive to the Balloon model's  $\alpha$  and  $\tau$  parameters. These findings highlight the importance of accounting for physiological variability in fNIRS analysis and provide a robust framework for generating synthetic data to test signal processing algo...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41076093/?

# Machine learning assessment of cognitive reserve using functional near-infrared spectroscopy in older adults with cognitive frailty



**Summary:** Cognitive reserve mitigates aging-related cognitive decline and frailty, yet current assessments lack neurobiological specificity. We aimed to develop a noninvasive, functional near infrared spectroscopy (fNIRS)-based machine learning model to classify cognitive reserve levels in older adults with c...

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# Exploring age and hemispheric differences in cortical plasticity after iTBS using fNIRS



**Summary:** Non-invasive brain stimulation applied to the prefrontal cortex (PFC) has been shown to improve cognitive outcomes in older adults with cognitive impairments (Miller et al., 2023). However, the differential impact of left versus right dorsolateral prefrontal cortex (DLPFC) stimulation on prefrontal ...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41077115/?

### Does increasing canopy liana density decrease the tropical forest carbon sink?

David M
DeFilippis

DeFilippis

David M
To 2025-10-09
To words

BRAIN COMPUTER INTERFACE

Summary: The ongoing decline in the American tropical forest carbon sink has serious ramifications for atmospheric carbon levels and global climate change. Increasing liana abundance may explain the decaying carbon sink because lianas reduce canopy tree growth and survival, which limits forest carbon storage...

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# Correction: Filter bank common spatial pattern and envelopebased features in multimodal EEG-fTCD brain-computer interfaces

PLOS One Staff 1 2025-10-09 in min words BRAIN COMPUTER INTERFACE

Summary: [This corrects the article DOI: 10.1371/journal.pone.0311075.].

#### **⊗** Read full article:

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# Multimodal MBC-ATT: cross-modality attentional fusion of **EEG-fNIRS** for cognitive state decoding

Peng 1 63
Wusp min words

BRAIN COMPUTER INTERFACE

Summary: With the rapid development of brain-computer interface (BCI) technology, the effective integration of multimodal biological signals to improve classification accuracy has become a research hotspot. However, existing methods often fail to fully exploit crossmodality correlations in complex cognitive...

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# Three-dimensional microsurgical anatomy of the basal aspect of the cerebrum: a fiber dissection study

1 2025-10-10 min 29 words

BRAIN COMPUTER INTERFACE

**Summary:** CONCLUSIONS: The 3D microsurgical anatomy of the basal cerebrum provides valuable insights for planning precise and safe surgical approaches and offers anatomical evidence for further studies on brain function.

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# A multi-level teacher assistant-based knowledge distillation framework with dynamic feedback for motor imagery EEG decoding



**Summary:** Deep learning has shown promise in motor imagery-based electroencephalogram (MI-EEG) decoding, a critical task in non-invasive brain-computer interfaces (BCIs). In response to the computational complexity of deep learning models to be deployed in practical BCI applications, knowledge distillation (K...

#### **⊗** Read full article:

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+e462414

# **EEG-CLIP: A transformer-based framework for EEG-guided** image generation

Daoqiang
Zhang

Daoqiang
Tir 2025-10-10

Tir 2025-10-10

Tir 2025-10-10

Tir 2025-10-10

Tir 2025-10-10

Tir 2025-10-10

**Summary:** Decoding visual perception from neural signals represents a fundamental step toward advanced brain-computer interfaces (BCIs), where functional magnetic resonance imaging (fMRI) has shown promising results despite practical constraints in deployment and costs. Electroencephalography (EEG), with its ...

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## Novel analysis method to determine the neural activation function of the inner hair cell



1 79 min words

BRAIN COMPUTER INTERFACE

Summary: Sensorineural hearing loss (SNH) is one of the most common forms of hearing loss. A special form of SNH is hidden hearing loss (HHL) with subjective normal hearing. Current research results indicate that these patients demonstrate a reduced wave I in the averaged signal of brainstem audiometry (ABR)...

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# Retraction notice to "Decoding thoughts, encoding ethics: A narrative review of the BCI-AI revolution" [Brain Res. 1850 (2025) 149423]







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# **Abnormal Brain Connectivity Patterns in Children with Global Developmental Delay Accompanied by Cognitive Impairment:** A Resting-State EEG Study







BRAIN COMPUTER INTERFACE

Summary: CONCLUSIONS: Children with GDD exhibit abnormal patterns of brain functional connectivity, characterized by global hypo-connectivity and local hyperconnectivity. Specific network metrics under these abnormal patterns are significantly correlated with cognitive impairment in GDD. This study also hig...

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# Sensitivity Analysis of the Balloon Model Parameters in **Functional Near-Infrared Spectroscopy Simulation**



Murad
Althobaiti

1
2025-10-11
min

43
BRAIN COMPUTER INTERFACE

Summary: CONCLUSIONS: The fNIRS hemodynamic response is highly sensitive to the Balloon model's  $\alpha$  and  $\tau$  parameters. These findings highlight the importance of accounting for physiological variability in fNIRS analysis and provide a robust framework for generating synthetic data to test signal processing algo...

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### **Putting a Dumb Weather Station on the Internet**





Summary: <a href="https://news.ycombinator.com/item?id=45507444">Comments</a>



https://colincogle.name/blog/byo-weather-station/

# A 'brain-first' mouse model of progressive alpha-synuclein pathology via intranasal rotenone administration

Sharma, M., Sharma, N., Soni, J., Uttarkar, M., Ruda-Kucerova, J., Outeiro, T. F., Rektorova, I., Khairnar, A.



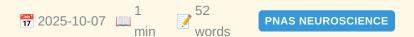
**Summary:** The precise aetiology of Parkinson's disease (PD) is still poorly understood, but it is thought to arise due to an intricate relationship between genes and the environment. Our study takes a unique approach to understanding the effect of environmental factors on the onset and progression of -synucle...

https://www.biorxiv.org/content/10.1101/2025.10.10.677764v1?rss=1

### When noncanonical olfaction is optimal

Caitlin LienkaemperMeg A. YoungerGabriel Koch OckeraDepartment of Mathematics and Statistics, Boston University, Boston, MA 02215bCenter for Systems Neuroscience, Boston University, Boston,

■ MA 02215cDepartment of Biology, Boston University, Boston, MA 02215dDepartment of Bioengineering, Center for Neurophotonics, Boston University, Boston, MA 02215eCenter for Neurophotonics, Boston University, Boston, MA 02215



**Summary:** Proceedings of the National Academy of Sciences, Volume 122, Issue 41, October 2025. <br/>
SignificanceThe canonical model of early olfaction is that each olfactory sensory neuron (OSN) expresses one type of olfactory receptor, and neurons with the same receptor project to the same downstream glomer...

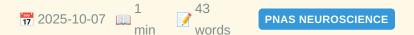
**⊗** Read full article:

https://www.pnas.org/doi/abs/10.1073/pnas.2508439122?af=R

# Biologically grounded neocortex computational primitives implemented on neuromorphic hardware improve vision transformer performance

Asim IqbalHassan MahmoodGreg J. StuartGord FishellSuraj HonnuraiahaTibbling Technologies, Seattle, WA 98052-5727bJohn Curtin School of Medical Research, Eccles Institute of Neuroscience, Australian National University, Canberra, ACT 2601, AustraliacDepartment of Physiology, Monash

■ University, Melbourne, VIC 3800, AustraliadHarvard Medical School, Blavatnik Institute, Department of Neurobiology, Boston, MA 02115eStanley Center for Psychiatric Research, Broad Institute of MIT and Harvard, Cambridge, MA 02142fInstitute of Neuroinformatics, ETH Zurich and University of Zurich, Zurich CH-8057, Switzerland



**Summary:** Proceedings of the National Academy of Sciences, Volume 122, Issue 41, October 2025. <br/>
SignificanceWe implement a biologically grounded cortical circuit motif in neuromorphic hardware and AI architectures to show how experimentally informed neocortical computations, realized through cell-type-sp...

https://www.pnas.org/doi/abs/10.1073/pnas.2504164122?af=R

# CRISP: a correlation-filtered recursive feature elimination and integration of SMOTE pipeline for gait-based Parkinson's disease screening



FRONTIERS COMPUTATIONAL NEUROSCIENCE

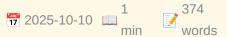
**Summary:** IntroductionParkinson's disease (PD) is the fastest-growing neurodegenerative disorder, with subtle gait changes such as reduced vertical ground-reaction forces (VGRF) often preceding motor symptoms. These gait abnormalities, measurable via wearable VGRF sensors, offer a non-invasive means for early...

Read full article:

https://www.frontiersin.org/articles/10.3389/fncom.2025.1660963

# Efficacy of snap-needle patch therapy in pediatric epilepsy: a case study







FRONTIERS HUMAN NEUROSCIENCE

**Summary:** BackgroundsEpilepsy is a prevalent neurological disorder in early childhood, often characterized by genetic predisposition and diverse clinical manifestations. Benign epilepsy of childhood with central temporal spikes (BECTS) is the most common form of self-limited focal epilepsy (SeLFE) syndrome in...

**Read full article:** 

https://www.frontiersin.org/articles/10.3389/fnhum.2025.1618266

# The articulatory basis of phonological error patterns in childhood speech sound disorders

Pascal Van Lieshout

1 237 min words

FRONTIERS HUMAN NEUROSCIENCE

Summary: Speech acquisition involves complex coordination of articulatory structures, primarily the jaw, lips, and tongue. Typically developing children acquire speech sounds in a hierarchical sequence governed by progressive neuromotor maturation. However, disruptions in speech motor control can lead to sys...

https://www.frontiersin.org/articles/10.3389/fnhum.2025.1635096

# Modeling dyslexia in neurotypical adults by combining neuroimaging and neuromodulation techniques: a hypothesis paper

1 263 min words

FRONTIERS HUMAN NEUROSCIENCE

**Summary:** Dyslexia is a prevalent developmental disorder marked by deficits in literacy skills. Given that the core deficits of dyslexia are uniquely human, animal models have not been as useful in dyslexia research as they have been in other areas of research. While significant progress has been made through...

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https://www.frontiersin.org/articles/10.3389/fnhum.2025.1651332

# Toward accurate single image sand dust removal by utilizing uncertainty-aware neural network



Yixin 1 189
Wang min words



FRONTIERS NEUROROBOTICS

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...



https://www.frontiersin.org/articles/10.3389/fnbot.2025.1575995

# EEG synchronization signatures for decoding attentional states during continuous force control



■ Dangxiao 1 280 Wang min words



FRONTIERS NEUROSCIENCE

Summary: IntroductionMind wandering, the shift of attention from an ongoing task to taskunrelated thoughts, is a pervasive cognitive phenomenon often accompanied by detrimental consequences for task performance. While extensively studied in visual and auditory paradigms, attentional fluctuations during visu...



https://www.frontiersin.org/articles/10.3389/fnins.2025.1654827

In silico prediction of the impact of genomic variations in the small conductance calcium activated potassium channel SK3 structure and function

1 235 min words

FRONTIERS NEUROSCIENCE

Summary: The small-conductance calcium-activated potassium channel SK3, encoded by the KCNN3 gene, plays a critical role in regulating dopaminergic neuron (DN) firing patterns by modulating after hyperpolarization currents. SK3 dysfunction has been implicated in neuropsychiatric and neurodegenerative disorde...

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https://www.frontiersin.org/articles/10.3389/fnins.2025.1631536

Ultrafine brain intrinsic connectivity networks template via very-high-order independent component analysis of largescale resting-state functional magnetic resonance imaging data



Armin 196
Iraii words



FRONTIERS NEUROSCIENCE

Summary: Spatial group independent component analysis (sgr-ICA) is widely used in resting-state fMRI to identify intrinsic connectivity networks (ICNs). While lower-order decompositions reveal large-scale networks, higher-order models provide finer granularity but have been limited by small sample sizes. In ...

https://www.frontiersin.org/articles/10.3389/fnins.2025.1672129

Neural network reconstruction and motor function recovery in traumatic brain injury rat models via a 3D collagen/ heparan/bFGF/NGF scaffold combined with mesenchymal stem cells COMBINED SCAFFOLD-MSC THERAPY FOR TBI REPAIR







JOURNAL NEURAL ENGINEERING

**Summary:** Objective. To address the limited innate regenerative capacity of neural tissues following traumatic brain injury (TBI) by developing a novel therapeutic intervention. Approach. We engineered a composite scaffold using 3D bioprinting to integrate mesenchymal stem cells (MSCs) with collagen-heparan m...

#### 

http://iopscience.iop.org/article/10.1088/1741-2552/ae09fd

# Source-free domain adaptation for SSVEP-based braincomputer interfaces

Osman Berke Guney, Deniz Kucukahmetler and Huseyin Ozkan

1 2025-10-08 min

216 words

JOURNAL NEURAL ENGINEERING

Summary: Objective. Steady-state visually evoked potential-based Brain-computer interface (BCI) spellers assist individuals experiencing speech difficulties by enabling them to communicate at a fast rate. However, achieving a high information transfer rate (ITR) in most prominent methods requires an extensiv...

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http://iopscience.iop.org/article/10.1088/1741-2552/ae0c3d

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







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 .

1 72 2024-07-02 min words OOSTENVELD ROBERT

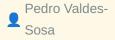
Summary: We present an extension to the Brain Imaging Data Structure (BIDS) for motion data. Motion data is frequently recorded alongside human brain imaging and electrophysiological data. The goal of Motion-BIDS is to make motion data interoperable across different laboratories and with other data modalitie...

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









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

1 65 min 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 1 82 min 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

1 65 min 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**



1 70 min 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: <em>Increasing access to data while retaining scientific utility</em>



Lyuba
Zehl

Zehl

Zo25-06-26 min

Zostenveld robert

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:

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



1 74 min 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 1 69
Oostenveld min words

OOSTENVELD ROBERT

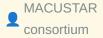
Summary: Recent technological developments have brought optically pumped magnetometers (OPMs) within reach of the larger neuroscientific community. The current state-of-the-art consists of whole-head systems that measure the magnetic field at >100 locations. OPM sensors can be constructed to measure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

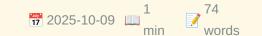
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# Patient-reported vision impairment in low luminance relates to visual function in age-related macular degeneration: A **MACUSTAR** study report







LOW VISION

Summary: Early stages of age-related macular degeneration (AMD) can lead to a number of visual function deficits, but the patient relevance of these deficits is largely unknown. We therefore investigated how bilateral visual function domains affected by age-related macular degeneration (AMD) are associated w...

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# Multi-interactive feature embedding learning for medical image segmentation



Yue 1 66

LOW VISION

Summary: Medical image segmentation task can provide the lesion object semantic information, but ignores edge texture details from the lesion region. Conversely, the medical image reconstruction task furnishes the object detailed information to facilitate the semantic segmentation through self-supervised lea...

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# Acute intraocular pressure changes during isometric exercise in glaucoma patients: the influence of exercise and intensity



1 42 min words





LOW VISION

Summary: CONCLUSION: These findings suggest that while isometric exercises can elevate IOP temporarily, they may still be incorporated into training regimens for POAG patients if intensity is carefully managed. Careful monitoring of IOP is essential to avoid exacerbating glaucoma conditions during isometric ...

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# Automated detection of pyogenic liver abscess and diagnosis of Klebsiella pneumoniae infection based on CECT images with deep learning: A multicenter study



**Summary:** CONCLUSIONS: The PLADA system provides an accurate, non-invasive method for KPLA diagnosis through a clinically interpretable two-stage AI framework. While limited by a retrospective, single-country dataset, this approach shows particular promise for early detection of KPLA in resource-limited settin...

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# Ocular Hypertension and Glaucoma After Pars Plana Vitrectomy: A Systematic Review and Meta-analysis



**Summary:** CONCLUSIONS: PPV is associated with clinically meaningful risk of OHT and glaucoma, especially in pseudophakic eyes. Despite limitations from nonrandomized data and heterogeneity, these findings highlight lens status as a key modifier of post-PPV risk and support tailored surgical planning and posto...

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# Computer vision-based laser communication system for robust optical beam tracking and alignment



**Summary:** Free-space optical (FSO) communication is a promising technology for high-speed data transmission, but its effectiveness is highly dependent on precise beam alignment. In this work, we present a computer vision-assisted tracking system designed to maintain robust optical alignment in real time. By c...

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# Integrated petrophysical and seal characterization of the heterogeneous jurassic plover formation for CO<sub>2</sub> storage assessment in Northwest Australia



**Summary:** Geological storage of carbon dioxide is critical to mitigate emissions; however, subsurface heterogeneity poses a major challenge. This study investigates the Jurassic Plover Formation in the Browse Basin, Northwest Australia, a region underexplored for carbon storage potential. An integrated petrop...

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# The Okanagan charter in action: mapping health promotion strategies in Italian state universities in 2025







LOW VISION

Summary: CONCLUSIONS: Italian universities showed a growing but uneven commitment to health promotion. Despite frequent references to wellbeing, its integration remains partial and sectoral. This study identified key areas for improvement, such as participation, and highlighted a selection of good practices....

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# **Quantifying Effects Of Lifestyle Changes On Progression To Advanced Age-Related Macular Degeneration In High Genetic Risk Individuals**







LOW VISION

Summary: CONCLUSION: Unhealthy behaviors increased incidence of AAMD by 3 to 5fold among a highly genetically susceptible population, and 56-60% of AAMD incidence was attributed to modifiable factors: smoking, high BMI, high caloric intake and low intake of foods rich in lutein-zeaxanthin and omega-3 fatty ...

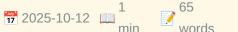
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# Artificial intelligence in the non-clinical laboratory: enhancing good laboratory and documentation practices









Summary: Non-clinical laboratories are under increasing regulatory pressure from agencies such as the FDA, EMA, and MHRA to ensure data integrity, traceability, and compliance with Good Laboratory Practice (GLP) and Good Documentation Practice (GDP). While Artificial Intelligence (AI) has been widely explore...

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









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...

#### Read full article:

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

Hiroyuki
Kajimoto

75 TACTILE ACUITY words

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 1 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...

#### 

https://pubmed.ncbi.nlm.nih.gov/40577301/?

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

Alex R

Bowers

1

2025-07-02

min

80

words

TACTILE ACUITY

Summary: Vision impairment may delay responses to hazards when driving. In a proof-ofconcept 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



1 64 min 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...

#### Read full article:

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

Eric 1 2025-08-24 min 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



**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...

#### 

https://pubmed.ncbi.nlm.nih.gov/40924900/?

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

Sviatoslav N Bagriantsev

1 2025-09-13 min 58 TACTILE ACUITY words

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

Greenspon

1 86 min 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...

#### 

https://pubmed.ncbi.nlm.nih.gov/40964349/?

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

Runar 1 65 Words Words

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



**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...

#### Read full article:

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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 1 46
Phiri 2025-08-26 min words

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...

### **⊗** Read full article:

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### **Explosion-powered eversible tactile displays**



1 64 min 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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https://pubmed.ncbi.nlm.nih.gov/40864730/?

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







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











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 ...

### 

https://pubmed.ncbi.nlm.nih.gov/40871941/?

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



**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



**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:

https://pubmed.ncbi.nlm.nih.gov/40891563/?

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

Önder

1 55 min words

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 rightsbased approach-emphasizing inclusive fun...

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https://pubmed.ncbi.nlm.nih.gov/40937808/?

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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



1 42 min words

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:

https://pubmed.ncbi.nlm.nih.gov/41013315/?

# **Development and Assessment of a Novel Audiosensory** Performance Method for Improving the Oral Health of Visually **Impaired Children**







**Summary:** This study evaluated the effectiveness of an audiosensory performance method in enhancing oral health knowledge and status among visually impaired children aged 6-12 years in the National Capital Region (NCR), Delhi. An interventional study design was used, involving 251 participants equally divided...

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https://pubmed.ncbi.nlm.nih.gov/41041413/?

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# Reply to Simani et al. Home-Based tDCS: Safety **Considerations and Technical Monitoring**









### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41067686/?

# Comparative chloroplast genomics of Erigeron (Asteroideae, Asteraceae)

Xiaoxuan
Tian

Tia

Summary: The genus Erigeron L. (Astereae, Asteroideae, Asteraceae), commonly known as fleabanes, comprises approximately 457 species with a near-cosmopolitan distribution. However, taxonomic discrepancies persist within the genus. In this study, the complete chloroplast (cp.) genomes of 16 Erigeron species w...

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https://pubmed.ncbi.nlm.nih.gov/41068593/?

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# Can transcranial direct current stimulation aimed at reducing mind wandering alleviate depression?



1 2025-10-10 min words

### 

https://pubmed.ncbi.nlm.nih.gov/41069944/?

# Transcranial Direct Current Stimulation as a Therapeutic **Approach for Anxiety and Related Markers: Comprehensive Systematic Review**

Rosa Maria Martins de

1 50 TDCS TACS TRNS words

Summary: CONCLUSIONS: The review highlights a lack of standardized protocols for using tDCS in treating anxiety. The methodological quality of most studies was critically low, per PRISMA guidelines. There was considerable variation in methodological approaches across the studies, indicating a need for standa...

### **⊗** Read full article:

https://pubmed.ncbi.nlm.nih.gov/41071919/?

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# The role of the medial prefrontal cortex in risk and time preferences: A tDCS study



Fan 1 70 Li 2025-10-10 min words

TDCS TACS TRNS

**Summary:** Risk and time preferences are fundamental determinants of economic decision making. Although medial prefrontal cortex (mPFC) activity has been associated with valuation across these domains, causal evidence that focal mPFC perturbation alters both risky and intertemporal choices remains limited. In ...

### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41072297/?

# Cerebellar transcranial direct current stimulation combined with virtual reality training for the balance of older adults: study protocol for a randomized controlled trial







TDCS TACS TRNS

Summary: BACKGROUND: Falls are a major public safety issue, and improving the posture control ability of elderly people is highly important for preventing falls. Transcranial direct current stimulation (tDCS) and virtual reality-based balance training (VRBT) have been proven to be effective in improving post...

### 

https://pubmed.ncbi.nlm.nih.gov/41074127/?

Effects of transcranial direct current stimulation on foot sensorimotor function and postural control in healthy young adults: A systematic review and meta-analysis based on randomized controlled trials



**Summary:** CONCLUSION: In conclusion, the current evidence suggested that tDCS may enhance ankle joint proprioception in healthy young adults, while no significant improvements were observed in foot muscle strength or static and dynamic postural control. Further research is warranted to determine the optimal s...

### 

https://pubmed.ncbi.nlm.nih.gov/41075626/?

# "Shadow government": how transcription factors regulate plant cell wall formation

Natalya
Syrchina

1 2025-10-11 min 66 TDCS TACS TRNS

Summary: The plant cell wall is a dynamic, structurally complex supramolecular compartment essential for the development, defense, and adaptation of plants to their environment. While the biosynthesis and transcriptional regulation of secondary cell walls (SCWs) have been extensively studied and are relative...

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https://pubmed.ncbi.nlm.nih.gov/41075738/?

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# Lcn2 from neutrophil extracellular traps induces astrogliosis and post-stroke emotional disorders

Zhengrun

1 63 min words

**TDCS TACS TRNS** 

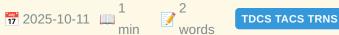
**Summary:** Patients with an ischemic stroke are often predisposed to emotional disorders. However, the mechanisms underlying post-stroke emotional disorders (PSEDs) remain unclear. Recent research highlights the role of neuroinflammation, driven primarily by infiltration of circulating immune cells within the ...

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https://pubmed.ncbi.nlm.nih.gov/41075784/?

# Response to Vogelmann et al: Contextualizing Home-Based tDCS Safety: The Remotely Supervised Model







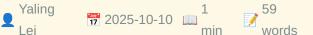
### Read full article:

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# **Exploring the neural mechanisms of electroacupuncture for** cognitive impairment in depression using functional nearinfrared spectroscopy: a randomized controlled trial











Summary: CONCLUSION: Compared with pharmacotherapy alone, the combination of pharmacotherapy with electroacupuncture improved cognitive symptoms, mood, and executive function more effectively in patients with depression over a short period. In addition, this combination was associated with enhanced cortical ...

### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41069950/?

# Task-specific cortical mechanisms of taVNS-paired taskoriented training for post-stroke upper extremity dysfunction under cognitive load: an fNIRS study



1 57 min words



Summary: CONCLUSION: taVNS paired with TOT enhances autonomic homeostasis, increases corticospinal pathway excitability, activates cognition-motor related brain regions, and modulates functional connectivity networks through multi-pathway neuroregulatory mechanisms. This promotes the formation of task-specif...

### **⊗** Read full article:

https://pubmed.ncbi.nlm.nih.gov/41070188/?

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# Multimodal MBC-ATT: cross-modality attentional fusion of **EEG-fNIRS** for cognitive state decoding



1 63 min words







Summary: With the rapid development of brain-computer interface (BCI) technology, the effective integration of multimodal biological signals to improve classification accuracy has become a research hotspot. However, existing methods often fail to fully exploit crossmodality correlations in complex cognitive...

### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41070190/?

Prefrontal cortex activity during virtual obstacle avoidance and distracted walking: A methodological proof of concept using augmented reality and functional near-infrared spectroscopy

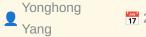


**Summary:** CONCLUSIONS: This combination of technologies elicited task-dependent modulation in PFC activity and gait behaviours in healthy adults, confirming the efficacy of AR-projected obstacles in a cognitive-motor dual-task paradigm. Based on these outcomes, it is likely that this experimental approach wil...

### 

https://pubmed.ncbi.nlm.nih.gov/41071803/?

Effect of mahjong, a Chinese tiled-based game, combined with upper limb robot training on upper limb function and rehabilitation participation in Chinese stroke patients: a clinical trial protocol









Summary: INTRODUCTION: Stroke is the second leading cause of death and disability creating a huge economic burden annually. Robot-assisted training (RT) is a promising therapy in stroke rehabilitation, but for the elderly, traditional 'reaching objects'" tasks do not seem to create sufficient motivation, an ...

### 

https://pubmed.ncbi.nlm.nih.gov/41073118/?

# **Effect of Intelligence Quotient Discrepancy on Attention and Executive Function in Children with Attention Deficit Hyperactivity Disorder: An fNIRS Study**









Summary: Intelligence quotient discrepancy (IQD) is associated with neurodevelopmental disorders, but its impact on attention and executive function (EF) deficits in children with attention deficit hyperactivity disorder (ADHD) is unknown. This study aimed to examine the effect of IQD by functional near-infra...

### 

https://pubmed.ncbi.nlm.nih.gov/41076036/?

# Developmental changes in phonological awareness in Chinese-English bilingual children: An fNIRS longitudinal study



Tai-Li
Chou
Tai-Li
To
words



Summary: Learning to read triggers a cascade of changes in children's minds and brains, changes that lead to the formation of the "reading brain". Importantly, the developmental trajectory of these changes differs across languages. The development of phonological literacy skills comes first for learners of a...

### **⊗** Read full article:

https://pubmed.ncbi.nlm.nih.gov/41076038/?

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# Sensitivity Analysis of the Balloon Model Parameters in **Functional Near-Infrared Spectroscopy Simulation**







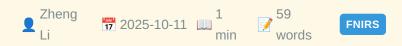


Summary: CONCLUSIONS: The fNIRS hemodynamic response is highly sensitive to the Balloon model's  $\alpha$  and  $\tau$  parameters. These findings highlight the importance of accounting for physiological variability in fNIRS analysis and provide a robust framework for generating synthetic data to test signal processing algo...

### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41076093/?

# Machine learning assessment of cognitive reserve using functional near-infrared spectroscopy in older adults with cognitive frailty



**Summary:** Cognitive reserve mitigates aging-related cognitive decline and frailty, yet current assessments lack neurobiological specificity. We aimed to develop a noninvasive, functional near infrared spectroscopy (fNIRS)-based machine learning model to classify cognitive reserve levels in older adults with c...

### **⊗** Read full article:

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# Exploring age and hemispheric differences in cortical plasticity after iTBS using fNIRS



**Summary:** Non-invasive brain stimulation applied to the prefrontal cortex (PFC) has been shown to improve cognitive outcomes in older adults with cognitive impairments (Miller et al., 2023). However, the differential impact of left versus right dorsolateral prefrontal cortex (DLPFC) stimulation on prefrontal ...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41077115/?

### Does increasing canopy liana density decrease the tropical forest carbon sink?

David M
DeFilippis

DeFilippis

David M
To 2025-10-09
To words

BRAIN COMPUTER INTERFACE

Summary: The ongoing decline in the American tropical forest carbon sink has serious ramifications for atmospheric carbon levels and global climate change. Increasing liana abundance may explain the decaying carbon sink because lianas reduce canopy tree growth and survival, which limits forest carbon storage...

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# Correction: Filter bank common spatial pattern and envelopebased features in multimodal EEG-fTCD brain-computer interfaces

PLOS One Staff 2025-10-09 min 6 BRAIN COMPUTER INTERFACE

Summary: [This corrects the article DOI: 10.1371/journal.pone.0311075.].

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https://pubmed.ncbi.nlm.nih.gov/41066375/?

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# Multimodal MBC-ATT: cross-modality attentional fusion of **EEG-fNIRS** for cognitive state decoding

Peng 1 63
Wusp min words

BRAIN COMPUTER INTERFACE

Summary: With the rapid development of brain-computer interface (BCI) technology, the effective integration of multimodal biological signals to improve classification accuracy has become a research hotspot. However, existing methods often fail to fully exploit crossmodality correlations in complex cognitive...

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# Three-dimensional microsurgical anatomy of the basal aspect of the cerebrum: a fiber dissection study

1 29 min 29 words

BRAIN COMPUTER INTERFACE

**Summary:** CONCLUSIONS: The 3D microsurgical anatomy of the basal cerebrum provides valuable insights for planning precise and safe surgical approaches and offers anatomical evidence for further studies on brain function.

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# A multi-level teacher assistant-based knowledge distillation framework with dynamic feedback for motor imagery EEG decoding



**Summary:** Deep learning has shown promise in motor imagery-based electroencephalogram (MI-EEG) decoding, a critical task in non-invasive brain-computer interfaces (BCIs). In response to the computational complexity of deep learning models to be deployed in practical BCI applications, knowledge distillation (K...

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+e462414

# **EEG-CLIP:** A transformer-based framework for EEG-guided image generation

Daoqiang
Zhang

Daoqiang
Tir 2025-10-10

Tir 2025-10-10

Tir 2025-10-10

Tir 2025-10-10

Tir 2025-10-10

Tir 2025-10-10

**Summary:** Decoding visual perception from neural signals represents a fundamental step toward advanced brain-computer interfaces (BCIs), where functional magnetic resonance imaging (fMRI) has shown promising results despite practical constraints in deployment and costs. Electroencephalography (EEG), with its ...

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### Novel analysis method to determine the neural activation function of the inner hair cell



1 79 min words

BRAIN COMPUTER INTERFACE

Summary: Sensorineural hearing loss (SNH) is one of the most common forms of hearing loss. A special form of SNH is hidden hearing loss (HHL) with subjective normal hearing. Current research results indicate that these patients demonstrate a reduced wave I in the averaged signal of brainstem audiometry (ABR)...

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# Retraction notice to "Decoding thoughts, encoding ethics: A narrative review of the BCI-AI revolution" [Brain Res. 1850 (2025) 149423]





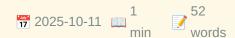


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# **Abnormal Brain Connectivity Patterns in Children with Global Developmental Delay Accompanied by Cognitive Impairment:** A Resting-State EEG Study







BRAIN COMPUTER INTERFACE

Summary: CONCLUSIONS: Children with GDD exhibit abnormal patterns of brain functional connectivity, characterized by global hypo-connectivity and local hyperconnectivity. Specific network metrics under these abnormal patterns are significantly correlated with cognitive impairment in GDD. This study also hig...

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# Sensitivity Analysis of the Balloon Model Parameters in **Functional Near-Infrared Spectroscopy Simulation**

Murad
Althobaiti

1 43 min words

BRAIN COMPUTER INTERFACE

Summary: CONCLUSIONS: The fNIRS hemodynamic response is highly sensitive to the Balloon model's  $\alpha$  and  $\tau$  parameters. These findings highlight the importance of accounting for physiological variability in fNIRS analysis and provide a robust framework for generating synthetic data to test signal processing algo...

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

1 180 min 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 (...

http://doi.org/10.1037/pmu0000303

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

1 2024-01-22 min 259 PSYCHOMUSICOLOGY words

**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...

http://doi.org/10.1037/pmu0000304

# Blinter The Linter - A Cross Platform Batch Script Linter



**Summary:** <!-- SC\_OFF --><div class="md"><strong>Yes, it's 2025. Yes, people still write batch scripts. No, they shouldn't crash.</strong> <h2>What It Does</h2> </strong>158 rules</strong> across Error/Warning/Style/Security/Performance<br/> <strong>Catches the nasty stuff</strong>: Command inje...

**Read full article:** 

https://www.reddit.com/r/Python/comments/1o4sswc/blinter\_the\_linter\_a\_cross\_platform\_batch\_script/

### Three ways formally verified code can go wrong in practice

1 2 HACKER NEWS

Summary: <a href="https://news.ycombinator.com/item?id=45555727">Comments</a>

https://buttondown.com/hillelwayne/archive/three-ways-formally-verified-code-can-go-wrong-in/

# **MAML – A new configuration language**

● birdculture 1 2025-10-12 min 13 HACKER NEWS

**Summary:** Article URL: <a href="https://maml.dev/">https://maml.dev/</a> Comments URL: <a href="https://news.ycombinator.com/item?id=45562056">https://news.ycombinator.com/item?id=45562056</a> Points: 65 # Comments: 76

https://maml.dev/

### Type S and M errors as a "rhetorical tool"

noreply@blogger.com (Daniel Lakens)

17 2025-09-28 min 3572 words

TWENTY PERCENT STATISTICIAN

**Summary:** <i>Update 30/09/2025: I have added a reply by Andrew Gelman below my original blog post.</i> &nbsp;We recently posted a preprint criticizing the idea of Type S and M errors (<a href="https://osf.io/2phzb\_v1">https://osf.io/2phzb\_v1</a>). From our abstract: "While these concepts have been pr...

http://daniellakens.blogspot.com/2025/09/type-s-and-m-errors-as-rhetorical-tool.html

# **Musical Structure Influences the Perception of Sound Location**



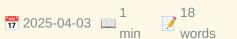
**Summary:** The perception of multilayered auditory stimuli, such as music or speech, relies on the integration of progressively more complex and abstract features as they are processed along the auditory pathway. To investigate whether higher-level musical structure modulates auditory perception or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

**⊗** Read full article:

http://ieeexplore.ieee.org/document/11153363

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









Summary: The post <a href="https://www.embs.org/uncategorized/call-for-applicationsieee-tmrb-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>.



https://www.embs.org/uncategorized/call-for-applications-ieee-tmrb-editor-in-chief-search/

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











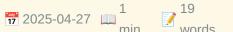
**Summary:** The post <a href="https://www.embs.org/ojemb/search-for-editor-in-chief/">https://www.embs.org/ojemb/search-for-editor-in-chief/ #new tab">Call for Applications Editor-in-Chief: IEEE Open Journal of Engineering in Medicine and Biology</a> appeared first on <a href="https://www.embs.org">IEEE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

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https://www.embs.org/ojemb/search-for-editor-in-chief/#new tab

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









EMBS

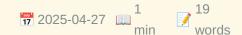
Summary: The post <a href="https://www.embs.org/blog-post/change-foi-for-ieeeembs/">Notice to IEEE EMBS Members: Change to Field of Interest</a> appeared first on <a href="https://www.embs.org">IEEE EMBS</a>.



https://www.embs.org/blog-post/change-foi-for-ieee-embs/

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











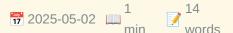
Summary: The post <a href="https://www.embs.org/blog-post/change-foi-for-ieeeembs/#new tab">Notice to IEEE EMBS Members: Change to Field of Interest</a> appeared first on <a href="https://www.embs.org">IEEE EMBS</a>.



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### **Open Call for AdCom Nominations**







EMBS

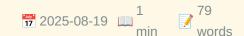
Summary: The post <a href="https://www.embs.org/uncategorized/call-for-adcomnominations/">Open Call for AdCom Nominations</a> appeared first on <a href="https:// www.embs.org">IEEE EMBS</a>.



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

# IEEE EMBS Appoints Sunghoon "Ivan" Lee, Ph.D., as Editorin-Chief of EMBC Proceedings, the Leading Biomedical **Engineering Conference Publication**











Summary: (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… <a class="continue" href="https:// www.embs.org/press/embc-eic-sunghoon-ivan-lee/">Continu...



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

# Prefrontal transcranial direct current stimulation enhances the analgesic effects of attention bias modification: a randomized controlled trial



Summary: Publication date: 1 December 2025<b>Source:</b> Brain Research, Volume 1868Author(s): Xue Jiang, Haozhi Zhao, Ruihan Wan, Chen Gong, Beibei Feng, Yafei Wang, Yangfan Xu, Wangwang Yan, Xueqiang Wang, Yixuan Ku, Yuling Wang

https://www.sciencedirect.com/science/article/pii/S0006899325005396?dgcid=rss\_sd\_all

### Transforming psychiatry with computational and brain-based methods





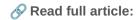
NATURE NEUROSCIENCE SUBJECTS

https://www.nature.com/articles/s43588-025-00884-9

# **Trials for computational psychiatry**

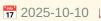






https://www.nature.com/articles/s43588-025-00879-6

# Temporal recurrence as a general mechanism to explain neural responses in the auditory system







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https://www.nature.com/articles/s42003-025-08858-3

# How neural rhythms can guide word recognition





https://www.nature.com/articles/s43588-025-00888-5

### **Activity-dependent citrate dynamics in neurons**

Paul C. RosenPanhui FuBeatriz FerránErica KimDaniel J. BrooksDaniel C. LimCarlos Manlio Díaz-GarcíaGary YellenaDepartment of Neurobiology, Harvard Medical School, Boston, MA 02115bDepartment of Biology, Massachusetts Institute of Technology, Cambridge, MA

■ 02139cDepartment of Biochemistry and Physiology, University of Oklahoma Health Sciences Center, Oklahoma City, OK 73104dCenter for Geroscience and Healthy Brain Aging, University of Oklahoma Health Sciences Center, Oklahoma City, OK 73104eHarold Hamm Diabetes Center, University of Oklahoma Health Sciences Center, Oklahoma City, OK 73104



**Summary:** Proceedings of the National Academy of Sciences, Volume 122, Issue 41, October 2025. <br/>
SignificanceDifficulty in quantifying the small-molecule modulators of glycolysis dynamically and in specific compartments of live cells limits our understanding of metabolic regulation. We engineered a quanti...

https://www.pnas.org/doi/abs/10.1073/pnas.2519902122?af=R

# A midbrain-to-ventral-striatum dopaminergic pathway orchestrates odor-guided insect predation in mice

Wenqiang WangYanbiao ZhongRuiyi TanMaoyuan WangJia LiuDing WangHaiping WangYue LiGuanging LiJian YangPeng WangJialiang WuJianxu ZhangChen-Zhu WangHaishui ShiMinghong MaYiqun YuYun-Feng ZhangaState Key Laboratory of Integrated Management of Pest Insects and Rodents, Institute of Zoology, Chinese Academy of Sciences, Beijing 100101, ChinabState Key Laboratory of Animal Biodiversity Conservation and Integrated Pest Management, Institute of Zoology, Chinese Academy of Sciences, Beijing 100101, ChinacSchool of Life Sciences, Hebei University, Baoding 071002, ChinadDepartment of Rehabilitation Medicine, The First Affiliated Hospital of Gannan Medical University, Ganzhou 341000, ChinaeGanzhou Intelligent Rehabilitation Technology Innovation Center, Ganzhou 341000, ChinafDepartment of Nuclear Medicine, Peking University People's Hospital, Beijing 100044, ChinagDepartment of Otorhinolaryngology Head and Neck Surgery, Children's Hospital, Capital Institute of Pediatrics, Beijing 100020, ChinahUniversity of Chinese Academy of Sciences, Beijing 100101, ChinaiSchool of Rehabilitation Medicine, Gannan Medical University, GanZhou 341000, ChinajNational Clinical Research Center for Mental Disorders and Beijing Key Laboratory of Mental Disorders, Beijing Anding Hospital affiliated to Capital Medical University, Beijing 100088, ChinakThe Hebei Key Laboratory of Early Life Health Promotion, Nursing School, Hebei Medical University, Shijiazhuang 050031, ChinalDepartment of Neuroscience, Perelman School of Medicine, University of Pennsylvania, Philadelphia, PA 19104mEar, Nose, and Throat Institute and



Throat Hospital, Fudan University, Shanghai 200031, China

**Summary:** Proceedings of the National Academy of Sciences, Volume 122, Issue 41, October 2025. <br/>
SignificanceUnderstanding how predators identify and select nutritious prey is fundamental to deciphering interspecies interactions and energy flow within ecosystems. This study reveals that both laboratory an...

Department of Otorhinolaryngology, Eye and Ear, Nose, and Throat Hospital, Fudan University,

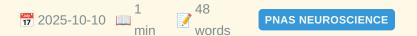
Shanghai 200031, ChinanOlfactory Disorder Diagnosis and Treatment Center, Eye and Ear, Nose, and



https://www.pnas.org/doi/abs/10.1073/pnas.2514847122?af=R

# Inter- and intrahemispheric sources of vestibular signals to V1

Guy BouvierAlessandro SanzeniElizabeth HamadaNicolas BrunelMassimo ScanzianiaDepartment of Physiology, University of California San Francisco, San Francisco, CA 94158bHHMI, University of California San Francisco, San Francisco, CA 94158cCNRS, Institut des Neurosciences Paris-Saclay, Université Paris-Saclay, Saclay 91400, FrancedDepartment of Computing Sciences, Bocconi University, Milan 20100, ItalyeCenter for Theoretical Neuroscience, Columbia University, New York, NY 10027fMortimer B Zuckerman Mind Brain Behavior Institute, Columbia University, New York, NY 10027gDepartment of Neurobiology, Duke University, Durham, NC 27710hDepartment of Neurology,



University of California San Francisco, San Francisco, CA 94158

**Summary:** Proceedings of the National Academy of Sciences, Volume 122, Issue 41, October 2025. <br/>
SignificanceInformation about head motion is fundamental to the visual interpretation of our environment. Indeed, head motion signals originating from the vestibular system robustly modulate activity in the vi...

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https://www.pnas.org/doi/abs/10.1073/pnas.2503181122?af=R

# The locus coeruleus maintains core body temperature and protects against hypothermia during dexmedetomidine-induced sedation

Berta Anuncibay SotoYing MaMathieu NolletSara WongGiulia MiraccaDaniel RastinejadRaquel YustosAlexei L. VyssotskiNicholas P. FranksWilliam WisdenaDepartment of Life Sciences, Imperial

■ College London, London SW7 2AZ, United KingdombUnited Kingdom Dementia Research Institute at Imperial College London, London W12 0BZ, United KingdomcInstitute of Neuroinformatics, University of Zurich and ETH Zurich, Zurich CH8057, Switzerland



**Summary:** Proceedings of the National Academy of Sciences, Volume 122, Issue 41, October 2025. <br/>
SignificanceDexmedetomidine (DEX), a widely used sedative in intensive care, induces an arousable state resembling non-rapid eye movement (NREM) sleep and lowers body temperature. For some patients, even sligh...



https://www.pnas.org/doi/abs/10.1073/pnas.2422878122?af=R

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

1 279 min words Aleksandra Kawala-

FRONTIERS NEUROINFORMATICS

**Summary:** IntroductionAccurate 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...

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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





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...

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

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



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



1 0 min words



FRONTIERS COMPUTATIONAL NEUROSCIENCE

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

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





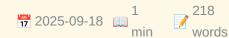




https://www.frontiersin.org/articles/10.3389/fncom.2025.1684335

# Effects of AC induced electric fields on neuronal firing sensitivity and activity patterns









FRONTIERS COMPUTATIONAL NEUROSCIENCE

Summary: IntroductionUnderstanding 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...

https://www.frontiersin.org/articles/10.3389/fncom.2025.1612314

# Intrinsic calcium resonance and its modulation: insights from computational modeling

Hanoch Kaphzan

1 254 min 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 throug...

Read full article:

https://www.frontiersin.org/articles/10.3389/fncom.2025.1669841

# An interpretable generative multimodal neuroimaginggenomics framework for decoding Alzheimer's disease

Giorgio Dolci, Federica Cruciani, Md Abdur Rahaman, Anees Abrol, Jiayu Chen, Zening Fu, Ilaria

Doscolo Galazzo, Gloria Menegaz, Vince D Calhoun and for the Alzheimer's Disease Neuroimaging Initiative

1 244 min words



JOURNAL NEURAL ENGINEERING

Summary: Objective. Alzheimer's disease (AD) is the most prevalent form of dementia worldwide, encompassing a prodromal stage known as mild cognitive impairment (MCI), where patients may either progress to AD or remain stable. The objective of the work was to capture structural and functional modulations of ...

http://iopscience.iop.org/article/10.1088/1741-2552/ae087d

# Real-time detection of spoken speech from unlabeled ECoG signals: a pilot study with an ALS participant

Miguel Angrick, Shiyu Luo, Qinwan Rabbani, Shreya Joshi, Daniel N Candrea, Griffin W Milsap, Chad

R Gordon, Kathryn Rosenblatt, Lora Clawson, Nicholas Maragakis, Francesco V Tenore, Matthew S Fifer, Nick F Ramsey and Nathan E Crone







JOURNAL NEURAL ENGINEERING

**Summary:** Objective. Brain–computer interfaces hold significant promise for restoring communication in individuals with partial or complete loss of the ability to speak due to paralysis from amyotrophic lateral sclerosis (ALS), brainstem stroke, and other neurological disorders. Many of the approaches to spee...



http://iopscience.iop.org/article/10.1088/1741-2552/ae0965

# Physiological activity within peripheral nerves influences neural output in response to electrical stimulation: an in vivo study







JOURNAL NEURAL ENGINEERING

**Summary:** Objective. Neuromodulation therapies are often applied to peripheral nerves. These nerves can have physiological activity that interacts with the activity evoked by electrical stimulation, potentially influencing targeted neural output and clinical outcomes. Our goal was to quantify changes in senso...



http://iopscience.iop.org/article/10.1088/1741-2552/ae09fe

# Disentangling indirect versus direct effects of somatosensory cortex microstimulation on neurons in primary motor and ventral premotor cortex

Brandon Ruszala, Kevin A Mazurek and Marc H Schieber 1 2025-10-06 min 300 words

JOURNAL NEURAL ENGINEERING

**Summary:** Objective. Intracortical microstimulation in the primary somatosensory cortex (S1-ICMS) is being developed to provide on-line feedback for bidirectional brain—machine interfaces. Because S1-ICMS can alter the discharge of the motor cortex neurons used to decode motor intent, successful application o...

Read full article:

http://iopscience.iop.org/article/10.1088/1741-2552/ae087e

# **EEG** workload estimation and classification: a systematic review

Jahid Hassan, Shamim Reza, Syed Udoy Ahmed, Nazmul Haque Anik and Md Obaydullah

1 300 min words

JOURNAL NEURAL ENGINEERING

**Summary:** Objective. Electroencephalography (EEG) has evolved into an indispensable instrument for estimating cognitive workload in various domains. Machine Learning (ML) and deep learning (DL) techniques have been increasingly employed to develop accurate workload estimation and classification models based o...

Read full article:

http://iopscience.iop.org/article/10.1088/1741-2552/ad705e

# Identification of modulated whole-brain dynamical models from nonstationary electrophysiological data

Addison Schwamb, Zongxi Yu and ShiNung China

1 198 min words

JOURNAL NEURAL ENGINEERING

Summary: Objective. Understanding the mechanisms underlying brain dynamics is a longheld goal in neuroscience. However, these dynamics are both individualized and nonstationary, making modeling challenging. Here, we present a data-driven approach to modeling nonstationary dynamics based on principles of neu...

http://iopscience.iop.org/article/10.1088/1741-2552/ae0d32

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







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 .

1 72 2024-07-02 min words OOSTENVELD ROBERT

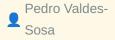
Summary: We present an extension to the Brain Imaging Data Structure (BIDS) for motion data. Motion data is frequently recorded alongside human brain imaging and electrophysiological data. The goal of Motion-BIDS is to make motion data interoperable across different laboratories and with other data modalitie...

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









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

Richard J A van

1 65 min 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 1 82 min 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

1 65 min 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**



1 70 min 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: <em>Increasing access to data while retaining scientific utility</em>



Lyuba
Zehl

Zehl

Zo25-06-26 min

Zostenveld 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



1 74 min 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 1 69
Oostenveld min words

OOSTENVELD ROBERT

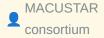
Summary: Recent technological developments have brought optically pumped magnetometers (OPMs) within reach of the larger neuroscientific community. The current state-of-the-art consists of whole-head systems that measure the magnetic field at >100 locations. OPM sensors can be constructed to measure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

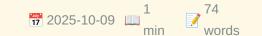
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# Patient-reported vision impairment in low luminance relates to visual function in age-related macular degeneration: A **MACUSTAR** study report







LOW VISION

Summary: Early stages of age-related macular degeneration (AMD) can lead to a number of visual function deficits, but the patient relevance of these deficits is largely unknown. We therefore investigated how bilateral visual function domains affected by age-related macular degeneration (AMD) are associated w...

### Read full article:

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# Multi-interactive feature embedding learning for medical image segmentation



Yue 1 66

LOW VISION

Summary: Medical image segmentation task can provide the lesion object semantic information, but ignores edge texture details from the lesion region. Conversely, the medical image reconstruction task furnishes the object detailed information to facilitate the semantic segmentation through self-supervised lea...

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# Acute intraocular pressure changes during isometric exercise in glaucoma patients: the influence of exercise and intensity



1 42 min words





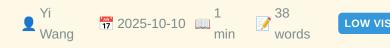
LOW VISION

Summary: CONCLUSION: These findings suggest that while isometric exercises can elevate IOP temporarily, they may still be incorporated into training regimens for POAG patients if intensity is carefully managed. Careful monitoring of IOP is essential to avoid exacerbating glaucoma conditions during isometric ...

### Read full article:

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# Automated detection of pyogenic liver abscess and diagnosis of Klebsiella pneumoniae infection based on CECT images with deep learning: A multicenter study



**Summary:** CONCLUSIONS: The PLADA system provides an accurate, non-invasive method for KPLA diagnosis through a clinically interpretable two-stage AI framework. While limited by a retrospective, single-country dataset, this approach shows particular promise for early detection KPLA in resource-limited settin...

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# Ocular Hypertension and Glaucoma After Pars Plana Vitrectomy: A Systematic Review and Meta-analysis



**Summary:** CONCLUSIONS: PPV is associated with clinically meaningful risk of OHT and glaucoma, especially in pseudophakic eyes. Despite limitations from nonrandomized data and heterogeneity, these findings highlight lens status as a key modifier of post-PPV risk and support tailored surgical planning and posto...

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# Computer vision-based laser communication system for robust optical beam tracking and alignment



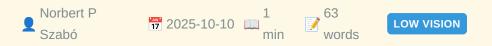
**Summary:** Free-space optical (FSO) communication is a promising technology for high-speed data transmission, but its effectiveness is highly dependent on precise beam alignment. In this work, we present a computer vision-assisted tracking system designed to maintain robust optical alignment in real time. By c...

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# Integrated petrophysical and seal characterization of the heterogeneous jurassic plover formation for CO<sub>2</sub> storage assessment in Northwest Australia



**Summary:** Geological storage of carbon dioxide is critical to mitigate emissions; however, subsurface heterogeneity poses a major challenge. This study investigates the Jurassic Plover Formation in the Browse Basin, Northwest Australia, a region underexplored for carbon storage potential. An integrated petrop...

#### Read full article:

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# The Okanagan charter in action: mapping health promotion strategies in Italian state universities in 2025







LOW VISION

Summary: CONCLUSIONS: Italian universities showed a growing but uneven commitment to health promotion. Despite frequent references to wellbeing, its integration remains partial and sectoral. This study identified key areas for improvement, such as participation, and highlighted a selection of good practices....

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# **Quantifying Effects Of Lifestyle Changes On Progression To Advanced Age-Related Macular Degeneration In High Genetic Risk Individuals**







LOW VISION

Summary: CONCLUSION: Unhealthy behaviors increased incidence of AAMD by 3 to 5fold among a highly genetically susceptible population, and 56-60% of AAMD incidence was attributed to modifiable factors: smoking, high BMI, high caloric intake and low intake of foods rich in lutein-zeaxanthin and omega-3 fatty ...

### **Read full article:**

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# Artificial intelligence in the non-clinical laboratory: enhancing good laboratory and documentation practices

Firman

1 65 min words

Summary: Non-clinical laboratories are under increasing regulatory pressure from agencies such as the FDA, EMA, and MHRA to ensure data integrity, traceability, and compliance with Good Laboratory Practice (GLP) and Good Documentation Practice (GDP). While Artificial Intelligence (AI) has been widely explore...

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



1 70 min 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...

### Read full article:

https://pubmed.ncbi.nlm.nih.gov/40434896/?

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

Hiroyuki
Kajimoto

75 TACTILE ACUITY words

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 1 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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https://pubmed.ncbi.nlm.nih.gov/40577301/?

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

Alex R

Bowers

1

2025-07-02

min

80

words

TACTILE ACUITY

Summary: Vision impairment may delay responses to hazards when driving. In a proof-ofconcept 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







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...

### Read full article:

https://pubmed.ncbi.nlm.nih.gov/40746091/?

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

Eric 1 2025-08-24 min 22 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



**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...

### 

https://pubmed.ncbi.nlm.nih.gov/40924900/?

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

Sviatoslav N Bagriantsev

1 2025-09-13 min 58 TACTILE ACUITY words

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

Greenspon

1 86 min 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...

### 

https://pubmed.ncbi.nlm.nih.gov/40964349/?

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

Runar Unnthorsson 1 2025-09-27 min 65 words

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



**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...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/40854103/?

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







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**









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...

### 

https://pubmed.ncbi.nlm.nih.gov/40864730/?

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









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











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 ...

### 

https://pubmed.ncbi.nlm.nih.gov/40871941/?

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



**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



**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:

https://pubmed.ncbi.nlm.nih.gov/40891563/?

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





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 rightsbased 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









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:

https://pubmed.ncbi.nlm.nih.gov/41013315/?

# **Development and Assessment of a Novel Audiosensory** Performance Method for Improving the Oral Health of Visually **Impaired Children**







**Summary:** This study evaluated the effectiveness of an audiosensory performance method in enhancing oral health knowledge and status among visually impaired children aged 6-12 years in the National Capital Region (NCR), Delhi. An interventional study design was used, involving 251 participants equally divided...

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# Reply to Simani et al. Home-Based tDCS: Safety **Considerations and Technical Monitoring**







TDCS TACS TRNS

### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41067686/?

# Comparative chloroplast genomics of Erigeron (Asteroideae, Asteraceae)

Xiaoxuan
Tian

Tia

Summary: The genus Erigeron L. (Astereae, Asteroideae, Asteraceae), commonly known as fleabanes, comprises approximately 457 species with a near-cosmopolitan distribution. However, taxonomic discrepancies persist within the genus. In this study, the complete chloroplast (cp.) genomes of 16 Erigeron species w...

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# Can transcranial direct current stimulation aimed at reducing mind wandering alleviate depression?



Juergen 1 2025-10-10 min 2 TDCS TACS TRNS words

### 

https://pubmed.ncbi.nlm.nih.gov/41069944/?

# Transcranial Direct Current Stimulation as a Therapeutic **Approach for Anxiety and Related Markers: Comprehensive Systematic Review**

Rosa Maria Martins de

1 50 TDCS TACS TRNS words

Summary: CONCLUSIONS: The review highlights a lack of standardized protocols for using tDCS in treating anxiety. The methodological quality of most studies was critically low, per PRISMA guidelines. There was considerable variation in methodological approaches across the studies, indicating a need for standa...

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# The role of the medial prefrontal cortex in risk and time preferences: A tDCS study

Fan 1 70 Li 2025-10-10 min words

TDCS TACS TRNS

**Summary:** Risk and time preferences are fundamental determinants of economic decision making. Although medial prefrontal cortex (mPFC) activity has been associated with valuation across these domains, causal evidence that focal mPFC perturbation alters both risky and intertemporal choices remains limited. In ...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41072297/?

# Cerebellar transcranial direct current stimulation combined with virtual reality training for the balance of older adults: study protocol for a randomized controlled trial







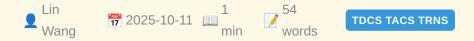
TDCS TACS TRNS

Summary: BACKGROUND: Falls are a major public safety issue, and improving the posture control ability of elderly people is highly important for preventing falls. Transcranial direct current stimulation (tDCS) and virtual reality-based balance training (VRBT) have been proven to be effective in improving post...

### 

https://pubmed.ncbi.nlm.nih.gov/41074127/?

Effects of transcranial direct current stimulation on foot sensorimotor function and postural control in healthy young adults: A systematic review and meta-analysis based on randomized controlled trials



**Summary:** CONCLUSION: In conclusion, the current evidence suggested that tDCS may enhance ankle joint proprioception in healthy young adults, while no significant improvements were observed in foot muscle strength or static and dynamic postural control. Further research is warranted to determine the optimal s...

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# "Shadow government": how transcription factors regulate plant cell wall formation

Natalya
Syrchina

1 2025-10-11 min 66 TDCS TACS TRNS

Summary: The plant cell wall is a dynamic, structurally complex supramolecular compartment essential for the development, defense, and adaptation of plants to their environment. While the biosynthesis and transcriptional regulation of secondary cell walls (SCWs) have been extensively studied and are relative...

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# Lcn2 from neutrophil extracellular traps induces astrogliosis and post-stroke emotional disorders

Zhengrun

1 63 min words

**TDCS TACS TRNS** 

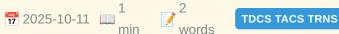
**Summary:** Patients with an ischemic stroke are often predisposed to emotional disorders. However, the mechanisms underlying post-stroke emotional disorders (PSEDs) remain unclear. Recent research highlights the role of neuroinflammation, driven primarily by infiltration of circulating immune cells within the ...

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# Response to Vogelmann et al: Contextualizing Home-Based tDCS Safety: The Remotely Supervised Model







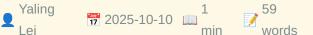
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# **Exploring the neural mechanisms of electroacupuncture for** cognitive impairment in depression using functional nearinfrared spectroscopy: a randomized controlled trial











Summary: CONCLUSION: Compared with pharmacotherapy alone, the combination of pharmacotherapy with electroacupuncture improved cognitive symptoms, mood, and executive function more effectively in patients with depression over a short period. In addition, this combination was associated with enhanced cortical ...

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# Task-specific cortical mechanisms of taVNS-paired taskoriented training for post-stroke upper extremity dysfunction under cognitive load: an fNIRS study









Summary: CONCLUSION: taVNS paired with TOT enhances autonomic homeostasis, increases corticospinal pathway excitability, activates cognition-motor related brain regions, and modulates functional connectivity networks through multi-pathway neuroregulatory mechanisms. This promotes the formation of task-specif...

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# Multimodal MBC-ATT: cross-modality attentional fusion of **EEG-fNIRS** for cognitive state decoding



1 63 min words







Summary: With the rapid development of brain-computer interface (BCI) technology, the effective integration of multimodal biological signals to improve classification accuracy has become a research hotspot. However, existing methods often fail to fully exploit crossmodality correlations in complex cognitive...

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Prefrontal cortex activity during virtual obstacle avoidance and distracted walking: A methodological proof of concept using augmented reality and functional near-infrared spectroscopy



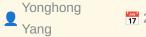
**Summary:** CONCLUSIONS: This combination of technologies elicited task-dependent modulation in PFC activity and gait behaviours in healthy adults, confirming the efficacy of AR-projected obstacles in a cognitive-motor dual-task paradigm. Based on these outcomes, it is likely that this experimental approach wil...

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Effect of mahjong, a Chinese tiled-based game, combined with upper limb robot training on upper limb function and rehabilitation participation in Chinese stroke patients: a clinical trial protocol









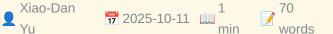
Summary: INTRODUCTION: Stroke is the second leading cause of death and disability creating a huge economic burden annually. Robot-assisted training (RT) is a promising therapy in stroke rehabilitation, but for the elderly, traditional 'reaching objects'" tasks do not seem to create sufficient motivation, an ...

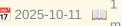
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# **Effect of Intelligence Quotient Discrepancy on Attention and Executive Function in Children with Attention Deficit Hyperactivity Disorder: An fNIRS Study**









Summary: Intelligence quotient discrepancy (IQD) is associated with neurodevelopmental disorders, but its impact on attention and executive function (EF) deficits in children with attention deficit hyperactivity disorder (ADHD) is unknown. This study aimed to examine the effect of IQD by functional near-infra...

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# Developmental changes in phonological awareness in Chinese-English bilingual children: An fNIRS longitudinal study



Tai-Li
Chou
Tai-Li
To
words



Summary: Learning to read triggers a cascade of changes in children's minds and brains, changes that lead to the formation of the "reading brain". Importantly, the developmental trajectory of these changes differs across languages. The development of phonological literacy skills comes first for learners of a...

### **⊗** Read full article:

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# Sensitivity Analysis of the Balloon Model Parameters in **Functional Near-Infrared Spectroscopy Simulation**









Summary: CONCLUSIONS: The fNIRS hemodynamic response is highly sensitive to the Balloon model's  $\alpha$  and  $\tau$  parameters. These findings highlight the importance of accounting for physiological variability in fNIRS analysis and provide a robust framework for generating synthetic data to test signal processing algo...

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# Machine learning assessment of cognitive reserve using functional near-infrared spectroscopy in older adults with cognitive frailty



**Summary:** Cognitive reserve mitigates aging-related cognitive decline and frailty, yet current assessments lack neurobiological specificity. We aimed to develop a noninvasive, functional near infrared spectroscopy (fNIRS)-based machine learning model to classify cognitive reserve levels in older adults with c...

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# Exploring age and hemispheric differences in cortical plasticity after iTBS using fNIRS



**Summary:** Non-invasive brain stimulation applied to the prefrontal cortex (PFC) has been shown to improve cognitive outcomes in older adults with cognitive impairments (Miller et al., 2023). However, the differential impact of left versus right dorsolateral prefrontal cortex (DLPFC) stimulation on prefrontal ...

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### Does increasing canopy liana density decrease the tropical forest carbon sink?

David M
DeFilippis

DeFilippis

David M
To 2025-10-09
To words

BRAIN COMPUTER INTERFACE

Summary: The ongoing decline in the American tropical forest carbon sink has serious ramifications for atmospheric carbon levels and global climate change. Increasing liana abundance may explain the decaying carbon sink because lianas reduce canopy tree growth and survival, which limits forest carbon storage...

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## Correction: Filter bank common spatial pattern and envelopebased features in multimodal EEG-fTCD brain-computer interfaces

PLOS One Staff 2025-10-09 min 6 BRAIN COMPUTER INTERFACE



Summary: [This corrects the article DOI: 10.1371/journal.pone.0311075.].

#### **⊗** Read full article:

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## Multimodal MBC-ATT: cross-modality attentional fusion of **EEG-fNIRS** for cognitive state decoding

Peng 1 63
Wusp min words

BRAIN COMPUTER INTERFACE

Summary: With the rapid development of brain-computer interface (BCI) technology, the effective integration of multimodal biological signals to improve classification accuracy has become a research hotspot. However, existing methods often fail to fully exploit crossmodality correlations in complex cognitive...

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# Three-dimensional microsurgical anatomy of the basal aspect of the cerebrum: a fiber dissection study

1 29 min 29 words

BRAIN COMPUTER INTERFACE

**Summary:** CONCLUSIONS: The 3D microsurgical anatomy of the basal cerebrum provides valuable insights for planning precise and safe surgical approaches and offers anatomical evidence for further studies on brain function.

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# A multi-level teacher assistant-based knowledge distillation framework with dynamic feedback for motor imagery EEG decoding



**Summary:** Deep learning has shown promise in motor imagery-based electroencephalogram (MI-EEG) decoding, a critical task in non-invasive brain-computer interfaces (BCIs). In response to the computational complexity of deep learning models to be deployed in practical BCI applications, knowledge distillation (K...

### **⊗** Read full article:

https://pubmed.ncbi.nlm.nih.gov/41072285/?
utm\_source=BucketBot&utm\_medium=rss&utm\_campaign=None&utm\_content=1rSUu-tbw4049Wgf\_RdKXdtNCvGW0IVBZFpHe7zaN4k4DwoD5&fc=None&ff=20251013023139&v=2.18.0.post9
+e462414

# **EEG-CLIP: A transformer-based framework for EEG-guided** image generation

Daoqiang
Zhang

Daoqiang
Tir 2025-10-10

Tir 2025-10-10

Tir 2025-10-10

Tir 2025-10-10

Tir 2025-10-10

Tir 2025-10-10

**Summary:** Decoding visual perception from neural signals represents a fundamental step toward advanced brain-computer interfaces (BCIs), where functional magnetic resonance imaging (fMRI) has shown promising results despite practical constraints in deployment and costs. Electroencephalography (EEG), with its ...

### 

https://pubmed.ncbi.nlm.nih.gov/41072287/?

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### Novel analysis method to determine the neural activation function of the inner hair cell



1 79 min words





BRAIN COMPUTER INTERFACE

Summary: Sensorineural hearing loss (SNH) is one of the most common forms of hearing loss. A special form of SNH is hidden hearing loss (HHL) with subjective normal hearing. Current research results indicate that these patients demonstrate a reduced wave I in the averaged signal of brainstem audiometry (ABR)...

### 

https://pubmed.ncbi.nlm.nih.gov/41072470/?

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# Retraction notice to "Decoding thoughts, encoding ethics: A narrative review of the BCI-AI revolution" [Brain Res. 1850 (2025) 149423]





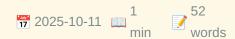


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# **Abnormal Brain Connectivity Patterns in Children with Global Developmental Delay Accompanied by Cognitive Impairment:** A Resting-State EEG Study









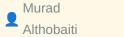
BRAIN COMPUTER INTERFACE

Summary: CONCLUSIONS: Children with GDD exhibit abnormal patterns of brain functional connectivity, characterized by global hypo-connectivity and local hyperconnectivity. Specific network metrics under these abnormal patterns are significantly correlated with cognitive impairment in GDD. This study also hig...

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https://pubmed.ncbi.nlm.nih.gov/41074421/? utm\_source=BucketBot&utm\_medium=rss&utm\_campaign=None&utm\_content=1rSUu-tbw4049Wgf\_RdKXdtNCvGW0lVBZFpHe7zaN4k4DwoD5&fc=None&ff=20251013023139&v=2.18.0.post9 +e462414

## Sensitivity Analysis of the Balloon Model Parameters in **Functional Near-Infrared Spectroscopy Simulation**



1 2025-10-11 min words

BRAIN COMPUTER INTERFACE

Summary: CONCLUSIONS: The fNIRS hemodynamic response is highly sensitive to the Balloon model's  $\alpha$  and  $\tau$  parameters. These findings highlight the importance of accounting for physiological variability in fNIRS analysis and provide a robust framework for generating synthetic data to test signal processing algo...

### 

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





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 I...

**Read full article:** 

http://doi.org/10.1037/pmu0000302

# Early contingency information enhances human punishment sensitivity when punishment is frequent but not rare.

1 155
min 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 ...

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.

273
min 2025-06-09 min words

**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 I...

Read full article:

http://doi.org/10.1037/bne0000625

### Influence of context on extinguished appetitive conditioning in male and female rats.

1 230 min 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...

http://doi.org/10.1037/bne0000626

# Gonadectomy maintains goal-directed responding in female rats and accelerates habit formation in male rats.

1 2025-04-07 min 271 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]**









Summary: <div class="info custom-block">INFO These update threads only contains major updates. If you're interested in seeing all minor changes you can follow our <a href="https://github.com/fmhy/FMHYedit/commits/">https://github.com/fmhy/FMHYedit/commits/</a> main" rel="noreferrer" target=" blank">Commits Page</a> on ...

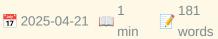


https://fmhy.net/posts/april-2025

### The Internet Archive needs your help.







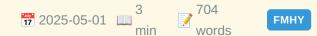


Summary: A coalition of major record labels has filed a lawsuit against the Internet Archive—demanding <strong>\$700 million</strong> for our work preserving and providing access to historical 78rpm records. These fragile, obsolete discs hold some of the earliest recordings of a vanishing American culture....



https://fmhy.net/posts/support-ia

### **Monthly Updates [May]**



**Summary:** <div class="info custom-block">INFO These update threads only contains major updates. If you're interested in seeing all minor changes you can follow our <a href="https://github.com/fmhy/FMHYedit/commits/main" rel="noreferrer" target="\_blank">Commits Page</a> on ...

https://fmhy.net/posts/may-2025

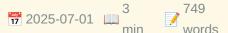
### **Monthly Updates [June]**



**Summary:** <div class="info custom-block">INFO These update threads only contains major updates. If you're interested in seeing all minor changes you can follow our <a href="https://github.com/fmhy/FMHYedit/commits/main" rel="noreferrer" target=" blank">Commits Page</a> on ...

https://fmhy.net/posts/june-2025

### **Monthly Updates [July]**





FMHY

Summary: <div class="info custom-block">INFO These update threads only contains major updates. If you're interested in seeing all minor changes you can follow our <a href="https://github.com/fmhy/FMHYedit/commits/">https://github.com/fmhy/FMHYedit/commits/</a> main" rel="noreferrer" target=" blank">Commits Page</a> on ...



https://fmhy.net/posts/july-2025

### **Monthly Updates [August]**







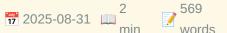


Summary: <div class="info custom-block">INFO These update threads only contains major updates. If you're interested in seeing all minor changes you can follow our <a href="https://github.com/fmhy/FMHYedit/commits/">https://github.com/fmhy/FMHYedit/commits/</a> main" rel="noreferrer" target=" blank">Commits Page</a> on ...



https://fmhy.net/posts/aug-2025

# **Monthly Updates [Sept]**





FMHY

Summary: <div class="info custom-block">INFO These update threads only contains major updates. If you're interested in seeing all minor changes you can follow our <a href="https://github.com/fmhy/FMHYedit/commits/">https://github.com/fmhy/FMHYedit/commits/</a> main" rel="noreferrer" target=" blank">Commits Page</a> on ...



https://fmhy.net/posts/sept-2025

## Fight Chat Control 🔒







**FMHY** 

**Summary:** <h3 id="the-eu-still-wants-to-scan-your-private-messages-and-photos" tabindex="-1">The EU (still) wants to scan your private messages and photos. <a class="header-anchor" href="#the-eu-still-wants-to-scan-your-private-messages-andphotos"></a></h3> The &quot;Chat Control&quot; proposal would mand...



https://fmhy.net/posts/FCC

### Free software hasn't won



**Summary:** Article URL: <a href="https://dorotac.eu/posts/fosswon/">https://dorotac.eu/posts/fosswon/">https://dorotac.eu/posts/fosswon/</a> Comments URL: <a href="https://news.ycombinator.com/item?id=45562286">https://news.ycombinator.com/item?id=45562286</a> Points: 188 # Comments: 216



https://dorotac.eu/posts/fosswon/

# Adolescent high-fructose corn syrup consumption contributes to protracted dysregulation of adult accumbal neuroinflammation and affective behaviors

min 21

BRAIN RESEARCH

words

**Summary:** Publication date: 15 November 2025<b>Source:</b> Brain Research, Volume 1867Author(s): Jessica L Santerre-Anderson, Maritza S Colón, Brynn L Pike, Corinne Y Kiessling

#### **Read full article:**

https://www.sciencedirect.com/science/article/pii/S0006899325005414?dgcid=rss\_sd\_all

# Methodological considerations for quantifying brain asymmetry using neuroimaging techniques

BRAIN RESEARCH

Summary: Publication date: 15 November 2025<b>Source:</b> Brain Research, Volume 1867Author(s): Haokun Li, Jingli Qu, Gaolang Gong

**⊗** Read full article:

https://www.sciencedirect.com/science/article/pii/S0006899325005426?dgcid=rss sd all

## The study of beneficial effect and mechanism of propofol on TNF-α-induced p-Tau increase in HT22 hippocampal neurons



**NEUROSCIENCE JOURNAL** 

**Summary:** Publication date: 10 November 2025<b>Source:</b> Neuroscience, Volume 587Author(s): Shuai Gao, Yifei Wang, Zhihong Xu, Minmin Zhu, Zhipeng Meng, Guanghui An, Jiawei Chen

https://www.sciencedirect.com/science/article/pii/S0306452225009789?dgcid=rss\_sd\_all

# Associations of screen time and physical activity with TMSbased measures of motor cortical excitability in adolescents

NEUROSCIENCE JOURNAL

Summary: Publication date: 10 November 2025<b>Source:</b> Neuroscience, Volume 587Author(s): Hannamari Skog, Sara Määttä, Laura Säisänen, Timo A. Lakka, Eero A. Haapala

### 

https://www.sciencedirect.com/science/article/pii/S0306452225009844?dgcid=rss sd all

### A role for prefrontal dopamine signaling in control of goaldirected actions

Petitbon, A., Contini, A., Walle, R., Allichon, M.-C., Hardt, L., Ducrocq, F., Couty, P., Oummadi, A., Angelo, M.-F., Delcasso, S., Cazala, M., Depret, M., Harouna, Y., Ilie, A., Acedo, F., Correa-Vazquez, J., Ortole, R., Thebeaud, R., Blanc, A., Rousseaud, M., Andrianarivelo, A., Ferreira, G., Barik, J., Vanhoutte, P., Trifilieff, P.







BIORXIV NEUROSCIENCE

Summary: Impairments in behavioral flexibility commonly found across psychiatric disorders have often been attributed to a dysfunction of the medial prefrontal cortex (mPFC), notably in relation with altered dopamine transmission. However, how dopamine transmission shapes neuronal activity in the mPFC to all...

### 

https://www.biorxiv.org/content/10.1101/2025.10.10.681663v1?rss=1

# Shared and distinct neural signatures of inhibitory control deficits in attention-deficit/hyperactivity disorder and autism

Roussat, M., Gao, Z., Cai, W., Vaidya, C., Supekar, K. 248 min 248

**BIORXIV NEUROSCIENCE** 

**Summary:** Background: Attention-deficit/hyperactivity disorder (ADHD) and autism spectrum disorder (ASD) share deficits in inhibitory control, yet direct comparisons of their neurobiological underpinnings remain sparse and are often confounded by comorbidity. We examined shared and distinct abnormalities in b...

Read full article:

https://www.biorxiv.org/content/10.1101/2025.10.10.681732v1?rss=1

# The neural computations underlying context dependent attribute-based valuation of complex stimuli.

Fransen, A., Man, V., Iigaya, K., O`Doherty, J. 239
P. min words

**BIORXIV NEUROSCIENCE** 

**Summary:** Adaptive decision making requires value computations to be flexible because we often need to value a stimulus differently as the context changes. A stimulus might be highly desirable in one context but completely unappealing in another. However, it is not known how the brain can support such flexibl...

https://www.biorxiv.org/content/10.1101/2025.10.10.681681v1?rss=1

# **Astrocyte SEMA3C reduction improves Rett Syndrome** phenotypes

Lyon, K. A., Paumier, A., Kandikonda, A., Melendez, A., Allen, N.

J.

1
2025-10-12

170 words

BIORXIV NEUROSCIENCE

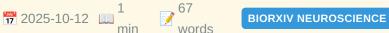
Summary: During typical neurodevelopment, astrocytes secrete proteins that support neuronal connectivity. This process is disrupted in Rett Syndrome (RTT), a regressive neurodevelopmental disorder characterized by motor, sensory, and cognitive impairments. While astrocytes typically promote neuron outgrowth,...

### 

https://www.biorxiv.org/content/10.1101/2025.10.10.681027v1?rss=1

# Nonlinear hippocampal coding of the pair-bonded partner in prairie voles

Liu, J., Watanabe, K., Miyano, M., Kudara, M., Kato-Ishikura, E., Iijima, S., Takeda, K., Koike, R., Nagahiro, T., Yamashiro, K., Young, L. J., Ikegaya, Y., Matsumoto, N.





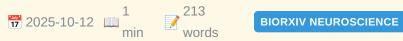


Summary: Neural representation of specific opposite-sex partners remains largely unexplored. Using monogamous prairie voles, we demonstrated that partner preference required the ventral hippocampus, in which 3-4 Hz oscillations were enhanced following partner interaction. We identified ventral hippocampal ne...

https://www.biorxiv.org/content/10.1101/2025.10.10.681589v1?rss=1

# Decoding state specific connectivity during speech production and perception

Esmaeili, Y., Khalilian-Gourtani, A., Devinsky, O., Doyle, W., Dugan, P., Friedman, D., Flinker,





Summary: Understanding how dynamic brain networks support language perception and production is central to cognitive neuroscience. A vast network based literature has employed functional connectivity (FC), primarily using resting-state and task-based fMRI. However, methodological limitations have hindered th...

### 

https://www.biorxiv.org/content/10.1101/2025.10.10.681678v1?rss=1

### **Brain-wide activity across labs**









NATURE NEUROSCIENCE

Summary: Nature Neuroscience, Published online: 06 October 2025; <a href="https://"><a href="https://"></a> www.nature.com/articles/s41593-025-02084-0">doi:10.1038/s41593-025-02084-0</a></ p>Brain-wide activity across labs



https://www.nature.com/articles/s41593-025-02084-0

### Poised for action







NATURE NEUROSCIENCE

Summary: Nature Neuroscience, Published online: 06 October 2025; <a href="https://"><a href="https://"></a> www.nature.com/articles/s41593-025-02083-1">doi:10.1038/s41593-025-02083-1</a> p>Poised for action



https://www.nature.com/articles/s41593-025-02083-1

### Astrocytes make room for microglia









NATURE NEUROSCIENCE

Summary: Nature Neuroscience, Published online: 06 October 2025; <a href="https://"><a href="https://"></a> www.nature.com/articles/s41593-025-02082-2">doi:10.1038/s41593-025-02082-2</a></ p>Astrocytes make room for microglia



https://www.nature.com/articles/s41593-025-02082-2







# Cognitive training improves executive function and selfefficacy in young women with chronic stroke: a pilot study

Lori G. 1 209
Cook min words

FRONTIERS HUMAN NEUROSCIENCE

Summary: IntroductionYoung women are increasingly affected by stroke and often experience persistent executive function deficits that impact global functioning. The purpose of this pilot study was to evaluate the feasibility and effectiveness of a strategybased cognitive training program (Strategic Memory A...

https://www.frontiersin.org/articles/10.3389/fnhum.2025.1677642

# As time goes by: SMA neuromodulation and time perception while watching moving images with different editing styles. A tDCS study

Ruggero 1 201 Eugeni min words



FRONTIERS HUMAN NEUROSCIENCE

**Summary:** Within the framework of a "neurofilmological" approach – which integrates film studies, cognitive psychology, and neuroscience - the present study explored how cinematographic editing influences the viewer's perception of time. Previous behavioral research has shown that editing density affects temp...

Read full article:

https://www.frontiersin.org/articles/10.3389/fnhum.2025.1595599

### 4D trajectory prediction for inbound flights



1 177 2025-09-17 min words

FRONTIERS NEUROROBOTICS

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. Methods A hybrid mod...

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







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

# End-to-end robot intelligent obstacle avoidance method based on deep reinforcement learning with spatiotemporal transformer architecture

FRONTIERS NEUROROBOTICS

Summary: To enhance the obstacle avoidance performance and autonomous decisionmaking capabilities of robots in complex dynamic environments, this paper proposes an end-to-end intelligent obstacle avoidance method that integrates deep reinforcement learning, spatiotemporal attention mechanisms, and a Transfo...

**⊗** Read full article:

https://www.frontiersin.org/articles/10.3389/fnbot.2025.1646336

# MAUNet: a mixed attention U-net with spatial multidimensional convolution and contextual feature calibration for 3D brain tumor segmentation in multimodal MRI

Ganqin 1 197
Du min words

FRONTIERS NEUROSCIENCE

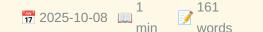
**Summary:** IntroductionBrain tumors present a significant threat to human health, demanding accurate diagnostic and therapeutic strategies. Traditional manual analysis of medical imaging data is inefficient and prone to errors, especially considering the heterogeneous morphological characteristics of tumors. T...

Read full article:

https://www.frontiersin.org/articles/10.3389/fnins.2025.1682603

The influence of psychological distance and topic type on inter-brain synchronization of emotion perception during face-to-face communication: an fNIRS hyperscanning study









FRONTIERS NEUROSCIENCE

Summary: Emotional perception plays a crucial role in social interaction; however, previous studies have majorly focused on static emotion perception rather than examining how emotions unfold during communication. Therefore, this study investigated how psychological distance (friends vs. stranger pairs) and ...



https://www.frontiersin.org/articles/10.3389/fnins.2025.1670193

## Research on the effect of TMS on insomnia patients: EEG changes and prognostic modeling









FRONTIERS NEUROSCIENCE

Summary: ObjectiveInsomnia (ID) is the most common clinical disorder afflicting people of all ages, races, and social classes. This study was to explore changes in the brain's nervous system of insomnia patients after TMS treatment and construct a prognostic prediction model. Method This study involved collect...



https://www.frontiersin.org/articles/10.3389/fnins.2025.1586509

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

Maria Carla
Piastra

1
2024-06-14

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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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



1 72 min words

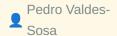
OOSTENVELD ROBERT

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...

### 

https://pubmed.ncbi.nlm.nih.gov/38956071/?

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







OOSTENVELD ROBERT

### Read full article:

https://pubmed.ncbi.nlm.nih.gov/39174725/?

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







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...

### 

https://pubmed.ncbi.nlm.nih.gov/39229492/?

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

Krzysztof J
Gorgolewski

1 2024-09-23 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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https://pubmed.ncbi.nlm.nih.gov/39308505/?

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

1 65 min 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...

### 

https://pubmed.ncbi.nlm.nih.gov/39786979/?

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

Luca 1 70
Pollonini 2025-01-27 min 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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https://pubmed.ncbi.nlm.nih.gov/39870674/?

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# Pseudonymisation of neuroimages and data protection: <em>Increasing access to data while retaining scientific utility</em>



Lyuba
Zehl

Zehl

Zo25-06-26 min

Zostenveld robert

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/?

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

Tim M
Tierney

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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https://pubmed.ncbi.nlm.nih.gov/40800958/?

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



1 69 min 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...

### 

https://pubmed.ncbi.nlm.nih.gov/40800964/?

# Patient-reported vision impairment in low luminance relates to visual function in age-related macular degeneration: A MACUSTAR study report



**Summary:** Early stages of age-related macular degeneration (AMD) can lead to a number of visual function deficits, but the patient relevance of these deficits is largely unknown. We therefore investigated how bilateral visual function domains affected by age-related macular degeneration (AMD) are associated w...

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# Multi-interactive feature embedding learning for medical image segmentation



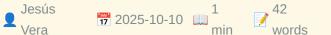
**Summary:** Medical image segmentation task can provide the lesion object semantic information, but ignores edge texture details from the lesion region. Conversely, the medical image reconstruction task furnishes the object detailed information to facilitate the semantic segmentation through self-supervised lea...

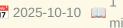
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# Acute intraocular pressure changes during isometric exercise in glaucoma patients: the influence of exercise and intensity







LOW VISION

Summary: CONCLUSION: These findings suggest that while isometric exercises can elevate IOP temporarily, they may still be incorporated into training regimens for POAG patients if intensity is carefully managed. Careful monitoring of IOP is essential to avoid exacerbating glaucoma conditions during isometric ...

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# Automated detection of pyogenic liver abscess and diagnosis of Klebsiella pneumoniae infection based on CECT images with deep learning: A multicenter study



**Summary:** CONCLUSIONS: The PLADA system provides an accurate, non-invasive method for KPLA diagnosis through a clinically interpretable two-stage AI framework. While limited by a retrospective, single-country dataset, this approach shows particular promise for early detection KPLA in resource-limited settin...

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# Ocular Hypertension and Glaucoma After Pars Plana Vitrectomy: A Systematic Review and Meta-analysis



**Summary:** CONCLUSIONS: PPV is associated with clinically meaningful risk of OHT and glaucoma, especially in pseudophakic eyes. Despite limitations from nonrandomized data and heterogeneity, these findings highlight lens status as a key modifier of post-PPV risk and support tailored surgical planning and posto...

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# Computer vision-based laser communication system for robust optical beam tracking and alignment



**Summary:** Free-space optical (FSO) communication is a promising technology for high-speed data transmission, but its effectiveness is highly dependent on precise beam alignment. In this work, we present a computer vision-assisted tracking system designed to maintain robust optical alignment in real time. By c...

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# Integrated petrophysical and seal characterization of the heterogeneous jurassic plover formation for CO<sub>2</sub> storage assessment in Northwest Australia



**Summary:** Geological storage of carbon dioxide is critical to mitigate emissions; however, subsurface heterogeneity poses a major challenge. This study investigates the Jurassic Plover Formation in the Browse Basin, Northwest Australia, a region underexplored for carbon storage potential. An integrated petrop...

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### The Okanagan charter in action: mapping health promotion strategies in Italian state universities in 2025

Claudia

1 61 min words

LOW VISION

Summary: CONCLUSIONS: Italian universities showed a growing but uneven commitment to health promotion. Despite frequent references to wellbeing, its integration remains partial and sectoral. This study identified key areas for improvement, such as participation, and highlighted a selection of good practices....

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## **Quantifying Effects Of Lifestyle Changes On Progression To Advanced Age-Related Macular Degeneration In High Genetic Risk Individuals**



1 73 min words

LOW VISION

Summary: CONCLUSION: Unhealthy behaviors increased incidence of AAMD by 3 to 5fold among a highly genetically susceptible population, and 56-60% of AAMD incidence was attributed to modifiable factors: smoking, high BMI, high caloric intake and low intake of foods rich in lutein-zeaxanthin and omega-3 fatty ...

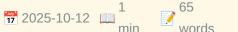
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## Artificial intelligence in the non-clinical laboratory: enhancing good laboratory and documentation practices







Summary: Non-clinical laboratories are under increasing regulatory pressure from agencies such as the FDA, EMA, and MHRA to ensure data integrity, traceability, and compliance with Good Laboratory Practice (GLP) and Good Documentation Practice (GDP). While Artificial Intelligence (AI) has been widely explore...

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









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...

#### Read full article:

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

Hiroyuki
Kajimoto

75 TACTILE ACUITY words

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







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

1

2025-07-02

min

80

words

TACTILE ACUITY

Summary: Vision impairment may delay responses to hazards when driving. In a proof-ofconcept 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







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...

#### Read full article:

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

Eric 1 2025-08-24 min 22 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



**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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https://pubmed.ncbi.nlm.nih.gov/40924900/?

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

Sviatoslav N Bagriantsev

1 2025-09-13 min 58 TACTILE ACUITY words

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

Greenspon

1 86 min 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...

#### 

https://pubmed.ncbi.nlm.nih.gov/40964349/?

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

Runar 1 65 TACTILE ACUITY words

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



**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...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/40854103/?

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









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**









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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https://pubmed.ncbi.nlm.nih.gov/40864730/?

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



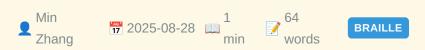
**Summary:** Electronic skins (e-skins) incorporating island architectures represent a promising platform for strain-insensitive tactile sensing by mechanically decoupling sensing units from deformations. However, conventional island designs encounter stress concentration issues caused by inherent modulus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

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



**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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https://pubmed.ncbi.nlm.nih.gov/40871941/?

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



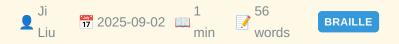
**Summary:** It has been argued in previous research that several competing pressures guide the directions of language evolution (economy vs. redundancy; arbitrariness vs. systematicity). For sign languages, however, the effects of competing pressures on their change of lexical systems remain largely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

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



**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:

https://pubmed.ncbi.nlm.nih.gov/40891563/?

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

Önder

1 55 min words



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 rightsbased 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



1 42 min words





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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# **Development and Assessment of a Novel Audiosensory** Performance Method for Improving the Oral Health of Visually **Impaired Children**







**Summary:** This study evaluated the effectiveness of an audiosensory performance method in enhancing oral health knowledge and status among visually impaired children aged 6-12 years in the National Capital Region (NCR), Delhi. An interventional study design was used, involving 251 participants equally divided...

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# Reply to Simani et al. Home-Based tDCS: Safety **Considerations and Technical Monitoring**









TDCS TACS TRNS

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# Comparative chloroplast genomics of Erigeron (Asteroideae, Asteraceae)

Xiaoxuan
Tian

Tia

Summary: The genus Erigeron L. (Astereae, Asteroideae, Asteraceae), commonly known as fleabanes, comprises approximately 457 species with a near-cosmopolitan distribution. However, taxonomic discrepancies persist within the genus. In this study, the complete chloroplast (cp.) genomes of 16 Erigeron species w...

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# Can transcranial direct current stimulation aimed at reducing mind wandering alleviate depression?



1 2025-10-10 min words

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# Transcranial Direct Current Stimulation as a Therapeutic **Approach for Anxiety and Related Markers: Comprehensive Systematic Review**

Rosa Maria Martins de

1 50 TDCS TACS TRNS words

Summary: CONCLUSIONS: The review highlights a lack of standardized protocols for using tDCS in treating anxiety. The methodological quality of most studies was critically low, per PRISMA guidelines. There was considerable variation in methodological approaches across the studies, indicating a need for standa...

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## The role of the medial prefrontal cortex in risk and time preferences: A tDCS study



Fan 1 70 Li 2025-10-10 min words



TDCS TACS TRNS

**Summary:** Risk and time preferences are fundamental determinants of economic decision making. Although medial prefrontal cortex (mPFC) activity has been associated with valuation across these domains, causal evidence that focal mPFC perturbation alters both risky and intertemporal choices remains limited. In ...

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# Cerebellar transcranial direct current stimulation combined with virtual reality training for the balance of older adults: study protocol for a randomized controlled trial







TDCS TACS TRNS

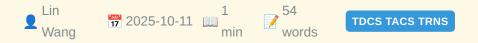
Summary: BACKGROUND: Falls are a major public safety issue, and improving the posture control ability of elderly people is highly important for preventing falls. Transcranial direct current stimulation (tDCS) and virtual reality-based balance training (VRBT) have been proven to be effective in improving post...

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Effects of transcranial direct current stimulation on foot sensorimotor function and postural control in healthy young adults: A systematic review and meta-analysis based on randomized controlled trials



**Summary:** CONCLUSION: In conclusion, the current evidence suggested that tDCS may enhance ankle joint proprioception in healthy young adults, while no significant improvements were observed in foot muscle strength or static and dynamic postural control. Further research is warranted to determine the optimal s...

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## "Shadow government": how transcription factors regulate plant cell wall formation

Natalya
Syrchina

1 2025-10-11 min 66 TDCS TACS TRNS

Summary: The plant cell wall is a dynamic, structurally complex supramolecular compartment essential for the development, defense, and adaptation of plants to their environment. While the biosynthesis and transcriptional regulation of secondary cell walls (SCWs) have been extensively studied and are relative...

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# Lcn2 from neutrophil extracellular traps induces astrogliosis and post-stroke emotional disorders

Zhengrun

1 63 min words

**TDCS TACS TRNS** 

**Summary:** Patients with an ischemic stroke are often predisposed to emotional disorders. However, the mechanisms underlying post-stroke emotional disorders (PSEDs) remain unclear. Recent research highlights the role of neuroinflammation, driven primarily by infiltration of circulating immune cells within the ...

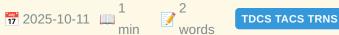
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# Response to Vogelmann et al: Contextualizing Home-Based tDCS Safety: The Remotely Supervised Model







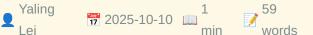
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utm\_source=BucketBot&utm\_medium=rss&utm\_campaign=None&utm\_content=143rKCPgMwbasrj66gQ1 r1ebioUg42SIGRyVKSoW4m6X-ecQ00&fc=None&ff=20251013014152&v=2.18.0.post9+e462414

# **Exploring the neural mechanisms of electroacupuncture for** cognitive impairment in depression using functional nearinfrared spectroscopy: a randomized controlled trial











Summary: CONCLUSION: Compared with pharmacotherapy alone, the combination of pharmacotherapy with electroacupuncture improved cognitive symptoms, mood, and executive function more effectively in patients with depression over a short period. In addition, this combination was associated with enhanced cortical ...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41069950/?

# Task-specific cortical mechanisms of taVNS-paired taskoriented training for post-stroke upper extremity dysfunction under cognitive load: an fNIRS study









Summary: CONCLUSION: taVNS paired with TOT enhances autonomic homeostasis, increases corticospinal pathway excitability, activates cognition-motor related brain regions, and modulates functional connectivity networks through multi-pathway neuroregulatory mechanisms. This promotes the formation of task-specif...

#### **⊗** Read full article:

https://pubmed.ncbi.nlm.nih.gov/41070188/?

utm\_source=BucketBot&utm\_medium=rss&utm\_campaign=None&utm\_content=1JKSd2KF3MGnV7oFV D2g6PNu7rHRFDsLyCNjKkkf4KHBUA3c8P&fc=None&ff=20251013014149&v=2.18.0.post9+e462414

# Multimodal MBC-ATT: cross-modality attentional fusion of **EEG-fNIRS** for cognitive state decoding











Summary: With the rapid development of brain-computer interface (BCI) technology, the effective integration of multimodal biological signals to improve classification accuracy has become a research hotspot. However, existing methods often fail to fully exploit crossmodality correlations in complex cognitive...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41070190/?

Prefrontal cortex activity during virtual obstacle avoidance and distracted walking: A methodological proof of concept using augmented reality and functional near-infrared spectroscopy



**Summary:** CONCLUSIONS: This combination of technologies elicited task-dependent modulation in PFC activity and gait behaviours in healthy adults, confirming the efficacy of AR-projected obstacles in a cognitive-motor dual-task paradigm. Based on these outcomes, it is likely that this experimental approach wil...

#### 

https://pubmed.ncbi.nlm.nih.gov/41071803/?

Effect of mahjong, a Chinese tiled-based game, combined with upper limb robot training on upper limb function and rehabilitation participation in Chinese stroke patients: a clinical trial protocol







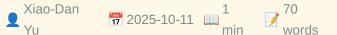


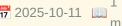
Summary: INTRODUCTION: Stroke is the second leading cause of death and disability creating a huge economic burden annually. Robot-assisted training (RT) is a promising therapy in stroke rehabilitation, but for the elderly, traditional 'reaching objects'" tasks do not seem to create sufficient motivation, an ...

#### 

https://pubmed.ncbi.nlm.nih.gov/41073118/?

# **Effect of Intelligence Quotient Discrepancy on Attention and Executive Function in Children with Attention Deficit Hyperactivity Disorder: An fNIRS Study**









Summary: Intelligence quotient discrepancy (IQD) is associated with neurodevelopmental disorders, but its impact on attention and executive function (EF) deficits in children with attention deficit hyperactivity disorder (ADHD) is unknown. This study aimed to examine the effect of IQD by functional near-infra...

#### 

https://pubmed.ncbi.nlm.nih.gov/41076036/?

# Developmental changes in phonological awareness in Chinese-English bilingual children: An fNIRS longitudinal study



Tai-Li
Chou
Tai-Li
To
words



Summary: Learning to read triggers a cascade of changes in children's minds and brains, changes that lead to the formation of the "reading brain". Importantly, the developmental trajectory of these changes differs across languages. The development of phonological literacy skills comes first for learners of a...

#### **⊗** Read full article:

https://pubmed.ncbi.nlm.nih.gov/41076038/?

utm\_source=BucketBot&utm\_medium=rss&utm\_campaign=None&utm\_content=1JKSd2KF3MGnV7oFV D2g6PNu7rHRFDsLyCNjKkkf4KHBUA3c8P&fc=None&ff=20251013014149&v=2.18.0.post9+e462414

# Sensitivity Analysis of the Balloon Model Parameters in **Functional Near-Infrared Spectroscopy Simulation**







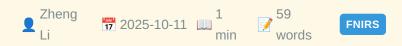


Summary: CONCLUSIONS: The fNIRS hemodynamic response is highly sensitive to the Balloon model's  $\alpha$  and  $\tau$  parameters. These findings highlight the importance of accounting for physiological variability in fNIRS analysis and provide a robust framework for generating synthetic data to test signal processing algo...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41076093/?

# Machine learning assessment of cognitive reserve using functional near-infrared spectroscopy in older adults with cognitive frailty



**Summary:** Cognitive reserve mitigates aging-related cognitive decline and frailty, yet current assessments lack neurobiological specificity. We aimed to develop a noninvasive, functional near infrared spectroscopy (fNIRS)-based machine learning model to classify cognitive reserve levels in older adults with c...

#### **⊗** Read full article:

https://pubmed.ncbi.nlm.nih.gov/41076505/?

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# Exploring age and hemispheric differences in cortical plasticity after iTBS using fNIRS



**Summary:** Non-invasive brain stimulation applied to the prefrontal cortex (PFC) has been shown to improve cognitive outcomes in older adults with cognitive impairments (Miller et al., 2023). However, the differential impact of left versus right dorsolateral prefrontal cortex (DLPFC) stimulation on prefrontal ...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41077115/?

### Does increasing canopy liana density decrease the tropical forest carbon sink?

David M
DeFilippis

DeFilippis

David M
To 2025-10-09
To words

BRAIN COMPUTER INTERFACE

Summary: The ongoing decline in the American tropical forest carbon sink has serious ramifications for atmospheric carbon levels and global climate change. Increasing liana abundance may explain the decaying carbon sink because lianas reduce canopy tree growth and survival, which limits forest carbon storage...

#### 

https://pubmed.ncbi.nlm.nih.gov/41065125/?

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### Correction: Filter bank common spatial pattern and envelopebased features in multimodal EEG-fTCD brain-computer interfaces

PLOS One Staff 2025-10-09 min words BRAIN COMPUTER INTERFACE

Summary: [This corrects the article DOI: 10.1371/journal.pone.0311075.].

#### **⊗** Read full article:

https://pubmed.ncbi.nlm.nih.gov/41066375/?

utm\_source=BucketBot&utm\_medium=rss&utm\_campaign=None&utm\_content=1rSUu-tbw4049Wgf RdKXdtNCvGW0lVBZFpHe7zaN4k4DwoD5&fc=None&ff=20251013014146&v=2.18.0.post9 +e462414

### Multimodal MBC-ATT: cross-modality attentional fusion of **EEG-fNIRS** for cognitive state decoding

Peng 1 63
Wusp min words

BRAIN COMPUTER INTERFACE

Summary: With the rapid development of brain-computer interface (BCI) technology, the effective integration of multimodal biological signals to improve classification accuracy has become a research hotspot. However, existing methods often fail to fully exploit crossmodality correlations in complex cognitive...

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https://pubmed.ncbi.nlm.nih.gov/41070190/?

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# Three-dimensional microsurgical anatomy of the basal aspect of the cerebrum: a fiber dissection study



BRAIN COMPUTER INTERFACE

**Summary:** CONCLUSIONS: The 3D microsurgical anatomy of the basal cerebrum provides valuable insights for planning precise and safe surgical approaches and offers anatomical evidence for further studies on brain function.

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https://pubmed.ncbi.nlm.nih.gov/41072048/?

utm\_source=BucketBot&utm\_medium=rss&utm\_campaign=None&utm\_content=1rSUu-tbw4049Wgf RdKXdtNCvGW0lVBZFpHe7zaN4k4DwoD5&fc=None&ff=20251013014146&v=2.18.0.post9 +e462414

# A multi-level teacher assistant-based knowledge distillation framework with dynamic feedback for motor imagery EEG decoding



**Summary:** Deep learning has shown promise in motor imagery-based electroencephalogram (MI-EEG) decoding, a critical task in non-invasive brain-computer interfaces (BCIs). In response to the computational complexity of deep learning models to be deployed in practical BCI applications, knowledge distillation (K...

#### 

https://pubmed.ncbi.nlm.nih.gov/41072285/?
utm\_source=BucketBot&utm\_medium=rss&utm\_campaign=None&utm\_content=1rSUu-tbw4049Wgf\_RdKXdtNCvGW0IVBZFpHe7zaN4k4DwoD5&fc=None&ff=20251013014146&v=2.18.0.post9
+e462414

## **EEG-CLIP: A transformer-based framework for EEG-guided** image generation

Daoqiang
Zhang

Daoqiang
Tir 2025-10-10

Tir 2025-10-10

Tir 2025-10-10

Tir 2025-10-10

Tir 2025-10-10

Tir 2025-10-10

**Summary:** Decoding visual perception from neural signals represents a fundamental step toward advanced brain-computer interfaces (BCIs), where functional magnetic resonance imaging (fMRI) has shown promising results despite practical constraints in deployment and costs. Electroencephalography (EEG), with its ...

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https://pubmed.ncbi.nlm.nih.gov/41072287/?

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### Novel analysis method to determine the neural activation function of the inner hair cell



1 79 min words





BRAIN COMPUTER INTERFACE

Summary: Sensorineural hearing loss (SNH) is one of the most common forms of hearing loss. A special form of SNH is hidden hearing loss (HHL) with subjective normal hearing. Current research results indicate that these patients demonstrate a reduced wave I in the averaged signal of brainstem audiometry (ABR)...

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https://pubmed.ncbi.nlm.nih.gov/41072470/?

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# Retraction notice to "Decoding thoughts, encoding ethics: A narrative review of the BCI-AI revolution" [Brain Res. 1850 (2025) 149423]







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https://pubmed.ncbi.nlm.nih.gov/41073181/? utm\_source=BucketBot&utm\_medium=rss&utm\_campaign=None&utm\_content=1rSUu-tbw4049Wgf RdKXdtNCvGW0lVBZFpHe7zaN4k4DwoD5&fc=None&ff=20251013014146&v=2.18.0.post9 +e462414

# **Abnormal Brain Connectivity Patterns in Children with Global Developmental Delay Accompanied by Cognitive Impairment:** A Resting-State EEG Study







BRAIN COMPUTER INTERFACE

Summary: CONCLUSIONS: Children with GDD exhibit abnormal patterns of brain functional connectivity, characterized by global hypo-connectivity and local hyperconnectivity. Specific network metrics under these abnormal patterns are significantly correlated with cognitive impairment in GDD. This study also hig...

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https://pubmed.ncbi.nlm.nih.gov/41074421/? utm\_source=BucketBot&utm\_medium=rss&utm\_campaign=None&utm\_content=1rSUu-tbw4049Wgf\_RdKXdtNCvGW0lVBZFpHe7zaN4k4DwoD5&fc=None&ff=20251013014146&v=2.18.0.post9 +e462414

### Sensitivity Analysis of the Balloon Model Parameters in **Functional Near-Infrared Spectroscopy Simulation**

Murad
Althobaiti

1 2025-10-11 min words

BRAIN COMPUTER INTERFACE

Summary: CONCLUSIONS: The fNIRS hemodynamic response is highly sensitive to the Balloon model's  $\alpha$  and  $\tau$  parameters. These findings highlight the importance of accounting for physiological variability in fNIRS analysis and provide a robust framework for generating synthetic data to test signal processing algo...

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https://pubmed.ncbi.nlm.nih.gov/41076093/?

utm\_source=BucketBot&utm\_medium=rss&utm\_campaign=None&utm\_content=1rSUu-tbw4049Wgf RdKXdtNCvGW0IVBZFpHe7zaN4k4DwoD5&fc=None&ff=20251013014146&v=2.18.0.post9 +e462414

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





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.

1 2023-07-10 min 202 PSYCHOMUSICOLOGY words

**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...

http://doi.org/10.1037/pmu0000298

# Capturing coordination and intentionality in joint musical improvisation.



**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.

1 252 min 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 ...

http://doi.org/10.1037/pmu0000295

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

1 256 min 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...

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.

CLINICAL NEUROSCIENCE

1 261 words

**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...

http://doi.org/10.1037/cns0000399

# Anomalous experiences are associated with high subconscious connectedness.

1 2025-04-17 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.

1 249 min 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 ...

http://doi.org/10.1037/cns0000397

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

1 2025-07-31 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 <em>very brief exposure</em> (VBE), the continuous presentation of...

http://doi.org/10.1037/cns0000435

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



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 <em>...

http://doi.org/10.1037/cns0000414

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





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...

http://doi.org/10.1037/cns0000384

### Mechanistic pathways of acceptance: An experimental study.

1 177 2023-08-17 min 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...

http://doi.org/10.1037/cns0000371

# Why We're Here



1 352 min 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? <em>Whats the point?</em> 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...

https://fmhy.net/posts/WWH

# **Cronboard - A terminal-based dashboard for managing cron** jobs

**Summary:** <!-- SC\_OFF --><div class="md"><h2>What My Project Does</h2> <strong>Cronboard</strong> is a terminal-based application built with <strong>Python</strong> that lets you manage and schedule cron jobs both locally and on remote servers. It provides an interactive way to view, create, edit, and dele...

https://www.reddit.com/r/Python/comments/104jul0/ cronboard\_a\_terminalbased\_dashboard\_for\_managing/

# **Fastmail Desktop App**

soheilpro 7 2025-10-13 min 13 words HACKER NEWS

**Summary:** Article URL: <a href="https://www.fastmail.com/blog/desktop-app/">https://www.fastmail.com/blog/desktop-app/</a> Comments URL: <a href="https://news.ycombinator.com/item?id=45564619">https://news.ycombinator.com/item?id=45564619">https://news.ycombinator.com/item?id=45564619</a> Points: 14 # Comments: 4

**S** Read full article:

https://www.fastmail.com/blog/desktop-app/

# **Retrieving Planned Sample Sizes from AsPredicted Preregistrations**







TWENTY PERCENT STATISTICIAN

#### Summary: &<u>

#### 

http://daniellakens.blogspot.com/2025/06/retrieving-planned-sample-sizes-from.html

### Are meta-scientists ignoring philosophy of science?





TWENTY PERCENT STATISTICIAN

Summary: Are meta-scientists ignoring philosophy of science (PoS)? Are they reinventing the wheel? <a href="https://nomadit.co.uk/conference/metascience2025/p/">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

3 765 min words

TWENTY PERCENT STATISTICIAN

Summary: Researchers increasingly use the <a href="https://osf.io/">Open Science Framework</a> (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



1 108 min 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. <a href="https://erpinfo.org/summer-boot-camp">Click here</a> for more information.We are currently planning t...

https://erpinfo.org/blog/2021/12/22/applications-2023

### **ERP Decoding for Everyone: Software and Webinar**

2 420 min words



ERP BOOT CAMP

Summary: <strong>You can access the recording </strong><a href="https://" video.ucdavis.edu/media/

Virtual+ERP+Boot+CampA+Decoding+for+Everyone%2C+July+25+2023/1 Imwj6bu0"><strong>l strong></a><strong>.<br/>br />You can access the final PDF of the slides </strong><a href="https://ucdavis.box.com/s/f...

https://erpinfo.org/blog/2023/6/23/decoding-webinar

# **New Papers: Optimal Filter Settings for ERP Research**



2 568 min words





**ERP BOOT CAMP** 

Summary: Zhang, G., Garrett, D. R., & D. R., & Luck, S. J. (in press). Optimal filters for ERP research I: A general approach for selecting filter settings. <em>Psychophysiology</em>. <a href="https://doi.org/10.1111/psyp.14531"><span>https:// doi.org/10.1111/psyp.14531</span></a> [<a href="https://www...

https://erpinfo.org/blog/2024/2/4/optimal-filters

### **Education: Legal Issues**







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...

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https://brain.ieee.org/publications/neuroethics-framework/education/education-legal-issues/educationlegal-issues/

#### **Education: Social and Cultural Issues**







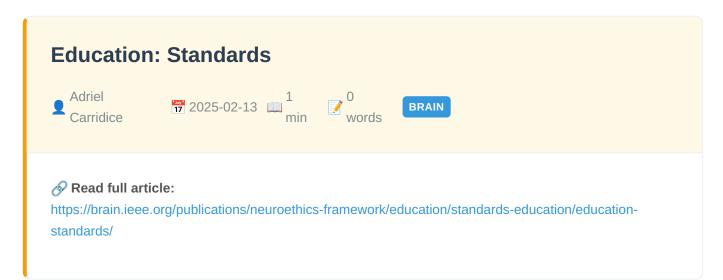


BRAIN

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...

#### 

https://brain.ieee.org/publications/neuroethics-framework/education/education-social-and-cultural-issues/ education-social-and-cultural-issues/





# **BoNT Injection into Temporomandibular Joint Alleviates TMJ Pain in Forced Mouth Opening Mouse Model**

Kim, E., Son, H., Zhang, Y., Shannonhouse, J., Gomez, R., Lee, J., Han, D., Park, J. T., Kim, S. T., Amarista, F., Perez, D., Ellis, E., Kim, Y. S.

1 223 min words

JOURNAL NEUROSCIENCE CURRENT

Summary: Temporomandibular disorder (TMD) significantly impairs the quality of life of patients due to chronic pain and limited jaw function. Many treatment options have been used such as pharmacologic management, physical therapy, oral appliance therapy, and surgery. However, effective treatment options ...

**Read full article:** 

http://www.jneurosci.org/cgi/content/short/45/41/e2035242025?rss=1

# **Maturation of Neuronal Activity in the Human Cortex Exhibits Robust Spatial Gradients across the Birth Transition**

Stevenson, N. J., Iyer, K., Tokariev, A., Roberts, J. A., Vanhatalo,

1 2025-10-08 min

JOURNAL NEUROSCIENCE CURRENT

Summary: Early structural and molecular development of the human cortex is extensively studied, but little is known about the development of neuronal activity across cortical regions. We used dense array electroencephalography recordings and a machine learning-based measure, functional brain age (FBA), to...

**⊗** Read full article:

http://www.jneurosci.org/cgi/content/short/45/41/e0610252025?rss=1

# The Time Course of Phonological Encoding: Insights from Time-Resolved MVPA

Li Calzi, G., Meyer, A. S., van der Burght, C.

L.

1
2025-10-08 min

195
words

JOURNAL NEUROSCIENCE CURRENT

**Summary:** To produce a word, speakers need to decide which concept to express, select an appropriate item from the mental lexicon, and spell out its phonological form. The temporal dynamics of these processes remain a subject of debate. We investigated the time course of lexical access in picture naming wi...

http://www.jneurosci.org/cgi/content/short/45/41/e0546252025?rss=1

# **Epigenetic Repression of miR-216a-3p via H3K27me3 Drives STIM1-Mediated Neuronal Excitability in Neuropathic Pain**



JOURNAL NEUROSCIENCE CURRENT

http://www.jneurosci.org/cgi/content/short/45/41/e0378252025?rss=1

# Dissociable Neural Connectome Mapping of Reward and **Punishment Responsiveness in Young Adults: Associations** with Genetic Variability and Neurotransmitter Profiles

Xu, T., Zhu, C., Zhou, X., Chen, Z., Gan, X., Cui, X., Zhou, F., Zhang, R., Zhao, W., Zhang, X., Chen, H., He, O., Lei, X., Oiu, J., Feng, T.

1 2025-10-08 min 228

JOURNAL NEUROSCIENCE CURRENT

**Summary:** While the hyper- and hypo-reward or punishment sensitivities (RS, PS) have received considerable attention as prominent transdiagnostic features of psychopathology, the lack of an overarching neurobiological characterization currently limits their early identification and neuromodulation. Here we...

#### **Read full article:**

http://www.jneurosci.org/cgi/content/short/45/41/e0195252025?rss=1

# Behavioral Timing of Interictal Spikes, But Not Rate, **Correlates with Impaired Working Memory Performance**

Yi, J. D., Pasdarnavab, M., Kueck, L., Tarcsay, G., Ewell, L.

1 163 min words

JOURNAL NEUROSCIENCE CURRENT

**Summary:** In temporal lobe epilepsy, interictal spikes (IS)—hyper-synchronous bursts of network activity—occur at high rates in between seizures. We sought to understand the influence of IS on working memory by recording hippocampal local field potentials from male epileptic mice while they per...

http://www.jneurosci.org/cgi/content/short/45/41/e0193252025?rss=1

# Cholinergic Dynamics in the Septo-hippocampal System Provide Phasic Multiplexed Signals for Spatial Novelty and Correlate with Behavioral States

Moghadam, F. F., Gutierrez-Guzman, B. E., Zheng, X., Parsa, M., Hozyen, L. M., Dannenberg, H.



**Summary:** In the hippocampal formation, cholinergic modulation from the medial septum/diagonal band of Broca is known to correlate with the speed of an animal's movements at subsecond timescales and also supports spatial memory formation. Yet, the extent to which subsecond cholinergic dynamics, if at all, ...

http://www.jneurosci.org/cgi/content/short/45/41/e0133252025?rss=1

# **Beyond Divisive Normalization: Scalable Feedforward Networks for Multisensory Integration Across Reference Frames**

1 2025-10-08 min 228 words Farahmandi, A., Abedi Khoozani, P., Blohm,

JOURNAL NEUROSCIENCE CURRENT

**Summary:** The integration of multiple sensory inputs is essential for human perception and action in uncertain environments. This process includes reference frame transformations as different sensory signals are encoded in different coordinate systems. Studies have shown multisensory integration (MSI) in h...

http://www.jneurosci.org/cgi/content/short/45/41/e0104252025?rss=1





1 0 min words



JOURNAL NEUROSCIENCE CURRENT

http://www.jneurosci.org/cgi/content/short/45/41/etwij45412025?rss=1

# The Development of Neural Inhibition across Species: **Insights from the Hurst Exponent**

Nishio, M., Ellwood-Lowe, M. E., Woodburn, M., McDermott, C. L., Park, A. T., Tooley, U. A., Boroshok, A. L., Grandjean, J., Mackey, A. P.

1 131 min words

JOURNAL NEUROSCIENCE CURRENT

**Summary:** The maturation of inhibitory neurons is crucial for regulating plasticity in developing brains. Previous work has suggested that the Hurst exponent, the measure of autocorrelation in time series, reflects inhibition, but empirical data supporting this link are sparse. Here, we demonstrate signifi...

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### **UHGAN:** a dual-phase GAN with Hough-transform constraints for accurate farmland road extraction



1 190 min words





FRONTIERS NEUROROBOTICS

Summary: IntroductionTraditional methods for farmland road extraction, such as U-Net, often struggle with complex noise and geometric features, leading to discontinuous extraction and insufficient sensitivity. To address these limitations, this study proposes a novel dual-phase generative adversarial network...

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https://www.frontiersin.org/articles/10.3389/fnbot.2025.1691300

# **UAV-based intelligent traffic surveillance using recurrent** neural networks and Swin transformer for dynamic environments



Hui 1 258 Liu min words

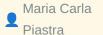
FRONTIERS NEUROROBOTICS

Summary: IntroductionUrban traffic congestion, environmental degradation, and road safety challenges necessitate intelligent aerial robotic systems capable of real-time adaptive decision-making. Unmanned Aerial Vehicles (UAVs), with their flexible deployment and high vantage point, offer a promising solution...

#### **⊗** Read full article:

https://www.frontiersin.org/articles/10.3389/fnbot.2025.1681341

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







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

1 72 2024-07-02 min words OOSTENVELD ROBERT

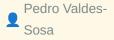
Summary: We present an extension to the Brain Imaging Data Structure (BIDS) for motion data. Motion data is frequently recorded alongside human brain imaging and electrophysiological data. The goal of Motion-BIDS is to make motion data interoperable across different laboratories and with other data modalitie...

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









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

1 65 min 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 1 82 min 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

1 65 min 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**



1 70 min 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: <em>Increasing access to data while retaining scientific utility</em>

Lyuba
Zehl

Zehl

Zo25-06-26 min

Zostenveld 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:

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

1 74 min 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 1 69
Oostenveld min words

OOSTENVELD ROBERT

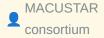
Summary: Recent technological developments have brought optically pumped magnetometers (OPMs) within reach of the larger neuroscientific community. The current state-of-the-art consists of whole-head systems that measure the magnetic field at >100 locations. OPM sensors can be constructed to measure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

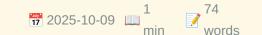
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# Patient-reported vision impairment in low luminance relates to visual function in age-related macular degeneration: A **MACUSTAR** study report









Summary: Early stages of age-related macular degeneration (AMD) can lead to a number of visual function deficits, but the patient relevance of these deficits is largely unknown. We therefore investigated how bilateral visual function domains affected by age-related macular degeneration (AMD) are associated w...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41068150/?

# Multi-interactive feature embedding learning for medical image segmentation



Yue 1 66

LOW VISION

Summary: Medical image segmentation task can provide the lesion object semantic information, but ignores edge texture details from the lesion region. Conversely, the medical image reconstruction task furnishes the object detailed information to facilitate the semantic segmentation through self-supervised lea...

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# Acute intraocular pressure changes during isometric exercise in glaucoma patients: the influence of exercise and intensity



1 42 min words





LOW VISION

Summary: CONCLUSION: These findings suggest that while isometric exercises can elevate IOP temporarily, they may still be incorporated into training regimens for POAG patients if intensity is carefully managed. Careful monitoring of IOP is essential to avoid exacerbating glaucoma conditions during isometric ...

#### Read full article:

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# Automated detection of pyogenic liver abscess and diagnosis of Klebsiella pneumoniae infection based on CECT images with deep learning: A multicenter study



Yi 1 38 Wang min words

Summary: CONCLUSIONS: The PLADA system provides an accurate, non-invasive method for KPLA diagnosis through a clinically interpretable two-stage AI framework. While limited by a retrospective, single-country dataset, this approach shows particular promise for early detection of KPLA in resource-limited settin...

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# Ocular Hypertension and Glaucoma After Pars Plana **Vitrectomy: A Systematic Review and Meta-analysis**



1 43 words

LOW VISION

Summary: CONCLUSIONS: PPV is associated with clinically meaningful risk of OHT and glaucoma, especially in pseudophakic eyes. Despite limitations from nonrandomized data and heterogeneity, these findings highlight lens status as a key modifier of post-PPV risk and support tailored surgical planning and posto...

#### Read full article:

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# Computer vision-based laser communication system for robust optical beam tracking and alignment



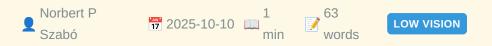
**Summary:** Free-space optical (FSO) communication is a promising technology for high-speed data transmission, but its effectiveness is highly dependent on precise beam alignment. In this work, we present a computer vision-assisted tracking system designed to maintain robust optical alignment in real time. By c...

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# Integrated petrophysical and seal characterization of the heterogeneous jurassic plover formation for CO<sub>2</sub> storage assessment in Northwest Australia



**Summary:** Geological storage of carbon dioxide is critical to mitigate emissions; however, subsurface heterogeneity poses a major challenge. This study investigates the Jurassic Plover Formation in the Browse Basin, Northwest Australia, a region underexplored for carbon storage potential. An integrated petrop...

#### Read full article:

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# The Okanagan charter in action: mapping health promotion strategies in Italian state universities in 2025









LOW VISION

Summary: CONCLUSIONS: Italian universities showed a growing but uneven commitment to health promotion. Despite frequent references to wellbeing, its integration remains partial and sectoral. This study identified key areas for improvement, such as participation, and highlighted a selection of good practices....

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# **Quantifying Effects Of Lifestyle Changes On Progression To Advanced Age-Related Macular Degeneration In High Genetic Risk Individuals**









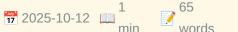
Summary: CONCLUSION: Unhealthy behaviors increased incidence of AAMD by 3 to 5fold among a highly genetically susceptible population, and 56-60% of AAMD incidence was attributed to modifiable factors: smoking, high BMI, high caloric intake and low intake of foods rich in lutein-zeaxanthin and omega-3 fatty ...

#### **Read full article:**

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# Artificial intelligence in the non-clinical laboratory: enhancing good laboratory and documentation practices









Summary: Non-clinical laboratories are under increasing regulatory pressure from agencies such as the FDA, EMA, and MHRA to ensure data integrity, traceability, and compliance with Good Laboratory Practice (GLP) and Good Documentation Practice (GDP). While Artificial Intelligence (AI) has been widely explore...

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









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...

#### Read full article:

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

Hiroyuki
Kajimoto

75 TACTILE ACUITY words

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 1 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

1

2025-07-02

min

80

words

TACTILE ACUITY

Summary: Vision impairment may delay responses to hazards when driving. In a proof-ofconcept 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...

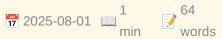
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# Sensitivity and vagal reactivity to C-tactile-mediated affective touch in mild cognitive impairment due to Alzheimer's disease







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...

#### Read full article:

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

Eric
Fjeldheim

1 2025-08-24 min

22
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



**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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https://pubmed.ncbi.nlm.nih.gov/40924900/?

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

Sviatoslav N Bagriantsev

1 58 min 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

Greenspon

1 86 min 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...

#### 

https://pubmed.ncbi.nlm.nih.gov/40964349/?

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

Runar 1 65 TACTILE ACUITY words

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



**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...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/40854103/?

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







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...

#### **⊗** Read full article:

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### **Explosion-powered eversible tactile displays**











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...

#### 

https://pubmed.ncbi.nlm.nih.gov/40864730/?

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



**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**



**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 ...

#### 

https://pubmed.ncbi.nlm.nih.gov/40871941/?

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



**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



**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:

https://pubmed.ncbi.nlm.nih.gov/40891563/?

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





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 rightsbased 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









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:

https://pubmed.ncbi.nlm.nih.gov/41013315/?

# **Development and Assessment of a Novel Audiosensory** Performance Method for Improving the Oral Health of Visually **Impaired Children**







**Summary:** This study evaluated the effectiveness of an audiosensory performance method in enhancing oral health knowledge and status among visually impaired children aged 6-12 years in the National Capital Region (NCR), Delhi. An interventional study design was used, involving 251 participants equally divided...

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# Reply to Simani et al. Home-Based tDCS: Safety **Considerations and Technical Monitoring**









TDCS TACS TRNS

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# Comparative chloroplast genomics of Erigeron (Asteroideae, Asteraceae)

Xiaoxuan
Tian

Tia

Summary: The genus Erigeron L. (Astereae, Asteroideae, Asteraceae), commonly known as fleabanes, comprises approximately 457 species with a near-cosmopolitan distribution. However, taxonomic discrepancies persist within the genus. In this study, the complete chloroplast (cp.) genomes of 16 Erigeron species w...

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# Can transcranial direct current stimulation aimed at reducing mind wandering alleviate depression?









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# Transcranial Direct Current Stimulation as a Therapeutic **Approach for Anxiety and Related Markers: Comprehensive Systematic Review**

Rosa Maria Martins de

1 50 TDCS TACS TRNS words

Summary: CONCLUSIONS: The review highlights a lack of standardized protocols for using tDCS in treating anxiety. The methodological quality of most studies was critically low, per PRISMA guidelines. There was considerable variation in methodological approaches across the studies, indicating a need for standa...

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# The role of the medial prefrontal cortex in risk and time preferences: A tDCS study



Fan 1 70 Li 2025-10-10 min words

TDCS TACS TRNS

**Summary:** Risk and time preferences are fundamental determinants of economic decision making. Although medial prefrontal cortex (mPFC) activity has been associated with valuation across these domains, causal evidence that focal mPFC perturbation alters both risky and intertemporal choices remains limited. In ...

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# Cerebellar transcranial direct current stimulation combined with virtual reality training for the balance of older adults: study protocol for a randomized controlled trial







TDCS TACS TRNS

Summary: BACKGROUND: Falls are a major public safety issue, and improving the posture control ability of elderly people is highly important for preventing falls. Transcranial direct current stimulation (tDCS) and virtual reality-based balance training (VRBT) have been proven to be effective in improving post...

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Effects of transcranial direct current stimulation on foot sensorimotor function and postural control in healthy young adults: A systematic review and meta-analysis based on randomized controlled trials



**Summary:** CONCLUSION: In conclusion, the current evidence suggested that tDCS may enhance ankle joint proprioception in healthy young adults, while no significant improvements were observed in foot muscle strength or static and dynamic postural control. Further research is warranted to determine the optimal s...

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### "Shadow government": how transcription factors regulate plant cell wall formation

Natalya
Syrchina

1 2025-10-11 min 66 TDCS TACS TRNS

Summary: The plant cell wall is a dynamic, structurally complex supramolecular compartment essential for the development, defense, and adaptation of plants to their environment. While the biosynthesis and transcriptional regulation of secondary cell walls (SCWs) have been extensively studied and are relative...

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# Lcn2 from neutrophil extracellular traps induces astrogliosis and post-stroke emotional disorders

Zhengrun

1 63 min words

**TDCS TACS TRNS** 

**Summary:** Patients with an ischemic stroke are often predisposed to emotional disorders. However, the mechanisms underlying post-stroke emotional disorders (PSEDs) remain unclear. Recent research highlights the role of neuroinflammation, driven primarily by infiltration of circulating immune cells within the ...

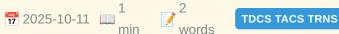
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# Response to Vogelmann et al: Contextualizing Home-Based tDCS Safety: The Remotely Supervised Model







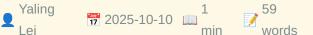
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# **Exploring the neural mechanisms of electroacupuncture for** cognitive impairment in depression using functional nearinfrared spectroscopy: a randomized controlled trial











Summary: CONCLUSION: Compared with pharmacotherapy alone, the combination of pharmacotherapy with electroacupuncture improved cognitive symptoms, mood, and executive function more effectively in patients with depression over a short period. In addition, this combination was associated with enhanced cortical ...

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# Task-specific cortical mechanisms of taVNS-paired taskoriented training for post-stroke upper extremity dysfunction under cognitive load: an fNIRS study









Summary: CONCLUSION: taVNS paired with TOT enhances autonomic homeostasis, increases corticospinal pathway excitability, activates cognition-motor related brain regions, and modulates functional connectivity networks through multi-pathway neuroregulatory mechanisms. This promotes the formation of task-specif...

#### **⊗** Read full article:

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# Multimodal MBC-ATT: cross-modality attentional fusion of **EEG-fNIRS** for cognitive state decoding











Summary: With the rapid development of brain-computer interface (BCI) technology, the effective integration of multimodal biological signals to improve classification accuracy has become a research hotspot. However, existing methods often fail to fully exploit crossmodality correlations in complex cognitive...

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Prefrontal cortex activity during virtual obstacle avoidance and distracted walking: A methodological proof of concept using augmented reality and functional near-infrared spectroscopy



**Summary:** CONCLUSIONS: This combination of technologies elicited task-dependent modulation in PFC activity and gait behaviours in healthy adults, confirming the efficacy of AR-projected obstacles in a cognitive-motor dual-task paradigm. Based on these outcomes, it is likely that this experimental approach wil...

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Effect of mahjong, a Chinese tiled-based game, combined with upper limb robot training on upper limb function and rehabilitation participation in Chinese stroke patients: a clinical trial protocol



**Summary:** INTRODUCTION: Stroke is the second leading cause of death and disability creating a huge economic burden annually. Robot-assisted training (RT) is a promising therapy in stroke rehabilitation, but for the elderly, traditional 'reaching objects'" tasks do not seem to create sufficient motivation, an ...

FNIRS

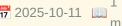
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# **Effect of Intelligence Quotient Discrepancy on Attention and Executive Function in Children with Attention Deficit Hyperactivity Disorder: An fNIRS Study**









Summary: Intelligence quotient discrepancy (IQD) is associated with neurodevelopmental disorders, but its impact on attention and executive function (EF) deficits in children with attention deficit hyperactivity disorder (ADHD) is unknown. This study aimed to examine the effect of IQD by functional near-infra...

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# Developmental changes in phonological awareness in Chinese-English bilingual children: An fNIRS longitudinal study



Tai-Li
Chou
Tai-Li
To
words



Summary: Learning to read triggers a cascade of changes in children's minds and brains, changes that lead to the formation of the "reading brain". Importantly, the developmental trajectory of these changes differs across languages. The development of phonological literacy skills comes first for learners of a...

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# Sensitivity Analysis of the Balloon Model Parameters in **Functional Near-Infrared Spectroscopy Simulation**









Summary: CONCLUSIONS: The fNIRS hemodynamic response is highly sensitive to the Balloon model's  $\alpha$  and  $\tau$  parameters. These findings highlight the importance of accounting for physiological variability in fNIRS analysis and provide a robust framework for generating synthetic data to test signal processing algo...

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# Machine learning assessment of cognitive reserve using functional near-infrared spectroscopy in older adults with cognitive frailty



**Summary:** Cognitive reserve mitigates aging-related cognitive decline and frailty, yet current assessments lack neurobiological specificity. We aimed to develop a noninvasive, functional near infrared spectroscopy (fNIRS)-based machine learning model to classify cognitive reserve levels in older adults with c...

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# Exploring age and hemispheric differences in cortical plasticity after iTBS using fNIRS



**Summary:** Non-invasive brain stimulation applied to the prefrontal cortex (PFC) has been shown to improve cognitive outcomes in older adults with cognitive impairments (Miller et al., 2023). However, the differential impact of left versus right dorsolateral prefrontal cortex (DLPFC) stimulation on prefrontal ...

#### Read full article:

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#### Does increasing canopy liana density decrease the tropical forest carbon sink?

David M
DeFilippis

DeFilippis

David M
To 2025-10-09
To words

BRAIN COMPUTER INTERFACE

Summary: The ongoing decline in the American tropical forest carbon sink has serious ramifications for atmospheric carbon levels and global climate change. Increasing liana abundance may explain the decaying carbon sink because lianas reduce canopy tree growth and survival, which limits forest carbon storage...

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### Correction: Filter bank common spatial pattern and envelopebased features in multimodal EEG-fTCD brain-computer interfaces

PLOS One Staff 2025-10-09 min 6 BRAIN COMPUTER INTERFACE





Summary: [This corrects the article DOI: 10.1371/journal.pone.0311075.].

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### Multimodal MBC-ATT: cross-modality attentional fusion of **EEG-fNIRS** for cognitive state decoding

Peng 1 63
Wusp min words

BRAIN COMPUTER INTERFACE

Summary: With the rapid development of brain-computer interface (BCI) technology, the effective integration of multimodal biological signals to improve classification accuracy has become a research hotspot. However, existing methods often fail to fully exploit crossmodality correlations in complex cognitive...

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# Three-dimensional microsurgical anatomy of the basal aspect of the cerebrum: a fiber dissection study



BRAIN COMPUTER INTERFACE

**Summary:** CONCLUSIONS: The 3D microsurgical anatomy of the basal cerebrum provides valuable insights for planning precise and safe surgical approaches and offers anatomical evidence for further studies on brain function.

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# A multi-level teacher assistant-based knowledge distillation framework with dynamic feedback for motor imagery EEG decoding



**Summary:** Deep learning has shown promise in motor imagery-based electroencephalogram (MI-EEG) decoding, a critical task in non-invasive brain-computer interfaces (BCIs). In response to the computational complexity of deep learning models to be deployed in practical BCI applications, knowledge distillation (K...

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+e462414

### **EEG-CLIP: A transformer-based framework for EEG-guided** image generation

Daoqiang
Zhang

Daoqiang
Tir 2025-10-10

Tir 2025-10-10

Tir 2025-10-10

Tir 2025-10-10

Tir 2025-10-10

Tir 2025-10-10

**Summary:** Decoding visual perception from neural signals represents a fundamental step toward advanced brain-computer interfaces (BCIs), where functional magnetic resonance imaging (fMRI) has shown promising results despite practical constraints in deployment and costs. Electroencephalography (EEG), with its ...

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#### Novel analysis method to determine the neural activation function of the inner hair cell



1 79 min words





BRAIN COMPUTER INTERFACE

Summary: Sensorineural hearing loss (SNH) is one of the most common forms of hearing loss. A special form of SNH is hidden hearing loss (HHL) with subjective normal hearing. Current research results indicate that these patients demonstrate a reduced wave I in the averaged signal of brainstem audiometry (ABR)...

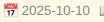
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# Retraction notice to "Decoding thoughts, encoding ethics: A narrative review of the BCI-AI revolution" [Brain Res. 1850 (2025) 149423]









2025-10-10 min BRAIN COMPUTER INTERFACE

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# **Abnormal Brain Connectivity Patterns in Children with Global Developmental Delay Accompanied by Cognitive Impairment:** A Resting-State EEG Study







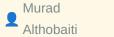
BRAIN COMPUTER INTERFACE

Summary: CONCLUSIONS: Children with GDD exhibit abnormal patterns of brain functional connectivity, characterized by global hypo-connectivity and local hyperconnectivity. Specific network metrics under these abnormal patterns are significantly correlated with cognitive impairment in GDD. This study also hig...

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#### Sensitivity Analysis of the Balloon Model Parameters in **Functional Near-Infrared Spectroscopy Simulation**



1 2025-10-11 min words

BRAIN COMPUTER INTERFACE

Summary: CONCLUSIONS: The fNIRS hemodynamic response is highly sensitive to the Balloon model's  $\alpha$  and  $\tau$  parameters. These findings highlight the importance of accounting for physiological variability in fNIRS analysis and provide a robust framework for generating synthetic data to test signal processing algo...

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





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 (<em>N</em> = 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.

1 198 min 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.

1 237 min 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

# Cognitive deficits in Spanish-speaking Mexican children with developmental dyslexia.

1 240 NEUROPSYCHOLOGY words

**Summary:** Objective: Developmental dyslexia (DD) has been related to deficits in multiple cognitive skills. Phonological processing deficits are the most frequently reported in opaque orthographies, but there are few studies of transparent orthographies, such as Spanish. The aim of this study was to comprehen...

http://doi.org/10.1037/neu0001035

# Explicit and implicit representation of reward value in cocaine use disorder (CUD): A mouse kinematic study on intertemporal decision-making.



**Summary:** Objective: Cocaine use disorder (CUD) is a chronic condition with implications on cognitive functions such as decision-making and impulse control. Intertemporal choice paradigms, measuring temporal discounting, offer insight into decision-making of addictive behaviors. When coupled with mouse kinema...

http://doi.org/10.1037/neu0001025

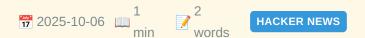
# Anhedonia is associated with impaired memory for positive emotional stimuli in individuals with schizophrenia.



**Summary:** Objective: Individuals with psychotic disorders routinely display anhedonia when rated on clinical interviews that rely on retrospective reports of pleasure; however, hedonic response is intact on laboratory paradigms measuring self-reported in-the-moment (i.e., consummatory) pleasure. It is current...

http://doi.org/10.1037/neu0001011

#### **Reflections on 2 Years Running Developer Relations**



Summary: <a href="https://news.ycombinator.com/item?id=45491008">Comments</a>

https://databased.pedramnavid.com/p/reflections-on-2-years-running-developer

#### Ask HN: What are you working on? (October 2025)



Summary: <a href="https://news.ycombinator.com/item?id=45561428">Comments</a>

https://news.ycombinator.com/item?id=45561428

### **Edge AI for Beginners**



**Summary:** Article URL: <a href="https://github.com/microsoft/edgeai-for-beginners">https://github.com/microsoft/edgeai-for-beginners</a> Comments URL: <a href="https://news.ycombinator.com/item?id=45561700">https://news.ycombinator.com/item?id=45561700">https://news.ycombinator.com/item?id=45561700">https://news.ycombinator.com/item?id=45561700</a> Points: 131 # Comments: 46</p...

**⊗** Read full article:

https://github.com/microsoft/edgeai-for-beginners

#### Important Changes to the 2024 ERP Boot Camp

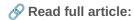






**ERP BOOT CAMP** 

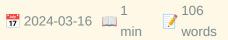
Summary: We are disappointed to announce that we will not be holding a regular 10-day ERP Boot Camp this summer.
class="">We have held Boot Camps nearly every summer since 2007, supported by a series of generous grants from NIMH that allowed us to provide scholarships for all attendees. Unf...



https://erpinfo.org/blog/2024/3/5/changes-to-the-2024-erp-boot-camp

# Registration is now full for the 2024 ERP Boot Camp







ERP BOOT CAMP

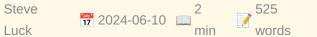
Summary: The demand for the<a href="https://erpinfo.org/2024-erp-bootcamp"> 2024 ERP Boot Camp</a> was far beyond our expectations, and we reached our maximum registration of 30 people within one day. We already have a waiting list of over 30 people, so we have closed the registration site.<...



https://erpinfo.org/blog/2024/3/15/registration-full

# New Paper: Using Multivariate Pattern Analysis to Increase **Effect Sizes for ERP Amplitude Comparisons**







ERP BOOT CAMP

Summary: Carrasco, C. D., Bahle, B., Simmons, A. M., & D., Luck, S. J. (2024). Using multivariate pattern analysis to increase effect sizes for event-related potential analyses. Psychophysiology, 61, e14570. <a href="https://doi.org/10.1111/psyp.">https://doi.org/10.1111/psyp.</a> 14570">https://doi.org/10.1111/psyp.14570</a> [<a h...

#### 

https://erpinfo.org/blog/2024/6/10/erp-core-decoding-paper

#### New software package: ERPLAB Studio







ERP BOOT CAMP

Summary: We are excited to announce the release of a new EEG/ERP analysis package, <a href="https://github.com/ucdavis/erplab/releases">ERPLAB Studio</ a>. We think it's a huge improvement over the classic EEGLAB user interface. See our cheesy <a href="https://www.youtube.com/watch?v=llaKVQ9DD6E">...



https://erpinfo.org/blog/2024/6/11/erplab-studio

#### Recording and slides now available for ERPLAB Studio webinar

Steve 1 30 ERP BOOT CAMP

Summary: We held a webinar to demonstration ERPLAB Studio on 28 June 2024.<a href="https://youtu.be/k-nGv00rTP8">Click here</a> to access a recording.<a href="https://ucdavis.box.com/s/" 4fseqz6327dtuouauj12rgvivy1d1nmo">Click here </a>to access a PDF of the slides.<...

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 7 1547 Luck min words



ERP BOOT CAMP

Summary: Carrasco, C. D., Simmons, A. M., Kiat, J. E., & D., Luck, S. J. (in press). Enhanced working memory representations for rare events. <em>Psychophysiology</em>. <a href="https://doi.org/10.1111/psyp.70038">https://doi.org/ 10.1111/psyp.70038</a> [<a href="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

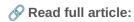


1 138 min words



**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...



https://erpinfo.org/blog/2025/8/20/boot-camp-summer-2026

# Slow wave dynamics of scalp EEG can be explained by simple statistical models of long-range connections



NEUROIMAGE

**Summary:** Publication date: 1 November 2025<b>Source:</b> NeuroImage, Volume 321Author(s): Mariia Steeghs-Turchina, Ramesh Srinivasan, Paul L. Nunez, Michael D. Nunez



https://www.sciencedirect.com/science/article/pii/S1053811925004215?dgcid=rss sd all

# Longitudinal changes in late-life brain health after prenatal exposure to the Dutch famine



NEUROIMAGE

**Summary:** Publication date: 1 November 2025<b>Source:</b> NeuroImage, Volume 321Author(s): A Boots, A Schrantee, B E Padrela, A M Wiegersma, J S Damoiseaux, H J M M Mutsaerts, L Lorenzini, T J Roseboom, S R de Rooij

Read full article:

https://www.sciencedirect.com/science/article/pii/S1053811925005087?dgcid=rss\_sd\_all

# Estimation of brain activity sources of sympathovagal dynamics



NEUROIMAGE

Summary: Publication date: 1 November 2025<b>Source:</b> NeuroImage, Volume 321Author(s): Dario Milea, Vincenzo Catrambone, Gaetano Valenza

https://www.sciencedirect.com/science/article/pii/S105381192500504X?dgcid=rss\_sd\_all

# White matter hyperintensity-associated iron overload links glymphatic system dysfunction to cognitive impairment in cerebral small vessel disease

1 min



NEUROIMAGE

**Summary:** Publication date: 1 November 2025<b>Source:</b> NeuroImage, Volume 321Author(s): Yage Qiu, Ying Hu, Weina Ding, Qingyang Fu, Wentao Hu, Yuanzheng Wang, Qun Xu, Yongming Dai, Yawen Sun, Yan Zhou

**⊗** Read full article:

https://www.sciencedirect.com/science/article/pii/S105381192500518X?dgcid=rss\_sd\_all

# As apparent as real: alpha and beta bands desynchronization unveils apparent motion perception dynamics

1 min



NEUROIMAGE

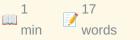
**Summary:** Publication date: 1 November 2025<b>Source:</b> NeuroImage, Volume 321Author(s): Marcella Romeo, Francesca Genovese, Monica Betta, Alice Rossi Sebastiano, Lorenzo Teresi, Nicoletta Scanferlato, Corrado Sinigaglia, Emiliano Ricciardi, Francesca Garbarini

**⊗** Read full article:

https://www.sciencedirect.com/science/article/pii/S1053811925005075?dqcid=rss\_sd\_all

The intrinsic connectivity between the default mode and dorsal attention networks is an independent fMRI biomarker of Alzheimer's disease pathology burden





NEUROIMAGE

Summary: Publication date: 1 November 2025<b>Source:</b> NeuroImage, Volume 321Author(s): Diego-Martin Lombardo, Christian F Beckmann, Alzheimer's Disease Neuroimaging Initiative



https://www.sciencedirect.com/science/article/pii/S1053811925005129?dgcid=rss\_sd\_all

#### Protective factors against technostress in secondary school teachers





NATURE NEUROSCIENCE SUBJECTS

https://www.nature.com/articles/s41598-025-19604-4

# Central and peripheral neural circuits regulating glucose homeostasis



**Read full article:** 

https://www.nature.com/articles/s44385-025-00036-8

# Neural representation of mixed feelings during real-time processing of negative words in pun-humor



https://www.nature.com/articles/s42003-025-08857-4

# Diffusion-weighted imaging and retinal oximetry as potential biomarkers of visual outcomes after optic neuritis



https://www.nature.com/articles/s41598-025-19331-w

# RNF213 c.14429G > A (p.Arg4810Lys) is associated with nonarteritic retinal artery occlusion



**S** Read full article:

https://www.nature.com/articles/s41598-025-19517-2

# Paternal SARS-CoV-2 infection impacts sperm small noncoding RNAs and increases anxiety in offspring in a sex-dependent manner



https://www.nature.com/articles/s41467-025-64473-0

# Generation of synthetic TSPO PET maps from structural MRI images

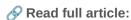






FRONTIERS NEUROINFORMATICS

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...



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









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...



https://www.frontiersin.org/articles/10.3389/fncom.2025.1635497

### Statistical characterization of cortical-thalamic dynamics evoked by cortical stimulation in mice

Diana Nigrisoli, Simone Russo, Ruggero Freddi, Nicolas Seseri, Stefania Corti, Linda Ottoboni and Riccardo Barbieri







JOURNAL NEURAL ENGINEERING

Summary: Objective. Statistical models are powerful tools for describing biological phenomena such as neuronal spiking activity. Although these models have been widely used to study spontaneous and stimulated neuronal activity, they have not yet been applied to analyze responses to electrical cortical stimul...



http://iopscience.iop.org/article/10.1088/1741-2552/ae0966

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







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 .

1 72 2024-07-02 min words OOSTENVELD ROBERT

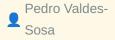
Summary: We present an extension to the Brain Imaging Data Structure (BIDS) for motion data. Motion data is frequently recorded alongside human brain imaging and electrophysiological data. The goal of Motion-BIDS is to make motion data interoperable across different laboratories and with other data modalitie...

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







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

1 65 min 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 1 82 min 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

1 65 min 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**



1 70 min 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: <em>Increasing access to data while retaining scientific utility</em>

Lyuba
Zehl

Zehl

Zo25-06-26 min

Zostenveld 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:

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

1 74 min 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 1 69
Oostenveld min words

OOSTENVELD ROBERT

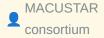
Summary: Recent technological developments have brought optically pumped magnetometers (OPMs) within reach of the larger neuroscientific community. The current state-of-the-art consists of whole-head systems that measure the magnetic field at >100 locations. OPM sensors can be constructed to measure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

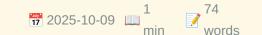
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# Patient-reported vision impairment in low luminance relates to visual function in age-related macular degeneration: A **MACUSTAR** study report









Summary: Early stages of age-related macular degeneration (AMD) can lead to a number of visual function deficits, but the patient relevance of these deficits is largely unknown. We therefore investigated how bilateral visual function domains affected by age-related macular degeneration (AMD) are associated w...

#### Read full article:

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## Multi-interactive feature embedding learning for medical image segmentation



Yue 1 66

LOW VISION

Summary: Medical image segmentation task can provide the lesion object semantic information, but ignores edge texture details from the lesion region. Conversely, the medical image reconstruction task furnishes the object detailed information to facilitate the semantic segmentation through self-supervised lea...

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https://pubmed.ncbi.nlm.nih.gov/41070074/?

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## Acute intraocular pressure changes during isometric exercise in glaucoma patients: the influence of exercise and intensity



1 42 min words





LOW VISION

Summary: CONCLUSION: These findings suggest that while isometric exercises can elevate IOP temporarily, they may still be incorporated into training regimens for POAG patients if intensity is carefully managed. Careful monitoring of IOP is essential to avoid exacerbating glaucoma conditions during isometric ...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41071217/?

## Automated detection of pyogenic liver abscess and diagnosis of Klebsiella pneumoniae infection based on CECT images with deep learning: A multicenter study



Summary: CONCLUSIONS: The PLADA system provides an accurate, non-invasive method for KPLA diagnosis through a clinically interpretable two-stage AI framework. While

limited by a retrospective, single-country dataset, this approach shows particular promise

for early detection of KPLA in resource-limited settin...

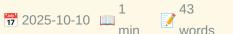
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## Ocular Hypertension and Glaucoma After Pars Plana **Vitrectomy: A Systematic Review and Meta-analysis**









Summary: CONCLUSIONS: PPV is associated with clinically meaningful risk of OHT and glaucoma, especially in pseudophakic eyes. Despite limitations from nonrandomized data and heterogeneity, these findings highlight lens status as a key modifier of post-PPV risk and support tailored surgical planning and posto...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41072737/?

## Computer vision-based laser communication system for robust optical beam tracking and alignment

Shuai
Li

2025-10-10

min

71

words

Low Vision

**Summary:** Free-space optical (FSO) communication is a promising technology for high-speed data transmission, but its effectiveness is highly dependent on precise beam alignment. In this work, we present a computer vision-assisted tracking system designed to maintain robust optical alignment in real time. By c...

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# Integrated petrophysical and seal characterization of the heterogeneous jurassic plover formation for CO<sub>2</sub> storage assessment in Northwest Australia



**Summary:** Geological storage of carbon dioxide is critical to mitigate emissions; however, subsurface heterogeneity poses a major challenge. This study investigates the Jurassic Plover Formation in the Browse Basin, Northwest Australia, a region underexplored for carbon storage potential. An integrated petrop...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41073534/?

## The Okanagan charter in action: mapping health promotion strategies in Italian state universities in 2025





LOW VISION

Summary: CONCLUSIONS: Italian universities showed a growing but uneven commitment to health promotion. Despite frequent references to wellbeing, its integration remains partial and sectoral. This study identified key areas for improvement, such as participation, and highlighted a selection of good practices....

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## **Quantifying Effects Of Lifestyle Changes On Progression To Advanced Age-Related Macular Degeneration In High Genetic Risk Individuals**









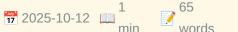
Summary: CONCLUSION: Unhealthy behaviors increased incidence of AAMD by 3 to 5fold among a highly genetically susceptible population, and 56-60% of AAMD incidence was attributed to modifiable factors: smoking, high BMI, high caloric intake and low intake of foods rich in lutein-zeaxanthin and omega-3 fatty ...

#### **Read full article:**

https://pubmed.ncbi.nlm.nih.gov/41076031/?

## Artificial intelligence in the non-clinical laboratory: enhancing good laboratory and documentation practices







Summary: Non-clinical laboratories are under increasing regulatory pressure from agencies such as the FDA, EMA, and MHRA to ensure data integrity, traceability, and compliance with Good Laboratory Practice (GLP) and Good Documentation Practice (GDP). While Artificial Intelligence (AI) has been widely explore...

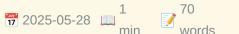
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## The taste of trigeminal sensations: relation between taste, lingual tactile acuity, and spicy perception in patients with taste dysfunction









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...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/40434896/?

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

Hiroyuki
Kajimoto

75 TACTILE ACUITY words

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









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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https://pubmed.ncbi.nlm.nih.gov/40577301/?

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

Alex R

Bowers

1

2025-07-02

min

80

words

TACTILE ACUITY

Summary: Vision impairment may delay responses to hazards when driving. In a proof-ofconcept 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...

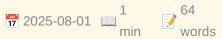
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## Sensitivity and vagal reactivity to C-tactile-mediated affective touch in mild cognitive impairment due to Alzheimer's disease







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...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/40746091/?

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

Eric 1 2025-08-24 min 22 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



**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...

#### **Read full article:**

https://pubmed.ncbi.nlm.nih.gov/40924900/?

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

Sviatoslav N Bagriantsev

1 2025-09-13 min 58 TACTILE ACUITY words

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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https://pubmed.ncbi.nlm.nih.gov/40945511/?

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

Greenspon

1 86 min 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...

#### 

https://pubmed.ncbi.nlm.nih.gov/40964349/?

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

Runar 1 65 Words Words

**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:

https://pubmed.ncbi.nlm.nih.gov/41007234/?

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



**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...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/40854103/?

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







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...

#### **⊗** Read full article:

https://pubmed.ncbi.nlm.nih.gov/40855574/?

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## **Explosion-powered eversible tactile displays**











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...

#### 

https://pubmed.ncbi.nlm.nih.gov/40864730/?

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



1 57 min words

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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https://pubmed.ncbi.nlm.nih.gov/40874468/?

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



Min 1 64
Zhang min 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 ...

#### 

https://pubmed.ncbi.nlm.nih.gov/40871941/?

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



**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...

#### **⊗** Read full article:

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



**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:

https://pubmed.ncbi.nlm.nih.gov/40891563/?

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



1 55 min words



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 rightsbased 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



1 42 min words





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:

https://pubmed.ncbi.nlm.nih.gov/41013315/?

## **Development and Assessment of a Novel Audiosensory** Performance Method for Improving the Oral Health of Visually **Impaired Children**







**Summary:** This study evaluated the effectiveness of an audiosensory performance method in enhancing oral health knowledge and status among visually impaired children aged 6-12 years in the National Capital Region (NCR), Delhi. An interventional study design was used, involving 251 participants equally divided...

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## Reply to Simani et al. Home-Based tDCS: Safety **Considerations and Technical Monitoring**







TDCS TACS TRNS

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41067686/?

## Comparative chloroplast genomics of Erigeron (Asteroideae, Asteraceae)

Xiaoxuan
Tian

Tia

Summary: The genus Erigeron L. (Astereae, Asteroideae, Asteraceae), commonly known as fleabanes, comprises approximately 457 species with a near-cosmopolitan distribution. However, taxonomic discrepancies persist within the genus. In this study, the complete chloroplast (cp.) genomes of 16 Erigeron species w...

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## Can transcranial direct current stimulation aimed at reducing mind wandering alleviate depression?









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https://pubmed.ncbi.nlm.nih.gov/41069944/?

## Transcranial Direct Current Stimulation as a Therapeutic **Approach for Anxiety and Related Markers: Comprehensive Systematic Review**

Rosa Maria Martins de

1 50 TDCS TACS TRNS words

Summary: CONCLUSIONS: The review highlights a lack of standardized protocols for using tDCS in treating anxiety. The methodological quality of most studies was critically low, per PRISMA guidelines. There was considerable variation in methodological approaches across the studies, indicating a need for standa...

#### **⊗** Read full article:

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## The role of the medial prefrontal cortex in risk and time preferences: A tDCS study

Fan 1 70 Li 2025-10-10 min words

TDCS TACS TRNS

**Summary:** Risk and time preferences are fundamental determinants of economic decision making. Although medial prefrontal cortex (mPFC) activity has been associated with valuation across these domains, causal evidence that focal mPFC perturbation alters both risky and intertemporal choices remains limited. In ...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41072297/?

## Cerebellar transcranial direct current stimulation combined with virtual reality training for the balance of older adults: study protocol for a randomized controlled trial







TDCS TACS TRNS

Summary: BACKGROUND: Falls are a major public safety issue, and improving the posture control ability of elderly people is highly important for preventing falls. Transcranial direct current stimulation (tDCS) and virtual reality-based balance training (VRBT) have been proven to be effective in improving post...

#### 

https://pubmed.ncbi.nlm.nih.gov/41074127/?

Effects of transcranial direct current stimulation on foot sensorimotor function and postural control in healthy young adults: A systematic review and meta-analysis based on randomized controlled trials



**Summary:** CONCLUSION: In conclusion, the current evidence suggested that tDCS may enhance ankle joint proprioception in healthy young adults, while no significant improvements were observed in foot muscle strength or static and dynamic postural control. Further research is warranted to determine the optimal s...

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## "Shadow government": how transcription factors regulate plant cell wall formation

Natalya
Syrchina

1 2025-10-11 min 66 TDCS TACS TRNS

Summary: The plant cell wall is a dynamic, structurally complex supramolecular compartment essential for the development, defense, and adaptation of plants to their environment. While the biosynthesis and transcriptional regulation of secondary cell walls (SCWs) have been extensively studied and are relative...

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https://pubmed.ncbi.nlm.nih.gov/41075738/?

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## Lcn2 from neutrophil extracellular traps induces astrogliosis and post-stroke emotional disorders

Zhengrun

1 63 min words



**TDCS TACS TRNS** 

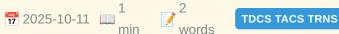
**Summary:** Patients with an ischemic stroke are often predisposed to emotional disorders. However, the mechanisms underlying post-stroke emotional disorders (PSEDs) remain unclear. Recent research highlights the role of neuroinflammation, driven primarily by infiltration of circulating immune cells within the ...

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https://pubmed.ncbi.nlm.nih.gov/41075784/?

## Response to Vogelmann et al: Contextualizing Home-Based tDCS Safety: The Remotely Supervised Model







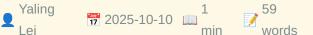
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## **Exploring the neural mechanisms of electroacupuncture for** cognitive impairment in depression using functional nearinfrared spectroscopy: a randomized controlled trial











Summary: CONCLUSION: Compared with pharmacotherapy alone, the combination of pharmacotherapy with electroacupuncture improved cognitive symptoms, mood, and executive function more effectively in patients with depression over a short period. In addition, this combination was associated with enhanced cortical ...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41069950/?

## Task-specific cortical mechanisms of taVNS-paired taskoriented training for post-stroke upper extremity dysfunction under cognitive load: an fNIRS study



1 57 min words



Summary: CONCLUSION: taVNS paired with TOT enhances autonomic homeostasis, increases corticospinal pathway excitability, activates cognition-motor related brain regions, and modulates functional connectivity networks through multi-pathway neuroregulatory mechanisms. This promotes the formation of task-specif...

#### **⊗** Read full article:

https://pubmed.ncbi.nlm.nih.gov/41070188/?

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## Multimodal MBC-ATT: cross-modality attentional fusion of **EEG-fNIRS** for cognitive state decoding



1 63 words







Summary: With the rapid development of brain-computer interface (BCI) technology, the effective integration of multimodal biological signals to improve classification accuracy has become a research hotspot. However, existing methods often fail to fully exploit crossmodality correlations in complex cognitive...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41070190/?

Prefrontal cortex activity during virtual obstacle avoidance and distracted walking: A methodological proof of concept using augmented reality and functional near-infrared spectroscopy



**Summary:** CONCLUSIONS: This combination of technologies elicited task-dependent modulation in PFC activity and gait behaviours in healthy adults, confirming the efficacy of AR-projected obstacles in a cognitive-motor dual-task paradigm. Based on these outcomes, it is likely that this experimental approach wil...

#### 

https://pubmed.ncbi.nlm.nih.gov/41071803/?

Effect of mahjong, a Chinese tiled-based game, combined with upper limb robot training on upper limb function and rehabilitation participation in Chinese stroke patients: a clinical trial protocol







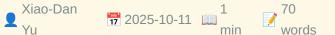


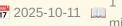
Summary: INTRODUCTION: Stroke is the second leading cause of death and disability creating a huge economic burden annually. Robot-assisted training (RT) is a promising therapy in stroke rehabilitation, but for the elderly, traditional 'reaching objects'" tasks do not seem to create sufficient motivation, an ...

#### 

https://pubmed.ncbi.nlm.nih.gov/41073118/?

## **Effect of Intelligence Quotient Discrepancy on Attention and Executive Function in Children with Attention Deficit Hyperactivity Disorder: An fNIRS Study**









Summary: Intelligence quotient discrepancy (IQD) is associated with neurodevelopmental disorders, but its impact on attention and executive function (EF) deficits in children with attention deficit hyperactivity disorder (ADHD) is unknown. This study aimed to examine the effect of IQD by functional near-infra...

#### 

https://pubmed.ncbi.nlm.nih.gov/41076036/?

## Developmental changes in phonological awareness in Chinese-English bilingual children: An fNIRS longitudinal study



Tai-Li
Chou
Tai-Li
To
words



Summary: Learning to read triggers a cascade of changes in children's minds and brains, changes that lead to the formation of the "reading brain". Importantly, the developmental trajectory of these changes differs across languages. The development of phonological literacy skills comes first for learners of a...

#### **⊗** Read full article:

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## Sensitivity Analysis of the Balloon Model Parameters in **Functional Near-Infrared Spectroscopy Simulation**







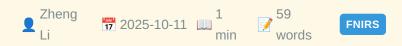


Summary: CONCLUSIONS: The fNIRS hemodynamic response is highly sensitive to the Balloon model's  $\alpha$  and  $\tau$  parameters. These findings highlight the importance of accounting for physiological variability in fNIRS analysis and provide a robust framework for generating synthetic data to test signal processing algo...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41076093/?

# Machine learning assessment of cognitive reserve using functional near-infrared spectroscopy in older adults with cognitive frailty



**Summary:** Cognitive reserve mitigates aging-related cognitive decline and frailty, yet current assessments lack neurobiological specificity. We aimed to develop a noninvasive, functional near infrared spectroscopy (fNIRS)-based machine learning model to classify cognitive reserve levels in older adults with c...

#### **⊗** Read full article:

https://pubmed.ncbi.nlm.nih.gov/41076505/?

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# Exploring age and hemispheric differences in cortical plasticity after iTBS using fNIRS



**Summary:** Non-invasive brain stimulation applied to the prefrontal cortex (PFC) has been shown to improve cognitive outcomes in older adults with cognitive impairments (Miller et al., 2023). However, the differential impact of left versus right dorsolateral prefrontal cortex (DLPFC) stimulation on prefrontal ...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41077115/?

## Does increasing canopy liana density decrease the tropical forest carbon sink?

David M
DeFilippis

DeFilippis

David M
To 2025-10-09
To words

BRAIN COMPUTER INTERFACE

Summary: The ongoing decline in the American tropical forest carbon sink has serious ramifications for atmospheric carbon levels and global climate change. Increasing liana abundance may explain the decaying carbon sink because lianas reduce canopy tree growth and survival, which limits forest carbon storage...

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## Correction: Filter bank common spatial pattern and envelopebased features in multimodal EEG-fTCD brain-computer interfaces

PLOS One Staff 2025-10-09 min words BRAIN COMPUTER INTERFACE

Summary: [This corrects the article DOI: 10.1371/journal.pone.0311075.].

#### **⊗** Read full article:

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## Multimodal MBC-ATT: cross-modality attentional fusion of **EEG-fNIRS** for cognitive state decoding

Peng 1 63
Wusp min words

BRAIN COMPUTER INTERFACE

Summary: With the rapid development of brain-computer interface (BCI) technology, the effective integration of multimodal biological signals to improve classification accuracy has become a research hotspot. However, existing methods often fail to fully exploit crossmodality correlations in complex cognitive...

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## Three-dimensional microsurgical anatomy of the basal aspect of the cerebrum: a fiber dissection study

1 29 min 29 words

BRAIN COMPUTER INTERFACE

**Summary:** CONCLUSIONS: The 3D microsurgical anatomy of the basal cerebrum provides valuable insights for planning precise and safe surgical approaches and offers anatomical evidence for further studies on brain function.

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# A multi-level teacher assistant-based knowledge distillation framework with dynamic feedback for motor imagery EEG decoding



**Summary:** Deep learning has shown promise in motor imagery-based electroencephalogram (MI-EEG) decoding, a critical task in non-invasive brain-computer interfaces (BCIs). In response to the computational complexity of deep learning models to be deployed in practical BCI applications, knowledge distillation (K...

#### **⊗** Read full article:

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+e462414

## **EEG-CLIP:** A transformer-based framework for EEG-guided image generation

Daoqiang
Zhang

Daoqiang
Tir 2025-10-10

Tir 2025-10-10

Tir 2025-10-10

Tir 2025-10-10

Tir 2025-10-10

Tir 2025-10-10

**Summary:** Decoding visual perception from neural signals represents a fundamental step toward advanced brain-computer interfaces (BCIs), where functional magnetic resonance imaging (fMRI) has shown promising results despite practical constraints in deployment and costs. Electroencephalography (EEG), with its ...

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## Novel analysis method to determine the neural activation function of the inner hair cell



1 79 min words





BRAIN COMPUTER INTERFACE

Summary: Sensorineural hearing loss (SNH) is one of the most common forms of hearing loss. A special form of SNH is hidden hearing loss (HHL) with subjective normal hearing. Current research results indicate that these patients demonstrate a reduced wave I in the averaged signal of brainstem audiometry (ABR)...

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## Retraction notice to "Decoding thoughts, encoding ethics: A narrative review of the BCI-AI revolution" [Brain Res. 1850 (2025) 149423]





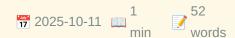


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## **Abnormal Brain Connectivity Patterns in Children with Global Developmental Delay Accompanied by Cognitive Impairment:** A Resting-State EEG Study









BRAIN COMPUTER INTERFACE

Summary: CONCLUSIONS: Children with GDD exhibit abnormal patterns of brain functional connectivity, characterized by global hypo-connectivity and local hyperconnectivity. Specific network metrics under these abnormal patterns are significantly correlated with cognitive impairment in GDD. This study also hig...

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## Sensitivity Analysis of the Balloon Model Parameters in **Functional Near-Infrared Spectroscopy Simulation**

Murad
Althobaiti

1
2025-10-11
min

43
BRAIN COMPUTER INTERFACE

Summary: CONCLUSIONS: The fNIRS hemodynamic response is highly sensitive to the Balloon model's  $\alpha$  and  $\tau$  parameters. These findings highlight the importance of accounting for physiological variability in fNIRS analysis and provide a robust framework for generating synthetic data to test signal processing algo...

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https://pubmed.ncbi.nlm.nih.gov/41076093/?

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## **Emacs agent-shell (powered by ACP)**

1 2 2 min words

HACKER NEWS

Summary: <a href="https://news.ycombinator.com/item?id=45561672">Comments</a>

https://xenodium.com/introducing-agent-shell

### **Emacs agent-shell (powered by ACP)**

HACKER NEWS

Summary: Also: <a href="https://xenodium.com/agent-shell-0-5-improvements" rel="nofollow">https://xenodium.com/agent-shell-0-5-improvements</a> <hr /> Comments URL: <a href="https://news.ycombinator.com/item?id=45561672">https:// news.ycombinator.com/item?id=45561672</a> Points: 129 # ...

https://xenodium.com/introducing-agent-shell

#### **Education: Additional Resources**



1 61 min 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...

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https://brain.ieee.org/publications/neuroethics-framework/education/educational-and-training-resourceseducation/education-additional-resources/

#### **Education: References**









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...



https://brain.ieee.org/publications/neuroethics-framework/education/references/education-references/

### **IEEE Brain Annual Flagship Workshop a Success**











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...



https://brain.ieee.org/braininsight-articles/ieee-brain-annual-flagship-workshop-a-success/

### **IEEE Brain Workshop on AI for Neurotechnology**

**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...

https://brain.ieee.org/braininsight-articles/ieee-brain-workshop-on-ai-for-neurotechnology/

### **Call for Papers: IEEE Brain Special Issue**



**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.

https://brain.ieee.org/braininsight-articles/ieee-journal-on-flexible-electronics/

#### **IEEE Brain Joins the American Brain Coalition**

**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...

#### 

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



**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...

#### 

https://brain.ieee.org/braininsight-articles/call-for-papers-ieee-transactions-on-human-machine-systems/

### **Call for 2025 Society Awards Nominations**







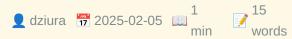


**Summary:** The post <a href="https://www.embs.org/awards/society-awards/" #new tab">Call for 2025 Society Awards Nominations</a> appeared first on <a href="https://www.embs.org">IEEE EMBS</a>.



https://www.embs.org/awards/society-awards/#new\_tab

### **Bridging Biotech: Regional shifts and patterns**









Summary: The post <a href="https://www.embs.org/blog-post/regional-shifts-andpatterns/">Bridging Biotech: Regional shifts and patterns</a> appeared first on <a href="https://www.embs.org">IEEE EMBS</a>.



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**









Summary: The post <a href="https://www.embs.org/blog-post/welcoming-dr-ana-kyanias-wibme-chair-ieee-embs/">Welcoming Dr. Ana Kyani as the New Women in Biomedical Engineering Chair for IEEE EMBS</a> appeared first on <a href="https:// www.embs.org">IEEE EMBS</a>.

#### 

https://www.embs.org/blog-post/welcoming-dr-ana-kyani-as-wibme-chair-ieee-embs/

## Ivan Lee, Appointed Editor-in-Chief of EMBC Proceedings











**Summary:** The post <a href="https://www.embs.org/press/embc-eicsunghoon-ivan-lee/#new tab">Ivan Lee, Appointed Editor-in-Chief of EMBC Proceedings</ a> appeared first on <a href="https://www.embs.org">IEEE EMBS</a>.

#### 

https://www.embs.org/press/embc-eic-sunghoon-ivan-lee/#new tab

## Barriers that Programming Instructors Face While Performing Emergency Pedagogical Design to Shape Student-Al Interactions with Generative Al Tools

Sam Lau (University of California San Diego), Kianoosh Boroojeni (Florida International University), Harry Keeling (Howard University), Jenn Marroquin (Google)



**Summary:** arXiv:2510.09492v1 Announce Type: new Abstract: Generative AI (GenAI) tools are increasingly pervasive, pushing instructors to redesign how students use GenAI tools in coursework. We conceptualize this work as emergency pedagogical design: reactive, indirect efforts by instructors to shape student-...

## **Investigating the Impact of Rational Dilated Wavelet Transform on Motor Imagery EEG Decoding with Deep Learning Models**

Marco Siino, Giuseppe Bonomo, Rosario Sorbello, Ilenia

1 2025-10-13 min

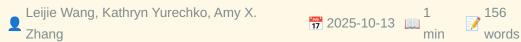
ARXIV CS HC

**Summary:** arXiv:2510.09242v1 Announce Type: new Abstract: The present study investigates the impact of the Rational Discrete Wavelet Transform (RDWT), used as a plug-in preprocessing step for motor imagery electroencephalographic (EEG) decoding prior to applying deep learning classifiers. A systematic paired...



https://arxiv.org/abs/2510.09242

## **Promptimizer: User-Led Prompt Optimization for Personal Content Classification**





ARXIV CS HC

Summary: arXiv:2510.09009v1 Announce Type: new Abstract: While LLMs now enable users to create content classifiers easily through natural language, automatic prompt optimization techniques are often necessary to create performant classifiers. However, such techniques can fail to consider how social media us...

## Creation, Critique, and Consumption: Exploring Generative Al **Descriptions for Supporting Blind and Low Vision Professionals with Visual Tasks**

Lucy Jiang, Lotus Zhang, Leah

1 2025-10-13 min 85 words

ARXIV CS HC

Summary: arXiv:2510.08991v1 Announce Type: new Abstract: Many blind and low vision (BLV) people are excluded from professional roles that may involve visual tasks due to access barriers and persisting stigmas. Advancing generative AI systems can support BLV people through providing contextual and personaliz...

**⊗** Read full article:

https://arxiv.org/abs/2510.08991

## Co-Authoring the Self: A Human-Al Interface for Interest **Reflection in Recommenders**

Ruixuan Sun, Junyuan Wang, Sanjali Roy, Joseph A.

ARXIV CS HC

Summary: arXiv:2510.08930v1 Announce Type: new Abstract: Natural language-based user profiles in recommender systems have been explored for their interpretability and potential to help users scrutinize and refine their interests, thereby improving recommendation quality. Building on this foundation, we intr...

**⊗** Read full article:

## "I know it's not right, but that's what it said to do": **Investigating Trust in AI Chatbots for Cybersecurity Policy**

Brandon Lit, Edward Crowder, Daniel Vogel, Hassan Khan

1 124 min words

ARXIV CS HC

**Summary:** arXiv:2510.08917v1 Announce Type: new Abstract: Al chatbots are an emerging security attack vector, vulnerable to threats such as prompt injection, and rogue chatbot creation. When deployed in domains such as corporate security policy, they could be weaponized to deliver guidance that intentionally...

https://arxiv.org/abs/2510.08917

## **Beyond Words: Infusing Conversational Agents with Human**like Typing Behaviors

Jijie Zhou, Yuhan

1 2025-10-13 min 211 words

ARXIV CS HC

Summary: arXiv:2510.08912v1 Announce Type: new Abstract: Recently, large language models have facilitated the emergence of highly intelligent conversational AI capable of engaging in human-like dialogues. However, a notable distinction lies in the fact that these Al models predominantly generate responses r...

#### **Green Grid: Smart Tech Meets E-Waste**

Yashodip Dharmendra Jagtap, Aaditya Ganesh Bagul

1 143 words

ARXIV CS HC

**Summary:** arXiv:2510.08888v1 Announce Type: new Abstract: Electronic waste (e-waste) is a rapidly growing global problem caused by shorter device lifecycles and rising consumption. India ranks third globally in e-waste generation, producing over 1.7 million tonnes in 2023-24, of which less than half is forma...

https://arxiv.org/abs/2510.08888

## MLLM as a UI Judge: Benchmarking Multimodal LLMs for Predicting Human Perception of User Interfaces

Reuben A. Luera, Ryan Rossi, Franck Dernoncourt, Samyadeep Basu, Sungchul Kim, Subhojyoti

Mukherjee, Puneet Mathur, Ruiyi Zhang, Jihyung Kil, Nedim Lipka, Seunghyun Yoon, Jiuxiang Gu, Zichao Wang, Cindy Xiong Bearfield, Branislav Kveton

1 148 ARXIV CS HC

**Summary:** arXiv:2510.08783v1 Announce Type: new Abstract: In an ideal design pipeline, user interface (UI) design is intertwined with user research to validate decisions, yet studies are often resource-constrained during early exploration. Recent advances in multimodal large language models (MLLMs) offer a p...

## **Understanding and Predicting Temporal Visual Attention Influenced by Dynamic Highlights in Monitoring Task**

Zekun Wu, Anna Maria

1 151 words

ARXIV CS HC

Summary: arXiv:2510.08777v1 Announce Type: new Abstract: Monitoring interfaces are crucial for dynamic, highstakes tasks where effective user attention is essential. Visual highlights can guide attention effectively but may also introduce unintended disruptions. To investigate this, we examined how visual h...

https://arxiv.org/abs/2510.08777

## Spike-frequency and h-current based adaptation are dynamically equivalent in a Wilson-Cowan field model

Ronja Str\"omsd\"orfer, Klaus Obermayer

1 272 min words

**ARXIV QBIO NC** 

Summary: arXiv:2510.08436v2 Announce Type: replace-cross Abstract: During slow-wave sleep, the brain produces traveling waves of slow oscillations (SOs; \$\leq 2\$ Hz), characterized by the propagation of alternating high- and low-activity states. The question of internal mechanisms that modulate traveling wa...

## Confidence-weighted integration of human and machine judgments for superior decision-making

Felipe Y\'a\~nez, Xiaoliang Luo, Omar Valerio Minero, Bradley C. Love

1 2025-10-13 min

154 words

ARXIV QBIO NC

Summary: arXiv:2408.08083v3 Announce Type: replace-cross Abstract: Large language models (LLMs) can surpass humans in certain forecasting tasks. What role does this leave for humans in the overall decision process? One possibility is that humans, despite performing worse than LLMs, can still add value when ...

https://arxiv.org/abs/2408.08083

## **Brain2Text Decoding Model Reveals the Neural Mechanisms** of Visual Semantic Processing







**ARXIV QBIO NC** 

**Summary:** arXiv:2503.22697v2 Announce Type: replace Abstract: Decoding sensory experiences from neural activity to reconstruct human-perceived visual stimuli and semantic content remains a challenge in neuroscience and artificial intelligence. Despite notable progress in current brain decoding models, a crit...

Read full article:

## **Adaptive Decoding via Hierarchical Neural Information Gradients in Mouse Visual Tasks**

Jingyi Feng, Xiang Feng

1 240 min words

ARXIV QBIO NC

Summary: arXiv:2510.09451v1 Announce Type: new Abstract: Understanding the encoding and decoding mechanisms of dynamic neural responses to different visual stimuli is an important topic in exploring how the brain represents visual information. Currently, hierarchically deep neural networks (DNNs) have playe...

https://arxiv.org/abs/2510.09451

## **Estimating Brain Activity with High Spatial and Temporal** Resolution using a Naturalistic MEG-fMRI Encoding Model

Beige Jerry Jin, Leila

1 234 min words

ARXIV QBIO NC

**Summary:** arXiv:2510.09415v1 Announce Type: new Abstract: Current non-invasive neuroimaging techniques trade off between spatial resolution and temporal resolution. While magnetoencephalography (MEG) can capture rapid neural dynamics and functional magnetic resonance imaging (fMRI) can spatially localize bra...

## Neural correlates of perceptual consciousness from within: a narrative review of human intracranial research

Francois Stockart, Alexis Robin, Hal Blumenfeld, Milan Brazdil, Philippe Kahane, Liad Mudrik, Jasmine Thum, Michael Pereira, Nathan Faivre



**Summary:** arXiv:2510.08736v1 Announce Type: new Abstract: Despite many years of research, the quest to identify neural correlates of perceptual consciousness (NCC) remains unresolved. One major obstacle lies in methodological limitations: most studies rely on non-invasive neural measures with limited spatial...



https://arxiv.org/abs/2510.08736

## Exploring phantom phenomena following brachial plexus block in intact limbs

1 19 BRAIN RESEARCH

**Summary:** Publication date: 15 November 2025<b>Source:</b> Brain Research, Volume 1867Author(s): Emily Pettersen, Giacomo Valle, Paolo Sassu, Carina Reinholdt, Max Ortiz-Catalan

#### 

https://www.sciencedirect.com/science/article/pii/S0006899325005189?dgcid=rss\_sd\_all

Resting EEG partial coherence demonstrates increased <math xmlns:mml="http://www.w3.org/1998/Math/MathML" altimg="si34.svg" class="math"><mrow><mrow><mi mathvariant="bold-italic">y</mi></mrow></mrow></math> range central functional connectivity in amnestic mild cognitive impairment





BRAIN RESEARCH

**Summary:** Publication date: 15 November 2025<b>Source:</b> Brain Research, Volume 1867Author(s): Ioannis Vlachos, Christos Moschovos, Loukia Apostolakopoulou, Kyriaki Karasavvidou, Eva Ntanasi, Eirini Mamalaki, Dimitris Kugiumtzis, Vasilios K. Kimiskidis, Nikolaos Scarmeas, Andreas Kyrozis



https://www.sciencedirect.com/science/article/pii/S0006899325005360?dgcid=rss\_sd\_all

# LncRNA HOXA-AS3 drives glioma progression through miR-542-5p-Mediated regulation of HOXA1 and WNT5A signaling

1 min



BRAIN RESEARCH

**Summary:** Publication date: 15 November 2025<b>Source:</b> Brain Research, Volume 1867Author(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

## Photobiomodulation in stroke prevention and treatment: neuroprotective mechanisms and therapeutic challenges

1 19 words

BRAIN RESEARCH

**Summary:** Publication date: 1 December 2025<b>Source:</b> Brain Research, Volume 1868Author(s): Yuecheng Li, Lei Zhang, Jiaqiang Lin, Luodan Yang, Rui Duan

**Read full article:** 

https://www.sciencedirect.com/science/article/pii/S000689932500544X?dgcid=rss sd all

## **LRRK2 Kinase Mediates Increased GCase Activity in** Microglia in Response to Proinflammatory Stimuli

MacDougall, E. J., Chen, C. X.- Q., Deneault, E., You, Z., Abdian, N., Durcan, T. M., Senkevich, K., Gan-Or, Z., Fon, E. A.





BIORXIV NEUROSCIENCE

**Summary:** Variants in the LRRK2 and GBA1 genes are among the most common risk factors associated with Parkinson's disease (PD). Both patients carrying PD-associated variants in GBA1, encoding lysosomal enzyme glucocerebrosidase (GCase), and a subset of non-carrier patients have been shown to have reduced GCas...

https://www.biorxiv.org/content/10.1101/2025.10.10.681687v1?rss=1

## **Editorial: Advancements in smart diagnostics for** understanding neurological behaviors and biosensing applications







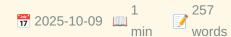
FRONTIERS COMPUTATIONAL NEUROSCIENCE



https://www.frontiersin.org/articles/10.3389/fncom.2025.1693327

## From adolescence to old age: how sensory precision shapes body ownership during physiological aging









FRONTIERS HUMAN NEUROSCIENCE

**Summary:** Body ownership relies on the integration of multisensory signals coming from the environment and the body itself. Considering the substantial neurophysiological and sensory modifications occurring across the lifespan, this study aims to quantitatively evaluate age-related changes in hand ownership a...



https://www.frontiersin.org/articles/10.3389/fnhum.2025.1663505

### Variable admittance control with sEMG-based support for wearable wrist exoskeleton

Nicole 1 262
Wenderoth min words

FRONTIERS NEUROROBOTICS

**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...

https://www.frontiersin.org/articles/10.3389/fnbot.2025.1562675

## **Network topological reorganization mechanisms of primary** visual cortex under multimodal stimulation

Ming 1 2227

FRONTIERS NEUROSCIENCE

Summary: IntroductionThe functional connectivity topology of the primary visual cortex (V1) shapes sensory processing and cross-modal integration, yet how different sensory modalities reorganize V1 network architecture remains unclear. We hypothesized that multimodal input drives a shift from hub-centric, mo...

https://www.frontiersin.org/articles/10.3389/fnins.2025.1678035

### Helical neural implants for intracerebral drug delivery

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

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

1 280 min 2025-09-28 min 280

**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...

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

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









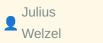
OOSTENVELD ROBERT

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...

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



1 72 2024-07-02 min words OOSTENVELD ROBERT

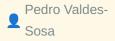
Summary: We present an extension to the Brain Imaging Data Structure (BIDS) for motion data. Motion data is frequently recorded alongside human brain imaging and electrophysiological data. The goal of Motion-BIDS is to make motion data interoperable across different laboratories and with other data modalitie...

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https://pubmed.ncbi.nlm.nih.gov/38956071/?

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







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

1 65 min 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 1 82 min 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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https://pubmed.ncbi.nlm.nih.gov/39308505/?

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

Fanny Quandt

1 65 min 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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https://pubmed.ncbi.nlm.nih.gov/39786979/?

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



1 70 min 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: <em>Increasing access to data while retaining scientific utility</em>

Lyuba
Zehl

Zehl

Zo25-06-26 min

Zostenveld 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/?

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

1 74 min 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, ...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/40800958/?

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

Robert 1 69
Oostenveld min words

OOSTENVELD ROBERT

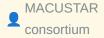
Summary: Recent technological developments have brought optically pumped magnetometers (OPMs) within reach of the larger neuroscientific community. The current state-of-the-art consists of whole-head systems that measure the magnetic field at >100 locations. OPM sensors can be constructed to measure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

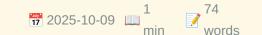
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## Patient-reported vision impairment in low luminance relates to visual function in age-related macular degeneration: A **MACUSTAR** study report









Summary: Early stages of age-related macular degeneration (AMD) can lead to a number of visual function deficits, but the patient relevance of these deficits is largely unknown. We therefore investigated how bilateral visual function domains affected by age-related macular degeneration (AMD) are associated w...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41068150/?

## Multi-interactive feature embedding learning for medical image segmentation



Yue 1 66

LOW VISION

Summary: Medical image segmentation task can provide the lesion object semantic information, but ignores edge texture details from the lesion region. Conversely, the medical image reconstruction task furnishes the object detailed information to facilitate the semantic segmentation through self-supervised lea...

#### 

https://pubmed.ncbi.nlm.nih.gov/41070074/?

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## Acute intraocular pressure changes during isometric exercise in glaucoma patients: the influence of exercise and intensity









LOW VISION

Summary: CONCLUSION: These findings suggest that while isometric exercises can elevate IOP temporarily, they may still be incorporated into training regimens for POAG patients if intensity is carefully managed. Careful monitoring of IOP is essential to avoid exacerbating glaucoma conditions during isometric ...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41071217/?

## Automated detection of pyogenic liver abscess and diagnosis of Klebsiella pneumoniae infection based on CECT images with deep learning: A multicenter study



Yi 1 38 Wang min words



Summary: CONCLUSIONS: The PLADA system provides an accurate, non-invasive method for KPLA diagnosis through a clinically interpretable two-stage AI framework. While limited by a retrospective, single-country dataset, this approach shows particular promise for early detection of KPLA in resource-limited settin...

#### **⊗** Read full article:

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## Ocular Hypertension and Glaucoma After Pars Plana **Vitrectomy: A Systematic Review and Meta-analysis**



1 43 words





LOW VISION

Summary: CONCLUSIONS: PPV is associated with clinically meaningful risk of OHT and glaucoma, especially in pseudophakic eyes. Despite limitations from nonrandomized data and heterogeneity, these findings highlight lens status as a key modifier of post-PPV risk and support tailored surgical planning and posto...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41072737/?

## Computer vision-based laser communication system for robust optical beam tracking and alignment



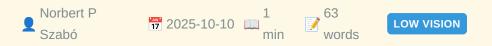
**Summary:** Free-space optical (FSO) communication is a promising technology for high-speed data transmission, but its effectiveness is highly dependent on precise beam alignment. In this work, we present a computer vision-assisted tracking system designed to maintain robust optical alignment in real time. By c...

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# Integrated petrophysical and seal characterization of the heterogeneous jurassic plover formation for CO<sub>2</sub> storage assessment in Northwest Australia



**Summary:** Geological storage of carbon dioxide is critical to mitigate emissions; however, subsurface heterogeneity poses a major challenge. This study investigates the Jurassic Plover Formation in the Browse Basin, Northwest Australia, a region underexplored for carbon storage potential. An integrated petrop...

#### Read full article:

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## The Okanagan charter in action: mapping health promotion strategies in Italian state universities in 2025







LOW VISION

Summary: CONCLUSIONS: Italian universities showed a growing but uneven commitment to health promotion. Despite frequent references to wellbeing, its integration remains partial and sectoral. This study identified key areas for improvement, such as participation, and highlighted a selection of good practices....

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## **Quantifying Effects Of Lifestyle Changes On Progression To Advanced Age-Related Macular Degeneration In High Genetic Risk Individuals**







LOW VISION

Summary: CONCLUSION: Unhealthy behaviors increased incidence of AAMD by 3 to 5fold among a highly genetically susceptible population, and 56-60% of AAMD incidence was attributed to modifiable factors: smoking, high BMI, high caloric intake and low intake of foods rich in lutein-zeaxanthin and omega-3 fatty ...

#### **Read full article:**

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## Artificial intelligence in the non-clinical laboratory: enhancing good laboratory and documentation practices

Firman

1 65 min words

Summary: Non-clinical laboratories are under increasing regulatory pressure from agencies such as the FDA, EMA, and MHRA to ensure data integrity, traceability, and compliance with Good Laboratory Practice (GLP) and Good Documentation Practice (GDP). While Artificial Intelligence (AI) has been widely explore...

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



1 70 min 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...

#### Read full article:

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

Hiroyuki
Kajimoto

75 TACTILE ACUITY words

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 1 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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https://pubmed.ncbi.nlm.nih.gov/40577301/?

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

Alex R

Bowers

1

2025-07-02

min

80

words

TACTILE ACUITY

Summary: Vision impairment may delay responses to hazards when driving. In a proof-ofconcept 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



1 64 min 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...

#### Read full article:

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

Eric 1 2025-08-24 min 22 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



**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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https://pubmed.ncbi.nlm.nih.gov/40924900/?

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

Sviatoslav N Bagriantsev

1 2025-09-13 min 58 TACTILE ACUITY words

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

Greenspon

1 86 min 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...

#### 

https://pubmed.ncbi.nlm.nih.gov/40964349/?

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

Runar 1 65 Words Words

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



**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...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/40854103/?

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



Million 1 46
Phiri 2025-08-26 min words

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...

#### **⊗** Read full article:

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### **Explosion-powered eversible tactile displays**



1 64 min 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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https://pubmed.ncbi.nlm.nih.gov/40864730/?

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



1 57 min words

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 1 64
Zhang min 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 ...

#### 

https://pubmed.ncbi.nlm.nih.gov/40871941/?

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



**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



**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





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 rightsbased 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









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:

https://pubmed.ncbi.nlm.nih.gov/41013315/?

# **Development and Assessment of a Novel Audiosensory** Performance Method for Improving the Oral Health of Visually **Impaired Children**







**Summary:** This study evaluated the effectiveness of an audiosensory performance method in enhancing oral health knowledge and status among visually impaired children aged 6-12 years in the National Capital Region (NCR), Delhi. An interventional study design was used, involving 251 participants equally divided...

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# Reply to Simani et al. Home-Based tDCS: Safety **Considerations and Technical Monitoring**









TDCS TACS TRNS

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41067686/?

# Comparative chloroplast genomics of Erigeron (Asteroideae, Asteraceae)

Xiaoxuan
Tian

Tia

Summary: The genus Erigeron L. (Astereae, Asteroideae, Asteraceae), commonly known as fleabanes, comprises approximately 457 species with a near-cosmopolitan distribution. However, taxonomic discrepancies persist within the genus. In this study, the complete chloroplast (cp.) genomes of 16 Erigeron species w...

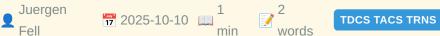
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# Can transcranial direct current stimulation aimed at reducing mind wandering alleviate depression?









#### 

https://pubmed.ncbi.nlm.nih.gov/41069944/?

# Transcranial Direct Current Stimulation as a Therapeutic **Approach for Anxiety and Related Markers: Comprehensive Systematic Review**

Rosa Maria Martins de

1 50 TDCS TACS TRNS words

Summary: CONCLUSIONS: The review highlights a lack of standardized protocols for using tDCS in treating anxiety. The methodological quality of most studies was critically low, per PRISMA guidelines. There was considerable variation in methodological approaches across the studies, indicating a need for standa...

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# The role of the medial prefrontal cortex in risk and time preferences: A tDCS study

Fan 1 70 Li 2025-10-10 min words

TDCS TACS TRNS

**Summary:** Risk and time preferences are fundamental determinants of economic decision making. Although medial prefrontal cortex (mPFC) activity has been associated with valuation across these domains, causal evidence that focal mPFC perturbation alters both risky and intertemporal choices remains limited. In ...

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# Cerebellar transcranial direct current stimulation combined with virtual reality training for the balance of older adults: study protocol for a randomized controlled trial







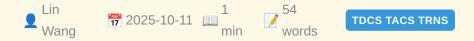
TDCS TACS TRNS

Summary: BACKGROUND: Falls are a major public safety issue, and improving the posture control ability of elderly people is highly important for preventing falls. Transcranial direct current stimulation (tDCS) and virtual reality-based balance training (VRBT) have been proven to be effective in improving post...

#### 

https://pubmed.ncbi.nlm.nih.gov/41074127/?

Effects of transcranial direct current stimulation on foot sensorimotor function and postural control in healthy young adults: A systematic review and meta-analysis based on randomized controlled trials



**Summary:** CONCLUSION: In conclusion, the current evidence suggested that tDCS may enhance ankle joint proprioception in healthy young adults, while no significant improvements were observed in foot muscle strength or static and dynamic postural control. Further research is warranted to determine the optimal s...

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# "Shadow government": how transcription factors regulate plant cell wall formation

Natalya
Syrchina

1 2025-10-11 min 66 TDCS TACS TRNS

Summary: The plant cell wall is a dynamic, structurally complex supramolecular compartment essential for the development, defense, and adaptation of plants to their environment. While the biosynthesis and transcriptional regulation of secondary cell walls (SCWs) have been extensively studied and are relative...

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# Lcn2 from neutrophil extracellular traps induces astrogliosis and post-stroke emotional disorders

Zhengrun

1 63 min words

**TDCS TACS TRNS** 

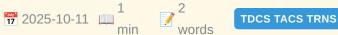
**Summary:** Patients with an ischemic stroke are often predisposed to emotional disorders. However, the mechanisms underlying post-stroke emotional disorders (PSEDs) remain unclear. Recent research highlights the role of neuroinflammation, driven primarily by infiltration of circulating immune cells within the ...

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# Response to Vogelmann et al: Contextualizing Home-Based tDCS Safety: The Remotely Supervised Model







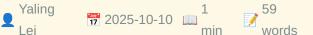
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# **Exploring the neural mechanisms of electroacupuncture for** cognitive impairment in depression using functional nearinfrared spectroscopy: a randomized controlled trial











Summary: CONCLUSION: Compared with pharmacotherapy alone, the combination of pharmacotherapy with electroacupuncture improved cognitive symptoms, mood, and executive function more effectively in patients with depression over a short period. In addition, this combination was associated with enhanced cortical ...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41069950/?

# Task-specific cortical mechanisms of taVNS-paired taskoriented training for post-stroke upper extremity dysfunction under cognitive load: an fNIRS study









Summary: CONCLUSION: taVNS paired with TOT enhances autonomic homeostasis, increases corticospinal pathway excitability, activates cognition-motor related brain regions, and modulates functional connectivity networks through multi-pathway neuroregulatory mechanisms. This promotes the formation of task-specif...

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# Multimodal MBC-ATT: cross-modality attentional fusion of **EEG-fNIRS** for cognitive state decoding



1 63 min words







Summary: With the rapid development of brain-computer interface (BCI) technology, the effective integration of multimodal biological signals to improve classification accuracy has become a research hotspot. However, existing methods often fail to fully exploit crossmodality correlations in complex cognitive...

#### Read full article:

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Prefrontal cortex activity during virtual obstacle avoidance and distracted walking: A methodological proof of concept using augmented reality and functional near-infrared spectroscopy



**Summary:** CONCLUSIONS: This combination of technologies elicited task-dependent modulation in PFC activity and gait behaviours in healthy adults, confirming the efficacy of AR-projected obstacles in a cognitive-motor dual-task paradigm. Based on these outcomes, it is likely that this experimental approach wil...

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https://pubmed.ncbi.nlm.nih.gov/41071803/?

Effect of mahjong, a Chinese tiled-based game, combined with upper limb robot training on upper limb function and rehabilitation participation in Chinese stroke patients: a clinical trial protocol







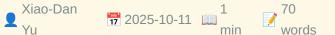


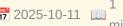
Summary: INTRODUCTION: Stroke is the second leading cause of death and disability creating a huge economic burden annually. Robot-assisted training (RT) is a promising therapy in stroke rehabilitation, but for the elderly, traditional 'reaching objects'" tasks do not seem to create sufficient motivation, an ...

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https://pubmed.ncbi.nlm.nih.gov/41073118/?

# **Effect of Intelligence Quotient Discrepancy on Attention and Executive Function in Children with Attention Deficit Hyperactivity Disorder: An fNIRS Study**









Summary: Intelligence quotient discrepancy (IQD) is associated with neurodevelopmental disorders, but its impact on attention and executive function (EF) deficits in children with attention deficit hyperactivity disorder (ADHD) is unknown. This study aimed to examine the effect of IQD by functional near-infra...

#### 

https://pubmed.ncbi.nlm.nih.gov/41076036/?

# Developmental changes in phonological awareness in Chinese-English bilingual children: An fNIRS longitudinal study



Tai-Li
Chou
Tai-Li
To
words



Summary: Learning to read triggers a cascade of changes in children's minds and brains, changes that lead to the formation of the "reading brain". Importantly, the developmental trajectory of these changes differs across languages. The development of phonological literacy skills comes first for learners of a...

#### **⊗** Read full article:

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# Sensitivity Analysis of the Balloon Model Parameters in **Functional Near-Infrared Spectroscopy Simulation**









Summary: CONCLUSIONS: The fNIRS hemodynamic response is highly sensitive to the Balloon model's  $\alpha$  and  $\tau$  parameters. These findings highlight the importance of accounting for physiological variability in fNIRS analysis and provide a robust framework for generating synthetic data to test signal processing algo...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41076093/?

# Machine learning assessment of cognitive reserve using functional near-infrared spectroscopy in older adults with cognitive frailty



**Summary:** Cognitive reserve mitigates aging-related cognitive decline and frailty, yet current assessments lack neurobiological specificity. We aimed to develop a noninvasive, functional near infrared spectroscopy (fNIRS)-based machine learning model to classify cognitive reserve levels in older adults with c...

#### **⊗** Read full article:

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# Exploring age and hemispheric differences in cortical plasticity after iTBS using fNIRS



**Summary:** Non-invasive brain stimulation applied to the prefrontal cortex (PFC) has been shown to improve cognitive outcomes in older adults with cognitive impairments (Miller et al., 2023). However, the differential impact of left versus right dorsolateral prefrontal cortex (DLPFC) stimulation on prefrontal ...

#### Read full article:

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### Does increasing canopy liana density decrease the tropical forest carbon sink?

David M
DeFilippis

DeFilippis

David M
To 2025-10-09
To words

BRAIN COMPUTER INTERFACE

Summary: The ongoing decline in the American tropical forest carbon sink has serious ramifications for atmospheric carbon levels and global climate change. Increasing liana abundance may explain the decaying carbon sink because lianas reduce canopy tree growth and survival, which limits forest carbon storage...

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# Correction: Filter bank common spatial pattern and envelopebased features in multimodal EEG-fTCD brain-computer interfaces

PLOS One Staff 2025-10-09 min 6 BRAIN COMPUTER INTERFACE

Summary: [This corrects the article DOI: 10.1371/journal.pone.0311075.].

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# Multimodal MBC-ATT: cross-modality attentional fusion of **EEG-fNIRS** for cognitive state decoding

Peng 1 63
Wusp min words

BRAIN COMPUTER INTERFACE

Summary: With the rapid development of brain-computer interface (BCI) technology, the effective integration of multimodal biological signals to improve classification accuracy has become a research hotspot. However, existing methods often fail to fully exploit crossmodality correlations in complex cognitive...

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# Three-dimensional microsurgical anatomy of the basal aspect of the cerebrum: a fiber dissection study

1 29 min 29 words

BRAIN COMPUTER INTERFACE

**Summary:** CONCLUSIONS: The 3D microsurgical anatomy of the basal cerebrum provides valuable insights for planning precise and safe surgical approaches and offers anatomical evidence for further studies on brain function.

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# A multi-level teacher assistant-based knowledge distillation framework with dynamic feedback for motor imagery EEG decoding



**Summary:** Deep learning has shown promise in motor imagery-based electroencephalogram (MI-EEG) decoding, a critical task in non-invasive brain-computer interfaces (BCIs). In response to the computational complexity of deep learning models to be deployed in practical BCI applications, knowledge distillation (K...

#### **Read full article:**

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+e462414

# **EEG-CLIP: A transformer-based framework for EEG-guided** image generation

Daoqiang
Zhang

Daoqiang
Tir 2025-10-10

Tir 2025-10-10

Tir 2025-10-10

Tir 2025-10-10

Tir 2025-10-10

Tir 2025-10-10

**Summary:** Decoding visual perception from neural signals represents a fundamental step toward advanced brain-computer interfaces (BCIs), where functional magnetic resonance imaging (fMRI) has shown promising results despite practical constraints in deployment and costs. Electroencephalography (EEG), with its ...

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## Novel analysis method to determine the neural activation function of the inner hair cell

1 79 min words

BRAIN COMPUTER INTERFACE

Summary: Sensorineural hearing loss (SNH) is one of the most common forms of hearing loss. A special form of SNH is hidden hearing loss (HHL) with subjective normal hearing. Current research results indicate that these patients demonstrate a reduced wave I in the averaged signal of brainstem audiometry (ABR)...

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# Retraction notice to "Decoding thoughts, encoding ethics: A narrative review of the BCI-AI revolution" [Brain Res. 1850 (2025) 149423]







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# **Abnormal Brain Connectivity Patterns in Children with Global Developmental Delay Accompanied by Cognitive Impairment:** A Resting-State EEG Study







BRAIN COMPUTER INTERFACE

Summary: CONCLUSIONS: Children with GDD exhibit abnormal patterns of brain functional connectivity, characterized by global hypo-connectivity and local hyperconnectivity. Specific network metrics under these abnormal patterns are significantly correlated with cognitive impairment in GDD. This study also hig...

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# Sensitivity Analysis of the Balloon Model Parameters in **Functional Near-Infrared Spectroscopy Simulation**



1 2025-10-11 min words BRAIN COMPUTER INTERFACE

Summary: CONCLUSIONS: The fNIRS hemodynamic response is highly sensitive to the Balloon model's  $\alpha$  and  $\tau$  parameters. These findings highlight the importance of accounting for physiological variability in fNIRS analysis and provide a robust framework for generating synthetic data to test signal processing algo...

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# **Tauri binding for Python through Pyo3**

1 2025-10-08 min words HACKER NEWS



Summary: <a href="https://news.ycombinator.com/item?id=45512962">Comments</a>

https://github.com/pytauri/pytauri

# **Evaluation on Human Perception of Various Vibrotactile Encoding Methods Through a High Density Haptic Feedback** Interface

1 197 min 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**

1 146 min 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

# Single-dose psilocybin rapidly and sustainably relieves allodynia and anxiodepressive-like behaviors in mouse models of chronic pain







Summary: Nature Neuroscience, Published online: 02 October 2025; <a href="https://"><a href="https://"></a> www.nature.com/articles/s41593-025-02068-0">doi:10.1038/s41593-025-02068-0</a></ p>Hammo et al. show that a single dose of psilocybin rapidly and sustainably relieves both chronic pain and anxiodepressive-like behaviors in mi...



https://www.nature.com/articles/s41593-025-02068-0

# A multilayered gap junction network is essential for social decision-making

Airi NakayamaHiroo KuroyanagiHironori J. MatsuyamaIkue MoriNaoki HisamotoShunji

NakanoaDepartment of Biological Science, Division of Natural Science, Graduate School of Science, Nagoya University, Nagoya 464-8602, JapanbNeuroscience Institute, Division of Natural Science, Graduate School of Science, Nagoya University, Nagoya 464-8602, Japan







PNAS NEUROSCIENCE

Summary: Proceedings of the National Academy of Sciences, Volume 122, Issue 41, October 2025. <br/>
<br/>
SignificanceEarly social experiences strongly influence emotions and behaviors, but the underlying neural mechanisms are unclear. This study shows that early experience of crowding exerts lasting effects on fo...

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https://www.pnas.org/doi/abs/10.1073/pnas.2510579122?af=R

### Statistical physics of large-scale neural activity with loops

David P. CarcamoChristopher W. LynnaDepartment of Physics, Yale University, New Haven, CT

● 06511bQuantitative Biology Institute, Yale University, New Haven, CT 06511cWu Tsai Institute, Yale University, New Haven, CT 06510



**Summary:** Proceedings of the National Academy of Sciences, Volume 122, Issue 41, October 2025. <br/>
SignificanceExperimental advances provide recordings of neural activity at unprecedented scales. But to understand how this activity emerges from the correlations between neurons, we need models that can simul...

https://www.pnas.org/doi/abs/10.1073/pnas.2426926122?af=R

# Transpupillary in vivo two-photon imaging reveals enhanced surveillance of retinal microglia in diabetic mice

Noriyuki SotaniSentaro KusuharaRyuto NishishoHiroto KunoHidenori ShimaKoichiro HaruwakaYuka MoriMaya KishiTomoyuki FuruyashikiKenta KobayashiHiroaki WakeToru TakumiMakoto NakamuraYoshihisa TachibanaaDepartment of Physiology and Cell Biology, Kobe University Graduate School of Medicine, Kobe 650-0017, JapanbDivision of Ophthalmology, Department of Surgery, Kobe University Graduate School of Medicine, Kobe 650-0017, JapancCenter for Neuroimmunology and Glial Biology, Institute of Molecular Medicine, University of Texas Health Science Center, Houston, TX 77030dDivision of Pharmacology, Kobe University Graduate School of Medicine, Kobe 650-0017, JapaneSection of Viral Vector Development, National Institute for Physiological Sciences, Okazaki 444-8585, JapanfDepartment of Anatomy and Molecular Cell Biology, Nagoya University Graduate



School of Medicine, Nagoya 466-8550, Japan

**Summary:** Proceedings of the National Academy of Sciences, Volume 122, Issue 41, October 2025. <br/>
SignificanceNumerous studies have developed imaging techniques for visualizing diverse cell types in the retina. However, these techniques often face challenges such as low resolution and the need for technica...



https://www.pnas.org/doi/abs/10.1073/pnas.2426241122?af=R

# Beauty in the shadow of neurodegenerative disease: a narrative review on aesthetic experience, neural mechanisms, and therapeutic frontiers

Rocco Salvatore

1 199 min words

FRONTIERS HUMAN NEUROSCIENCE

**Summary:** Neuroaesthetics, an emerging field at the intersection of neuroscience, psychology, and the arts, offers new perspectives on the biological and cognitive mechanisms of aesthetic experience. This narrative review explores the convergence of neuroaesthetics and neurodegenerative disorders, focusing on...

Read full article:

https://www.frontiersin.org/articles/10.3389/fnhum.2025.1658617

# **Imitation-relaxation reinforcement learning for sparse** badminton strikes via dynamic trajectory generation



1 174 min words



FRONTIERS NEUROROBOTICS

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 ...

https://www.frontiersin.org/articles/10.3389/fnbot.2025.1649870

# RSA-TransUNet: a robust structure-adaptive TransUNet for enhanced road crack segmentation

Ruoli 1 234
Yang min words

FRONTIERS NEUROROBOTICS

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...

https://www.frontiersin.org/articles/10.3389/fnbot.2025.1633697

# Approaches for retraining sEMG classifiers for upper-limb prostheses

Benjamin 1 178
Metcalfe min words



FRONTIERS NEUROROBOTICS

Summary: IntroductionAbandonment 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...

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

# DWMamba: a structure-aware adaptive state space network for image quality improvement

FRONTIERS NEUROROBOTICS

Summary: Overcoming visual degradation in challenging imaging scenarios is essential for accurate scene understanding. Although deep learning methods have integrated various perceptual capabilities and achieved remarkable progress, their high computational cost limits practical deployment under resource-cons...

https://www.frontiersin.org/articles/10.3389/fnbot.2025.1676787

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

Maria Carla Piastra

1 64 min 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 .

1 72 2024-07-02 min words OOSTENVELD ROBERT

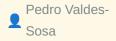
Summary: We present an extension to the Brain Imaging Data Structure (BIDS) for motion data. Motion data is frequently recorded alongside human brain imaging and electrophysiological data. The goal of Motion-BIDS is to make motion data interoperable across different laboratories and with other data modalitie...

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







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

1 65 min 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 1 82 min 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

1 65 min 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**



1 70 min 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: <em>Increasing access to data while retaining scientific utility</em>

Lyuba
Zehl

Zehl

Zo25-06-26 min

Zostenveld robert

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:

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

1 74 min 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 1 69
Oostenveld min 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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# Percutaneous endoscopic discectomy with lateral approach and dual-channel method for the treatment of highly free lumbar disc herniation



Jian-Bo 1 54
Wu min words



LOW VISION

Summary: CONCLUSION: For patients with highly free lumbar intervertebral disc protrusion, both of lateral approach dual-channel method and UBE endoscopic surgery are safe and effective. Endoscopic surgery with lateral approach and dual-channel method could be performed under local anesthesia, allowing for th...

#### Read full article:

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# Patient-reported vision impairment in low luminance relates to visual function in age-related macular degeneration: A MACUSTAR study report



**Summary:** Early stages of age-related macular degeneration (AMD) can lead to a number of visual function deficits, but the patient relevance of these deficits is largely unknown. We therefore investigated how bilateral visual function domains affected by age-related macular degeneration (AMD) are associated w...

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# Multi-interactive feature embedding learning for medical image segmentation



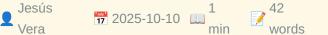
**Summary:** Medical image segmentation task can provide the lesion object semantic information, but ignores edge texture details from the lesion region. Conversely, the medical image reconstruction task furnishes the object detailed information to facilitate the semantic segmentation through self-supervised lea...

#### Read full article:

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# Acute intraocular pressure changes during isometric exercise in glaucoma patients: the influence of exercise and intensity







LOW VISION

Summary: CONCLUSION: These findings suggest that while isometric exercises can elevate IOP temporarily, they may still be incorporated into training regimens for POAG patients if intensity is carefully managed. Careful monitoring of IOP is essential to avoid exacerbating glaucoma conditions during isometric ...

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https://pubmed.ncbi.nlm.nih.gov/41071217/?

# Automated detection of pyogenic liver abscess and diagnosis of Klebsiella pneumoniae infection based on CECT images with deep learning: A multicenter study



**Summary:** CONCLUSIONS: The PLADA system provides an accurate, non-invasive method for KPLA diagnosis through a clinically interpretable two-stage AI framework. While limited by a retrospective, single-country dataset, this approach shows particular promise for early detection of KPLA in resource-limited settin...

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# Ocular Hypertension and Glaucoma After Pars Plana Vitrectomy: A Systematic Review and Meta-analysis



**Summary:** CONCLUSIONS: PPV is associated with clinically meaningful risk of OHT and glaucoma, especially in pseudophakic eyes. Despite limitations from nonrandomized data and heterogeneity, these findings highlight lens status as a key modifier of post-PPV risk and support tailored surgical planning and posto...

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# Computer vision-based laser communication system for robust optical beam tracking and alignment



**Summary:** Free-space optical (FSO) communication is a promising technology for high-speed data transmission, but its effectiveness is highly dependent on precise beam alignment. In this work, we present a computer vision-assisted tracking system designed to maintain robust optical alignment in real time. By c...

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# Integrated petrophysical and seal characterization of the heterogeneous jurassic plover formation for CO<sub>2</sub> storage assessment in Northwest Australia



**Summary:** Geological storage of carbon dioxide is critical to mitigate emissions; however, subsurface heterogeneity poses a major challenge. This study investigates the Jurassic Plover Formation in the Browse Basin, Northwest Australia, a region underexplored for carbon storage potential. An integrated petrop...

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# The Okanagan charter in action: mapping health promotion strategies in Italian state universities in 2025







LOW VISION

Summary: CONCLUSIONS: Italian universities showed a growing but uneven commitment to health promotion. Despite frequent references to wellbeing, its integration remains partial and sectoral. This study identified key areas for improvement, such as participation, and highlighted a selection of good practices....

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# **Quantifying Effects Of Lifestyle Changes On Progression To Advanced Age-Related Macular Degeneration In High Genetic Risk Individuals**







LOW VISION

Summary: CONCLUSION: Unhealthy behaviors increased incidence of AAMD by 3 to 5fold among a highly genetically susceptible population, and 56-60% of AAMD incidence was attributed to modifiable factors: smoking, high BMI, high caloric intake and low intake of foods rich in lutein-zeaxanthin and omega-3 fatty ...

#### **Read full article:**

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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

Thomas

Tactile Acuity

Thomas

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...

#### **⊗** Read full article:

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

Hiroyuki

1 75
min 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:

https://pubmed.ncbi.nlm.nih.gov/40526544/?

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

Leah R

Bent

1

2025-06-27

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

1

80

min

words

TACTILE ACUITY

Summary: Vision impairment may delay responses to hazards when driving. In a proof-ofconcept 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...

#### 

https://pubmed.ncbi.nlm.nih.gov/40601880/?

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







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...

#### **⊗** Read full article:

https://pubmed.ncbi.nlm.nih.gov/40746091/?

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









**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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https://pubmed.ncbi.nlm.nih.gov/40850311/?

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

Paula Anne Newman-Casev

1 74 TACTILE ACUITY words

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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https://pubmed.ncbi.nlm.nih.gov/40924900/?

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

Sviatoslav N Bagriantsev

1 2025-09-13 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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https://pubmed.ncbi.nlm.nih.gov/40945511/?

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

Charles M

Greenspon

1

86

words

TACTILE ACUITY

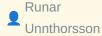
Summary: Touch plays a key role in our perception of our body and shapes our interactions with the world, from the objects we manipulate to the people we touch. While the tactile sensibility of the hand has been extensively characterized, much less is known about touch on other parts of the body. Despite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

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









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:

https://pubmed.ncbi.nlm.nih.gov/41007234/?

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







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









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...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/40855574/?

### **Explosion-powered eversible tactile displays**







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











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/?

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







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**









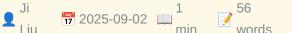
**Summary:** It has been argued in previous research that several competing pressures guide the directions of language evolution (economy vs. redundancy; arbitrariness vs. systematicity). For sign languages, however, the effects of competing pressures on their change of lexical systems remain largely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

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/40889233/?

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











**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











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 rightsbased approach-emphasizing inclusive fun...

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https://pubmed.ncbi.nlm.nih.gov/40937808/?

# 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



**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.

#### 

https://pubmed.ncbi.nlm.nih.gov/41013315/?

## **Development and Assessment of a Novel Audiosensory** Performance Method for Improving the Oral Health of Visually **Impaired Children**







**Summary:** This study evaluated the effectiveness of an audiosensory performance method in enhancing oral health knowledge and status among visually impaired children aged 6-12 years in the National Capital Region (NCR), Delhi. An interventional study design was used, involving 251 participants equally divided...

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## Reply to Simani et al. Home-Based tDCS: Safety **Considerations and Technical Monitoring**







TDCS TACS TRNS

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## Comparative chloroplast genomics of Erigeron (Asteroideae, Asteraceae)

Xiaoxuan
Tian

Tia

Summary: The genus Erigeron L. (Astereae, Asteroideae, Asteraceae), commonly known as fleabanes, comprises approximately 457 species with a near-cosmopolitan distribution. However, taxonomic discrepancies persist within the genus. In this study, the complete chloroplast (cp.) genomes of 16 Erigeron species w...

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## Can transcranial direct current stimulation aimed at reducing mind wandering alleviate depression?



1 2025-10-10 min words



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## Transcranial Direct Current Stimulation as a Therapeutic **Approach for Anxiety and Related Markers: Comprehensive Systematic Review**

Rosa Maria Martins de

1 50 TDCS TACS TRNS words

Summary: CONCLUSIONS: The review highlights a lack of standardized protocols for using tDCS in treating anxiety. The methodological quality of most studies was critically low, per PRISMA guidelines. There was considerable variation in methodological approaches across the studies, indicating a need for standa...

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## The role of the medial prefrontal cortex in risk and time preferences: A tDCS study



Fan 1 70 Li 2025-10-10 min words

TDCS TACS TRNS

**Summary:** Risk and time preferences are fundamental determinants of economic decision making. Although medial prefrontal cortex (mPFC) activity has been associated with valuation across these domains, causal evidence that focal mPFC perturbation alters both risky and intertemporal choices remains limited. In ...

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## Cerebellar transcranial direct current stimulation combined with virtual reality training for the balance of older adults: study protocol for a randomized controlled trial







TDCS TACS TRNS

Summary: BACKGROUND: Falls are a major public safety issue, and improving the posture control ability of elderly people is highly important for preventing falls. Transcranial direct current stimulation (tDCS) and virtual reality-based balance training (VRBT) have been proven to be effective in improving post...

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Effects of transcranial direct current stimulation on foot sensorimotor function and postural control in healthy young adults: A systematic review and meta-analysis based on randomized controlled trials



**Summary:** CONCLUSION: In conclusion, the current evidence suggested that tDCS may enhance ankle joint proprioception in healthy young adults, while no significant improvements were observed in foot muscle strength or static and dynamic postural control. Further research is warranted to determine the optimal s...

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## "Shadow government": how transcription factors regulate plant cell wall formation

Natalya
Syrchina

1 2025-10-11 min 66 TDCS TACS TRNS

Summary: The plant cell wall is a dynamic, structurally complex supramolecular compartment essential for the development, defense, and adaptation of plants to their environment. While the biosynthesis and transcriptional regulation of secondary cell walls (SCWs) have been extensively studied and are relative...

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## Lcn2 from neutrophil extracellular traps induces astrogliosis and post-stroke emotional disorders

Zhengrun

1 63 min words

**TDCS TACS TRNS** 

**Summary:** Patients with an ischemic stroke are often predisposed to emotional disorders. However, the mechanisms underlying post-stroke emotional disorders (PSEDs) remain unclear. Recent research highlights the role of neuroinflammation, driven primarily by infiltration of circulating immune cells within the ...

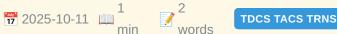
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## Response to Vogelmann et al: Contextualizing Home-Based tDCS Safety: The Remotely Supervised Model







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## Cerebral cortical activation and muscle performance during blood flow restriction training after ischemic stroke: A randomised functional near-infrared spectroscopy study









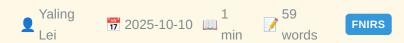


Summary: CONCLUSIONS AND IMPLICATIONS: By actively manipulating the M1 and PMC-SMA, LL-BFR and HL training yield comparable short-term improvements in central and peripheral performance after stroke. (Registry: Chinese Clinical Trial Registry; ChiCTR2400087378).

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41066487/?

# Exploring the neural mechanisms of electroacupuncture for cognitive impairment in depression using functional near-infrared spectroscopy: a randomized controlled trial



**Summary:** CONCLUSION: Compared with pharmacotherapy alone, the combination of pharmacotherapy with electroacupuncture improved cognitive symptoms, mood, and executive function more effectively in patients with depression over a short period. In addition, this combination was associated with enhanced cortical ...

#### 

https://pubmed.ncbi.nlm.nih.gov/41069950/?

## Task-specific cortical mechanisms of taVNS-paired taskoriented training for post-stroke upper extremity dysfunction under cognitive load: an fNIRS study









Summary: CONCLUSION: taVNS paired with TOT enhances autonomic homeostasis, increases corticospinal pathway excitability, activates cognition-motor related brain regions, and modulates functional connectivity networks through multi-pathway neuroregulatory mechanisms. This promotes the formation of task-specif...

#### **⊗** Read full article:

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## Multimodal MBC-ATT: cross-modality attentional fusion of **EEG-fNIRS** for cognitive state decoding









Summary: With the rapid development of brain-computer interface (BCI) technology, the effective integration of multimodal biological signals to improve classification accuracy has become a research hotspot. However, existing methods often fail to fully exploit crossmodality correlations in complex cognitive...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41070190/?

Prefrontal cortex activity during virtual obstacle avoidance and distracted walking: A methodological proof of concept using augmented reality and functional near-infrared spectroscopy



**Summary:** CONCLUSIONS: This combination of technologies elicited task-dependent modulation in PFC activity and gait behaviours in healthy adults, confirming the efficacy of AR-projected obstacles in a cognitive-motor dual-task paradigm. Based on these outcomes, it is likely that this experimental approach wil...

#### 

https://pubmed.ncbi.nlm.nih.gov/41071803/?

Effect of mahjong, a Chinese tiled-based game, combined with upper limb robot training on upper limb function and rehabilitation participation in Chinese stroke patients: a clinical trial protocol





**Summary:** INTRODUCTION: Stroke is the second leading cause of death and disability creating a huge economic burden annually. Robot-assisted training (RT) is a promising therapy in stroke rehabilitation, but for the elderly, traditional 'reaching objects'" tasks do not seem to create sufficient motivation, an ...

#### 

https://pubmed.ncbi.nlm.nih.gov/41073118/?

## **Effect of Intelligence Quotient Discrepancy on Attention and Executive Function in Children with Attention Deficit Hyperactivity Disorder: An fNIRS Study**









Summary: Intelligence quotient discrepancy (IQD) is associated with neurodevelopmental disorders, but its impact on attention and executive function (EF) deficits in children with attention deficit hyperactivity disorder (ADHD) is unknown. This study aimed to examine the effect of IQD by functional near-infra...

#### 

https://pubmed.ncbi.nlm.nih.gov/41076036/?

## Developmental changes in phonological awareness in Chinese-English bilingual children: an fNIRS longitudinal study



Tai-Li 1 70
Chou min words



Summary: Learning to read triggers a cascade of changes in children's minds and brains, changes that lead to the formation of the "reading brain". Importantly, the developmental trajectory of these changes differs across languages. The development of phonological literacy skills comes first for learners of a...

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## Sensitivity Analysis of the Balloon Model Parameters in **Functional Near-Infrared Spectroscopy Simulation**



1 43 min words



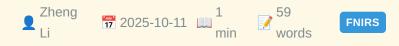
FNIRS

Summary: CONCLUSIONS: The fNIRS hemodynamic response is highly sensitive to the Balloon model's  $\alpha$  and  $\tau$  parameters. These findings highlight the importance of accounting for physiological variability in fNIRS analysis and provide a robust framework for generating synthetic data to test signal processing algo...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41076093/?

# Machine learning assessment of cognitive reserve using functional near-infrared spectroscopy in older adults with cognitive frailty



**Summary:** Cognitive reserve mitigates aging-related cognitive decline and frailty, yet current assessments lack neurobiological specificity. We aimed to develop a noninvasive, functional near infrared spectroscopy (fNIRS)-based machine learning model to classify cognitive reserve levels in older adults with c...

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## Does increasing canopy liana density decrease the tropical forest carbon sink?



**Summary:** The ongoing decline in the American tropical forest carbon sink has serious ramifications for atmospheric carbon levels and global climate change. Increasing liana abundance may explain the decaying carbon sink because lianas reduce canopy tree growth and survival, which limits forest carbon storage...

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## Correction: Filter bank common spatial pattern and envelopebased features in multimodal EEG-fTCD brain-computer interfaces







**Summary:** [This corrects the article DOI: 10.1371/journal.pone.0311075.].

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## Multimodal MBC-ATT: cross-modality attentional fusion of **EEG-fNIRS** for cognitive state decoding









Summary: With the rapid development of brain-computer interface (BCI) technology, the effective integration of multimodal biological signals to improve classification accuracy has become a research hotspot. However, existing methods often fail to fully exploit crossmodality correlations in complex cognitive...

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## Three-dimensional microsurgical anatomy of the basal aspect of the cerebrum: a fiber dissection study

Jinsong 1 29
Wu min words

BRAIN COMPUTER INTERFACE

Summary: CONCLUSIONS: The 3D microsurgical anatomy of the basal cerebrum provides valuable insights for planning precise and safe surgical approaches and offers anatomical evidence for further studies on brain function.

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## A multi-level teacher assistant-based knowledge distillation framework with dynamic feedback for motor imagery EEG decoding



1 2025-10-10 min 66 words

BRAIN COMPUTER INTERFACE

Summary: Deep learning has shown promise in motor imagery-based electroencephalogram (MI-EEG) decoding, a critical task in non-invasive brain-computer interfaces (BCIs). In response to the computational complexity of deep learning models to be deployed in practical BCI applications, knowledge distillation (K...

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## **EEG-CLIP:** A transformer-based framework for EEG-guided image generation

Daoqiang
Zhang

Daoqiang
Tir 2025-10-10

Tir 2025-10-10

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Tir 2025-10-10

**Summary:** Decoding visual perception from neural signals represents a fundamental step toward advanced brain-computer interfaces (BCIs), where functional magnetic resonance imaging (fMRI) has shown promising results despite practical constraints in deployment and costs. Electroencephalography (EEG), with its ...

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### Novel analysis method to determine the neural activation function of the inner hair cell



1 79 min words

BRAIN COMPUTER INTERFACE

Summary: Sensorineural hearing loss (SNH) is one of the most common forms of hearing loss. A special form of SNH is hidden hearing loss (HHL) with subjective normal hearing. Current research results indicate that these patients demonstrate a reduced wave I in the averaged signal of brainstem audiometry (ABR)...

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## Retraction notice to "Decoding thoughts, encoding ethics: A narrative review of the BCI-AI revolution" [Brain Res. 1850 (2025) 149423]





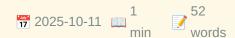


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## **Abnormal Brain Connectivity Patterns in Children with Global Developmental Delay Accompanied by Cognitive Impairment:** A Resting-State EEG Study







BRAIN COMPUTER INTERFACE

Summary: CONCLUSIONS: Children with GDD exhibit abnormal patterns of brain functional connectivity, characterized by global hypo-connectivity and local hyperconnectivity. Specific network metrics under these abnormal patterns are significantly correlated with cognitive impairment in GDD. This study also hig...

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## Sensitivity Analysis of the Balloon Model Parameters in **Functional Near-Infrared Spectroscopy Simulation**

Murad
Althobaiti

1 2025-10-11 min words

BRAIN COMPUTER INTERFACE

Summary: CONCLUSIONS: The fNIRS hemodynamic response is highly sensitive to the Balloon model's  $\alpha$  and  $\tau$  parameters. These findings highlight the importance of accounting for physiological variability in fNIRS analysis and provide a robust framework for generating synthetic data to test signal processing algo...

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## Cognitive performance fatigability, perceived fatigability, and trait fatigue in post-COVID-19 condition: A cross-sectional study.

1 270 min 270 words



NEUROPSYCHOLOGY

Summary: Objective: Earlier research on fatigue in post-COVID-19 condition (PCC) has mainly studied subjective fatigue, either over a prolonged period (trait fatigue) or in relation to a certain situation (state fatigue) in the form of perceived fatigability. Another aspect of state fatigue, cognitive perfor...

**⊗** Read full article:

http://doi.org/10.1037/neu0001020

## Embodied concepts in Parkinson's disease: Insights from fruits versus animals semantic fluency impairments.

1 2025-07-24 min 262 NEUROPSYCHOLOGY

**Summary:** Objective: Initial findings indicate that semantic memory retrieval of different categories, such as fruits and animals, is variably impacted in Parkinson's disease (PD). Importantly, theories of embodied cognition propose that these variances may stem from compromised motor processing in PD patient...

http://doi.org/10.1037/neu0001026

Using the Modified Taylor Complex Figure–Recognition Trial (MTCF-RT) to differentiate amnestic patients with Alzheimer's disease from patients with memory deficits due to Parkinson's disease or subcortical ischemic vascular dementia.

1 2025-08-25 min 257 words NEUROPSYCHOLOGY

**Summary:** Objective: The Modified Taylor Complex Figure–Recognition Trial (MTCF-RT) is a visual recognition memory measure that consists of a recognition trial to be administered after the copy and the delayed reproduction of the Modified Taylor Complex Figure Test. The aim of this study was to validate the M...

http://doi.org/10.1037/neu0001036

## Affliction class moderates the dementing impact of amyloidopathy.

1 188 NEUROPSYCHOLOGY words

**Summary:** Objective: The treatment of dementia is increasingly likely to focus on dementia-related biomarkers. Unfortunately, there is variability with regard to biomarker-related effects. This analysis tests an algorithm capable of identifying persons adversely impacted by any dementia-related biomarker in t...

http://doi.org/10.1037/neu0001021

## Semantic processing in subjective cognitive decline: An eyetracking study.

1 2025-09-11 min 205 words NEUROPSYCHOLOGY

**Summary:** Objectives: Alzheimer's disease progresses through several stages, starting with a preclinical phase characterized by subjective cognitive decline (SCD), where individuals express concerns about their memory despite normal cognitive test results. Recent research has indicated subtle semantic difficu...

Read full article:

http://doi.org/10.1037/neu0001022

### **Monthly Updates [Oct]**



**Summary:** <div class="info custom-block">INFO These update threads only contains major updates. If you're interested in seeing all minor changes you can follow our <a href="https://github.com/fmhy/FMHYedit/commits/main" rel="noreferrer" target="\_blank">Commits Page</a> on ...

https://fmhy.net/posts/oct-2025

## Those who have managed to get into IT in the last couple of years, please share your experiences!



**Summary:** <!-- SC\_OFF --><div class="md">I'm finishing my fourth year of university as a software engineer. Looking at companies' requirements, I realize it's easier to get into IT with your product than to go through a three- or even five-stage interview process for a meager salary.

**№** Read full article:

https://www.reddit.com/r/Python/comments/1o4hjl6/ those\_who\_have\_managed\_to\_get\_into\_it\_in\_the\_last/

#### Show HN: Aidlab - Health Data for Devs

1 2025-10-11 min words HACKER NEWS

Summary: <a href="https://news.ycombinator.com/item?id=45549392">Comments</a>

https://news.ycombinator.com/item?id=45549392

## **Countering Trusting Trust Through Diverse Double-Compiling** (DDC)

1 ibobev 7 2025-10-13 min words HACKER NEWS

**Summary:** Article URL: <a href="https://dwheeler.com/trusting-trust/">https://dwheeler.com/trusting-trust/</a> Comments URL: <a href="https://news.ycombinator.com/item?id=45564196">https://news.ycombinator.com/item?id=45564196">https://news.ycombinator.com/item?id=45564196</a> Points: 3 # Comments: 1

https://dwheeler.com/trusting-trust/

## VibTac: A High-Resolution High-Bandwidth Tactile Sensing Finger for Multi-Modal Perception in Robotic Manipulation

1 169 min 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...

http://ieeexplore.ieee.org/document/10965524

## **Age-Related Impact in Illusory Torque Cues Induced by Asymmetric Vibrations**



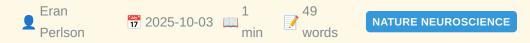
TRANSACTIONS HAPTICS

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

## Muscle-derived miR-126 regulates TDP-43 axonal local synthesis and NMJ integrity in ALS models



**Summary:** Nature Neuroscience, Published online: 03 October 2025; <a href="https://www.nature.com/articles/s41593-025-02062-6">doi:10.1038/s41593-025-02062-6</a>
p>Ionescu, Ankol et al. show that, in ALS mouse and iPSC models, TDP-43 aggregation at NMJs stems from aberrant axonal translation, normally rep...



https://www.nature.com/articles/s41593-025-02062-6

## 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



**Summary:** Proceedings of the National Academy of Sciences, Volume 122, Issue 40, October 2025. <br/>
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 neurona...

#### 

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 1 130 Danglot min 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. 254
Palanisamy min 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 1 207

FRONTIERS COMPUTATIONAL NEUROSCIENCE

**Summary:** IntroductionPredictive 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 mismatc...

https://www.frontiersin.org/articles/10.3389/fncom.2025.1551555

## Tuning into flavor: predicting coffee sensory attributes from **EEG** with boosted-tree regression models



1 155 min words



FRONTIERS HUMAN NEUROSCIENCE

Summary: Flavor, a multimodal perception based on taste, smell, and tactile cues, plays a significant role in consumer preferences and purchase intentions toward coffee. In this exploratory study, we assessed the potential of electroencephalography (EEG) and machine learning (ML) techniques to predict coffee...

https://www.frontiersin.org/articles/10.3389/fnhum.2025.1661214

## Correction: Association between neuroticism and physical activity: a systematic review and meta-analysis



in words

#### **Solution** Read full article:

https://www.frontiersin.org/articles/10.3389/fnhum.2025.1713272

# Remarkable therapeutic effects of methylphenidate in periodic limb movement disorder comorbid with excessive daytime sleepiness: a case report



**Summary:** BackgroundPeriodic limb movement disorder (PLMD) is a sleep-related movement disorder, which may be accompanied by a complaint of excessive daytime sleepiness (EDS). With this study, we reported a clinical therapy process up to 2.5 years follow-up, exploring the therapeutic effect of a series of med...

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https://www.frontiersin.org/articles/10.3389/fnins.2025.1659120

## Neural mechanism of HT7 electroacupuncture in myocardial ischemia: critical role of the paraventricular nucleus oxytocin system

Chao 281 2025-10-09 min words

FRONTIERS NEUROSCIENCE

Summary: ObjectiveElectroacupuncture (EA) at Shenmen (HT7) alleviates acute myocardial ischemia (AMI), but its central neuromodulatory mechanisms remain insufficiently defined. This study investigated whether oxytocinergic (OT) neurons in the hypothalamic paraventricular nucleus (PVN) mediate the cardioprote...

**⊗** Read full article:

https://www.frontiersin.org/articles/10.3389/fnins.2025.1678938

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

Maria Carla

1 64

Piastra

min words



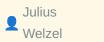
OOSTENVELD ROBERT

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



1 72 2024-07-02 min words OOSTENVELD ROBERT

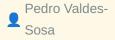
Summary: We present an extension to the Brain Imaging Data Structure (BIDS) for motion data. Motion data is frequently recorded alongside human brain imaging and electrophysiological data. The goal of Motion-BIDS is to make motion data interoperable across different laboratories and with other data modalitie...

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









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

1 65 min 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 1 82 min 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

1 65 min 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**



1 70 min 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: <em>Increasing access to data while retaining scientific utility</em>



Lyuba
Zehl

Zehl

Zo25-06-26 min

Zostenveld 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:

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



1 74 min 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 1 69
Oostenveld min 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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## Percutaneous endoscopic discectomy with lateral approach and dual-channel method for the treatment of highly free lumbar disc herniation



Jian-Bo 1 54
Wu min words



LOW VISION

Summary: CONCLUSION: For patients with highly free lumbar intervertebral disc protrusion, both of lateral approach dual-channel method and UBE endoscopic surgery are safe and effective. Endoscopic surgery with lateral approach and dual-channel method could be performed under local anesthesia, allowing for th...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41067900/?

## Patient-reported vision impairment in low luminance relates to visual function in age-related macular degeneration: A MACUSTAR study report



**Summary:** Early stages of age-related macular degeneration (AMD) can lead to a number of visual function deficits, but the patient relevance of these deficits is largely unknown. We therefore investigated how bilateral visual function domains affected by age-related macular degeneration (AMD) are associated w...

#### **⊗** Read full article:

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## Multi-interactive feature embedding learning for medical image segmentation



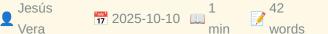
**Summary:** Medical image segmentation task can provide the lesion object semantic information, but ignores edge texture details from the lesion region. Conversely, the medical image reconstruction task furnishes the object detailed information to facilitate the semantic segmentation through self-supervised lea...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41070074/?

## Acute intraocular pressure changes during isometric exercise in glaucoma patients: the influence of exercise and intensity







LOW VISION

Summary: CONCLUSION: These findings suggest that while isometric exercises can elevate IOP temporarily, they may still be incorporated into training regimens for POAG patients if intensity is carefully managed. Careful monitoring of IOP is essential to avoid exacerbating glaucoma conditions during isometric ...

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https://pubmed.ncbi.nlm.nih.gov/41071217/?

## Automated detection of pyogenic liver abscess and diagnosis of Klebsiella pneumoniae infection based on CECT images with deep learning: A multicenter study



Yi 1 38 Wang min words

Summary: CONCLUSIONS: The PLADA system provides an accurate, non-invasive method for KPLA diagnosis through a clinically interpretable two-stage AI framework. While limited by a retrospective, single-country dataset, this approach shows particular promise for early detection of KPLA in resource-limited settin...

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## Ocular Hypertension and Glaucoma After Pars Plana **Vitrectomy: A Systematic Review and Meta-analysis**



1 43 words

LOW VISION

Summary: CONCLUSIONS: PPV is associated with clinically meaningful risk of OHT and glaucoma, especially in pseudophakic eyes. Despite limitations from nonrandomized data and heterogeneity, these findings highlight lens status as a key modifier of post-PPV risk and support tailored surgical planning and posto...

#### Read full article:

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## Computer vision-based laser communication system for robust optical beam tracking and alignment

Shuai 1 71 1 2025-10-10 min words

Summary: Free-space optical (FSO) communication is a promising technology for highspeed data transmission, but its effectiveness is highly dependent on precise beam alignment. In this work, we present a computer vision-assisted tracking system designed to maintain robust optical alignment in real time. By c...

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## Integrated petrophysical and seal characterization of the heterogeneous jurassic plover formation for CO<sub>2</ sub> storage assessment in Northwest Australia



1 63 min words



LOW VISION

**Summary:** Geological storage of carbon dioxide is critical to mitigate emissions; however, subsurface heterogeneity poses a major challenge. This study investigates the Jurassic Plover Formation in the Browse Basin, Northwest Australia, a region underexplored for carbon storage potential. An integrated petrop...

#### Read full article:

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## The Okanagan charter in action: mapping health promotion strategies in Italian state universities in 2025







LOW VISION

Summary: CONCLUSIONS: Italian universities showed a growing but uneven commitment to health promotion. Despite frequent references to wellbeing, its integration remains partial and sectoral. This study identified key areas for improvement, such as participation, and highlighted a selection of good practices....

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## **Quantifying Effects Of Lifestyle Changes On Progression To Advanced Age-Related Macular Degeneration In High Genetic Risk Individuals**









Summary: CONCLUSION: Unhealthy behaviors increased incidence of AAMD by 3 to 5fold among a highly genetically susceptible population, and 56-60% of AAMD incidence was attributed to modifiable factors: smoking, high BMI, high caloric intake and low intake of foods rich in lutein-zeaxanthin and omega-3 fatty ...

#### **Read full article:**

https://pubmed.ncbi.nlm.nih.gov/41076031/?

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

Thomas
Hummel

Thomas

Tactile Acuity

Thomas

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...

#### **⊗** Read full article:

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

Hiroyuki

1 75
min 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:

https://pubmed.ncbi.nlm.nih.gov/40526544/?

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

Leah R

Bent

1

2025-06-27

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







TACTILE ACUITY

Summary: Vision impairment may delay responses to hazards when driving. In a proof-ofconcept 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...

#### 

https://pubmed.ncbi.nlm.nih.gov/40601880/?

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







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









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

#### 

https://pubmed.ncbi.nlm.nih.gov/40850311/?

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

Paula Anne Newman-Casev

1 74 TACTILE ACUITY words

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

1 2025-09-13 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...

#### 

https://pubmed.ncbi.nlm.nih.gov/40945511/?

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

Charles M

Greenspon

1

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









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:

https://pubmed.ncbi.nlm.nih.gov/41007234/?

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









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...

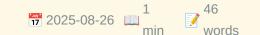
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## Individual and community level factors influencing modern contraceptive use among women of reproductive age in South Africa: a multilevel analysis









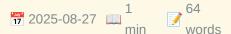
Summary: CONCLUSION: Sensory disability status influenced women's contraceptive behaviour in South Africa. Current family planning interventions should target women with sensory disabilities by prioritising accessible communication methods (e.g., braille, sign language), disability awareness training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

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/40855574/?

### **Explosion-powered eversible tactile displays**







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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https://pubmed.ncbi.nlm.nih.gov/40864730/?

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









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









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**











**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...

#### Read full article:

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





1 2025-09-02 min 56 words





**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









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 rightsbased approach-emphasizing inclusive fun...

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https://pubmed.ncbi.nlm.nih.gov/40937808/?

# 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



**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.

#### 

https://pubmed.ncbi.nlm.nih.gov/41013315/?

## **Development and Assessment of a Novel Audiosensory** Performance Method for Improving the Oral Health of Visually **Impaired Children**







**Summary:** This study evaluated the effectiveness of an audiosensory performance method in enhancing oral health knowledge and status among visually impaired children aged 6-12 years in the National Capital Region (NCR), Delhi. An interventional study design was used, involving 251 participants equally divided...

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## Reply to Simani et al. Home-Based tDCS: Safety **Considerations and Technical Monitoring**







TDCS TACS TRNS

### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41067686/?

## Comparative chloroplast genomics of Erigeron (Asteroideae, Asteraceae)

Xiaoxuan
Tian

Tia

Summary: The genus Erigeron L. (Astereae, Asteroideae, Asteraceae), commonly known as fleabanes, comprises approximately 457 species with a near-cosmopolitan distribution. However, taxonomic discrepancies persist within the genus. In this study, the complete chloroplast (cp.) genomes of 16 Erigeron species w...

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## Can transcranial direct current stimulation aimed at reducing mind wandering alleviate depression?



1 2025-10-10 min words





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https://pubmed.ncbi.nlm.nih.gov/41069944/?

## Transcranial Direct Current Stimulation as a Therapeutic **Approach for Anxiety and Related Markers: Comprehensive Systematic Review**

Rosa Maria Martins de

1 50 TDCS TACS TRNS words

Summary: CONCLUSIONS: The review highlights a lack of standardized protocols for using tDCS in treating anxiety. The methodological quality of most studies was critically low, per PRISMA guidelines. There was considerable variation in methodological approaches across the studies, indicating a need for standa...

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## The role of the medial prefrontal cortex in risk and time preferences: A tDCS study



Fan 1 70 Li 2025-10-10 min words



TDCS TACS TRNS

**Summary:** Risk and time preferences are fundamental determinants of economic decision making. Although medial prefrontal cortex (mPFC) activity has been associated with valuation across these domains, causal evidence that focal mPFC perturbation alters both risky and intertemporal choices remains limited. In ...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41072297/?

## Cerebellar transcranial direct current stimulation combined with virtual reality training for the balance of older adults: study protocol for a randomized controlled trial







TDCS TACS TRNS

Summary: BACKGROUND: Falls are a major public safety issue, and improving the posture control ability of elderly people is highly important for preventing falls. Transcranial direct current stimulation (tDCS) and virtual reality-based balance training (VRBT) have been proven to be effective in improving post...

#### 

https://pubmed.ncbi.nlm.nih.gov/41074127/?

Effects of transcranial direct current stimulation on foot sensorimotor function and postural control in healthy young adults: A systematic review and meta-analysis based on randomized controlled trials



**Summary:** CONCLUSION: In conclusion, the current evidence suggested that tDCS may enhance ankle joint proprioception in healthy young adults, while no significant improvements were observed in foot muscle strength or static and dynamic postural control. Further research is warranted to determine the optimal s...

#### 

https://pubmed.ncbi.nlm.nih.gov/41075626/?

## "Shadow government": how transcription factors regulate plant cell wall formation

Natalya
Syrchina

1 2025-10-11 min 66 TDCS TACS TRNS

Summary: The plant cell wall is a dynamic, structurally complex supramolecular compartment essential for the development, defense, and adaptation of plants to their environment. While the biosynthesis and transcriptional regulation of secondary cell walls (SCWs) have been extensively studied and are relative...

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## Lcn2 from neutrophil extracellular traps induces astrogliosis and post-stroke emotional disorders

Zhengrun

1 63 min words

**TDCS TACS TRNS** 

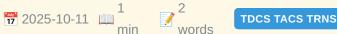
**Summary:** Patients with an ischemic stroke are often predisposed to emotional disorders. However, the mechanisms underlying post-stroke emotional disorders (PSEDs) remain unclear. Recent research highlights the role of neuroinflammation, driven primarily by infiltration of circulating immune cells within the ...

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## Response to Vogelmann et al: Contextualizing Home-Based tDCS Safety: The Remotely Supervised Model







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## Cerebral cortical activation and muscle performance during blood flow restriction training after ischemic stroke: A randomised functional near-infrared spectroscopy study











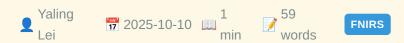
Summary: CONCLUSIONS AND IMPLICATIONS: By actively manipulating the M1 and PMC-SMA, LL-BFR and HL training yield comparable short-term improvements in central and peripheral performance after stroke. (Registry: Chinese Clinical Trial Registry; ChiCTR2400087378).

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# Exploring the neural mechanisms of electroacupuncture for cognitive impairment in depression using functional near-infrared spectroscopy: a randomized controlled trial



**Summary:** CONCLUSION: Compared with pharmacotherapy alone, the combination of pharmacotherapy with electroacupuncture improved cognitive symptoms, mood, and executive function more effectively in patients with depression over a short period. In addition, this combination was associated with enhanced cortical ...

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## Task-specific cortical mechanisms of taVNS-paired taskoriented training for post-stroke upper extremity dysfunction under cognitive load: an fNIRS study









Summary: CONCLUSION: taVNS paired with TOT enhances autonomic homeostasis, increases corticospinal pathway excitability, activates cognition-motor related brain regions, and modulates functional connectivity networks through multi-pathway neuroregulatory mechanisms. This promotes the formation of task-specif...

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## Multimodal MBC-ATT: cross-modality attentional fusion of **EEG-fNIRS** for cognitive state decoding



1 63 min words







Summary: With the rapid development of brain-computer interface (BCI) technology, the effective integration of multimodal biological signals to improve classification accuracy has become a research hotspot. However, existing methods often fail to fully exploit crossmodality correlations in complex cognitive...

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Prefrontal cortex activity during virtual obstacle avoidance and distracted walking: A methodological proof of concept using augmented reality and functional near-infrared spectroscopy



**Summary:** CONCLUSIONS: This combination of technologies elicited task-dependent modulation in PFC activity and gait behaviours in healthy adults, confirming the efficacy of AR-projected obstacles in a cognitive-motor dual-task paradigm. Based on these outcomes, it is likely that this experimental approach wil...

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Effect of mahjong, a Chinese tiled-based game, combined with upper limb robot training on upper limb function and rehabilitation participation in Chinese stroke patients: a clinical trial protocol









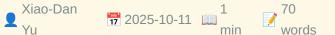
Summary: INTRODUCTION: Stroke is the second leading cause of death and disability creating a huge economic burden annually. Robot-assisted training (RT) is a promising therapy in stroke rehabilitation, but for the elderly, traditional 'reaching objects'" tasks do not seem to create sufficient motivation, an ...

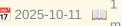
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## **Effect of Intelligence Quotient Discrepancy on Attention and Executive Function in Children with Attention Deficit Hyperactivity Disorder: An fNIRS Study**









Summary: Intelligence quotient discrepancy (IQD) is associated with neurodevelopmental disorders, but its impact on attention and executive function (EF) deficits in children with attention deficit hyperactivity disorder (ADHD) is unknown. This study aimed to examine the effect of IQD by functional near-infra...

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## Developmental changes in phonological awareness in Chinese-English bilingual children: an fNIRS longitudinal study



Tai-Li
Chou
Tai-Li
To
words

Summary: Learning to read triggers a cascade of changes in children's minds and brains, changes that lead to the formation of the "reading brain". Importantly, the developmental trajectory of these changes differs across languages. The development of phonological literacy skills comes first for learners of a...

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## Sensitivity Analysis of the Balloon Model Parameters in **Functional Near-Infrared Spectroscopy Simulation**



1 43 min words



FNIRS

Summary: CONCLUSIONS: The fNIRS hemodynamic response is highly sensitive to the Balloon model's  $\alpha$  and  $\tau$  parameters. These findings highlight the importance of accounting for physiological variability in fNIRS analysis and provide a robust framework for generating synthetic data to test signal processing algo...

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# Machine learning assessment of cognitive reserve using functional near-infrared spectroscopy in older adults with cognitive frailty



**Summary:** Cognitive reserve mitigates aging-related cognitive decline and frailty, yet current assessments lack neurobiological specificity. We aimed to develop a noninvasive, functional near infrared spectroscopy (fNIRS)-based machine learning model to classify cognitive reserve levels in older adults with c...

#### **⊗** Read full article:

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## Does increasing canopy liana density decrease the tropical forest carbon sink?



**Summary:** The ongoing decline in the American tropical forest carbon sink has serious ramifications for atmospheric carbon levels and global climate change. Increasing liana abundance may explain the decaying carbon sink because lianas reduce canopy tree growth and survival, which limits forest carbon storage...

#### Read full article:

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+e462414

## Correction: Filter bank common spatial pattern and envelopebased features in multimodal EEG-fTCD brain-computer interfaces







**Summary:** [This corrects the article DOI: 10.1371/journal.pone.0311075.].

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## Multimodal MBC-ATT: cross-modality attentional fusion of **EEG-fNIRS** for cognitive state decoding









Summary: With the rapid development of brain-computer interface (BCI) technology, the effective integration of multimodal biological signals to improve classification accuracy has become a research hotspot. However, existing methods often fail to fully exploit crossmodality correlations in complex cognitive...

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## Three-dimensional microsurgical anatomy of the basal aspect of the cerebrum: a fiber dissection study

Jinsong 1 29
Wu min words

BRAIN COMPUTER INTERFACE

Summary: CONCLUSIONS: The 3D microsurgical anatomy of the basal cerebrum provides valuable insights for planning precise and safe surgical approaches and offers anatomical evidence for further studies on brain function.

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## A multi-level teacher assistant-based knowledge distillation framework with dynamic feedback for motor imagery EEG decoding



1 2025-10-10 min 66 words

BRAIN COMPUTER INTERFACE

Summary: Deep learning has shown promise in motor imagery-based electroencephalogram (MI-EEG) decoding, a critical task in non-invasive brain-computer interfaces (BCIs). In response to the computational complexity of deep learning models to be deployed in practical BCI applications, knowledge distillation (K...

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## **EEG-CLIP: A transformer-based framework for EEG-guided** image generation

Daoqiang
Zhang

Daoqiang
Tir 2025-10-10

Tir 2025-10-10

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Tir 2025-10-10

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Tir 2025-10-10

**Summary:** Decoding visual perception from neural signals represents a fundamental step toward advanced brain-computer interfaces (BCIs), where functional magnetic resonance imaging (fMRI) has shown promising results despite practical constraints in deployment and costs. Electroencephalography (EEG), with its ...

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## Novel analysis method to determine the neural activation function of the inner hair cell



1 79 min words





BRAIN COMPUTER INTERFACE

Summary: Sensorineural hearing loss (SNH) is one of the most common forms of hearing loss. A special form of SNH is hidden hearing loss (HHL) with subjective normal hearing. Current research results indicate that these patients demonstrate a reduced wave I in the averaged signal of brainstem audiometry (ABR)...

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## Retraction notice to "Decoding thoughts, encoding ethics: A narrative review of the BCI-AI revolution" [Brain Res. 1850 (2025) 149423]





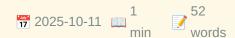


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## **Abnormal Brain Connectivity Patterns in Children with Global Developmental Delay Accompanied by Cognitive Impairment:** A Resting-State EEG Study







BRAIN COMPUTER INTERFACE

Summary: CONCLUSIONS: Children with GDD exhibit abnormal patterns of brain functional connectivity, characterized by global hypo-connectivity and local hyperconnectivity. Specific network metrics under these abnormal patterns are significantly correlated with cognitive impairment in GDD. This study also hig...

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## Sensitivity Analysis of the Balloon Model Parameters in **Functional Near-Infrared Spectroscopy Simulation**

Murad
Althobaiti

1 2025-10-11 min words

BRAIN COMPUTER INTERFACE

Summary: CONCLUSIONS: The fNIRS hemodynamic response is highly sensitive to the Balloon model's  $\alpha$  and  $\tau$  parameters. These findings highlight the importance of accounting for physiological variability in fNIRS analysis and provide a robust framework for generating synthetic data to test signal processing algo...

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#### rovr v0.4.0: an update to the modern terminal file explorer

**1** 299 NotSoProGamerR min 2025-10-12 min 299



REDDIT PYTHON

Summary: <!-- SC\_OFF --><div class="md">source code: <a href="https://github.com/ nspc911/rovr">https://github.com/nspc911/rovr</a> what my project does: it's a file manager in the terminal, made with the textual framework comparison: as a python project, it c...

#### **Read full article:**

https://www.reddit.com/r/Python/comments/1o4q4vt/rovr v040 an update to the modern terminal file/

## **Database Linting and Analysis for PostgreSQL**



Summary: <a href="https://news.ycombinator.com/item?id=45513408">Comments</a>

https://pglinter.readthedocs.io/en/latest/

## **Keyboard Holders, Generation 1**



Summary: <a href="https://news.ycombinator.com/item?id=45529081">Comments</a>

https://cceckman.com/writing/keyboard-holders-gen1/

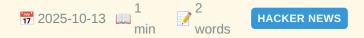
## MicroPythonOS - An Android-Like OS for Microcontrollers



Summary: <a href="https://news.ycombinator.com/item?id=45525804">Comments</a>

https://micropythonos.com

#### For Centuries Meals Amazed Visitors to Korea



Summary: <a href="https://news.ycombinator.com/item?id=45563900">Comments</a>

https://www.atlasobscura.com/articles/history-of-korean-food

## An initial investigation into WDDM on ReactOS

LorenDB 7 2025-10-12 min 13 HACKER NEWS

**Summary:** Article URL: <a href="https://reactos.org/blogs/investigating-wddm/">https://reactos.org/blogs/investigating-wddm/</a> Comments URL: <a href="https://news.ycombinator.com/item?id=45562188">https://news.ycombinator.com/item?id=45562188">https://news.ycombinator.com/item?id=45562188</a> Points: 17 # Comments: 1

**⊗** Read full article:

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#### John Searle Has Died

gustard 7 2025-10-13 min 13 HACKER NEWS

**Summary:** Article URL: <a href="https://www.nytimes.com/2025/10/12/books/john-searle-dead.html">https://www.nytimes.com/2025/10/12/books/john-searle-dead.html</a>
Comments URL: <a href="https://news.ycombinator.com/item?">https://news.ycombinator.com/item?</a>
id=45563627">https://news.ycombinator.com/item?id=45563627</a> Points: 32...

https://www.nytimes.com/2025/10/12/books/john-searle-dead.html

#### For Centuries Meals Amazed Visitors to Korea

carabiner 2025-10-13 min 13 HACKER NEWS

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https://www.atlasobscura.com/articles/history-of-korean-food

# Despite what's happening in the USA, renewables are winning globally

pseudolus 7 2025-10-13 min 13 HACKER NEWS

**Summary:** Article URL: <a href="https://thebulletin.org/2025/10/despite-whats-happening-in-the-usa-renewables-are-winning-globally/">https://thebulletin.org/2025/10/despite-whats-happening-in-the-usa-renewables-are-winning-globally/</a> Comments URL: <a href="https://news.ycombinator.com/item?id=455...">https://news.ycombinator.com/item?id=455...

https://thebulletin.org/2025/10/despite-whats-happening-in-the-usa-renewables-are-winning-globally/

## A Force/Torque Taxonomy for Classifying States During **Physical Co-Manipulation**

1 149 min 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...

http://ieeexplore.ieee.org/document/11037651

## Haptic Relocation Away From the Fingertip: Where, Why, and How

1 194 min 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...

### **Tactile-Thermal Interactions: Cooperation and Competition**

1 198 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...

http://ieeexplore.ieee.org/document/10918829

## **Twenty Years of World Haptics: Retrospective and Future Directions**

1 2025-09-19 min TRANSACTIONS HAPTICS

http://ieeexplore.ieee.org/document/11174044

#### **Table of Contents**

1 1 TRANSACTIONS HAPTICS words

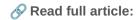






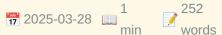


TRANSACTIONS HAPTICS



http://ieeexplore.ieee.org/document/11174042

## An Exploration of the Electrocorticogram Signatures Evoked by Ultrasound Thalamus Stimulation Under Isoflurane **Anesthesia in Rats**







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...



## **Pulmonary Hypertension Detection From Heart Sound Analysis**

1 206 min 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...

http://ieeexplore.ieee.org/document/10944577

## Transcranial Focused Ultrasound Modulates Visual Thalamus in a Nonhuman Primate Model

1 2025-04-07 min 250 words





TRANSACTIONS BIOMEDICAL ENGINEERING

Summary: Objective: The thalamus plays a pivotal role as a neural hub, integrating and distributing visual information to cortical regions responsible for visual processing. Transcranial focused ultrasound (tFUS) has emerged as a promising non-invasive brain stimulation technology, enabling modulation of neu...

## Exercise, circadian rhythms, and muscle regeneration: a path to healthy aging

Lijuan
Xiang

Lijuan

1

17

2025-10-09

min

words

FRONTIERS NEUROSCIENCE

Summary: The circadian system regulates core physiological processes, including muscle regeneration, protein synthesis, and cellular homeostasis. Disruptions in circadian rhythms contribute to impaired muscle function in older adults, with age-related declines in muscle mass and regenerative capacity serving...

https://www.frontiersin.org/articles/10.3389/fnins.2025.1633835

## Case Report: Unraveling clinical heterogeneity in DEPDC5related epilepsy: a genotype-phenotype correlation study in eight pediatric cases



Fan 1 2025-10-09 min 232



FRONTIERS NEUROSCIENCE

Summary: ObjectiveTo summarize the clinical characteristics of eight children with DEPDC5 gene variant-associated epilepsy. Methods Clinical data of children with DEPDC5related epilepsy treated at Hebei Provincial Children's Hospital from April 2020 to November 2024 were retrospectively analyzed. Results Among ...

Read full article:

https://www.frontiersin.org/articles/10.3389/fnins.2025.1595667

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

Maria Carla
Piastra

1
2024-06-14

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



1 72 min words

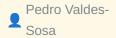
OOSTENVELD ROBERT

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...

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







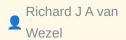
OOSTENVELD ROBERT

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







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...

#### 

https://pubmed.ncbi.nlm.nih.gov/39229492/?

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

Krzysztof J
Gorgolewski

1 2024-09-23 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



1 65 min 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...

#### 

https://pubmed.ncbi.nlm.nih.gov/39786979/?

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

Luca 1 70
Pollonini 2025-01-27 min 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: <em>Increasing access to data while retaining scientific utility</em>

Lyuba
Zehl

Zehl

Zo25-06-26 min

Zostenveld robert

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/?

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

Tim M
Tierney

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



1 69 min words





OOSTENVELD ROBERT

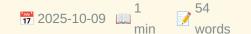
Summary: Recent technological developments have brought optically pumped magnetometers (OPMs) within reach of the larger neuroscientific community. The current state-of-the-art consists of whole-head systems that measure the magnetic field at >100 locations. OPM sensors can be constructed to measure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

#### 

https://pubmed.ncbi.nlm.nih.gov/40800964/?

## Percutaneous endoscopic discectomy with lateral approach and dual-channel method for the treatment of highly free lumbar disc herniation







LOW VISION

Summary: CONCLUSION: For patients with highly free lumbar intervertebral disc protrusion, both of lateral approach dual-channel method and UBE endoscopic surgery are safe and effective. Endoscopic surgery with lateral approach and dual-channel method could be performed under local anesthesia, allowing for th...

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# Patient-reported vision impairment in low luminance relates to visual function in age-related macular degeneration: A MACUSTAR study report



**Summary:** Early stages of age-related macular degeneration (AMD) can lead to a number of visual function deficits, but the patient relevance of these deficits is largely unknown. We therefore investigated how bilateral visual function domains affected by age-related macular degeneration (AMD) are associated w...

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## Multi-interactive feature embedding learning for medical image segmentation



**Summary:** Medical image segmentation task can provide the lesion object semantic information, but ignores edge texture details from the lesion region. Conversely, the medical image reconstruction task furnishes the object detailed information to facilitate the semantic segmentation through self-supervised lea...

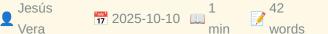
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## Acute intraocular pressure changes during isometric exercise in glaucoma patients: the influence of exercise and intensity







LOW VISION

Summary: CONCLUSION: These findings suggest that while isometric exercises can elevate IOP temporarily, they may still be incorporated into training regimens for POAG patients if intensity is carefully managed. Careful monitoring of IOP is essential to avoid exacerbating glaucoma conditions during isometric ...

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## Automated detection of pyogenic liver abscess and diagnosis of Klebsiella pneumoniae infection based on CECT images with deep learning: A multicenter study



Yi 1 38 Wang min words

Summary: CONCLUSIONS: The PLADA system provides an accurate, non-invasive method for KPLA diagnosis through a clinically interpretable two-stage AI framework. While limited by a retrospective, single-country dataset, this approach shows particular promise for early detection of KPLA in resource-limited settin...

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## Ocular Hypertension and Glaucoma After Pars Plana **Vitrectomy: A Systematic Review and Meta-analysis**



1 43 words



LOW VISION

Summary: CONCLUSIONS: PPV is associated with clinically meaningful risk of OHT and glaucoma, especially in pseudophakic eyes. Despite limitations from nonrandomized data and heterogeneity, these findings highlight lens status as a key modifier of post-PPV risk and support tailored surgical planning and posto...

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# Computer vision-based laser communication system for robust optical beam tracking and alignment



**Summary:** Free-space optical (FSO) communication is a promising technology for high-speed data transmission, but its effectiveness is highly dependent on precise beam alignment. In this work, we present a computer vision-assisted tracking system designed to maintain robust optical alignment in real time. By c...

#### 

https://pubmed.ncbi.nlm.nih.gov/41073513/?

# Integrated petrophysical and seal characterization of the heterogeneous jurassic plover formation for CO<sub>2</sub> storage assessment in Northwest Australia



**Summary:** Geological storage of carbon dioxide is critical to mitigate emissions; however, subsurface heterogeneity poses a major challenge. This study investigates the Jurassic Plover Formation in the Browse Basin, Northwest Australia, a region underexplored for carbon storage potential. An integrated petrop...

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## The Okanagan charter in action: mapping health promotion strategies in Italian state universities in 2025

Claudia

1 61 min words

LOW VISION

Summary: CONCLUSIONS: Italian universities showed a growing but uneven commitment to health promotion. Despite frequent references to wellbeing, its integration remains partial and sectoral. This study identified key areas for improvement, such as participation, and highlighted a selection of good practices....

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## **Quantifying Effects Of Lifestyle Changes On Progression To Advanced Age-Related Macular Degeneration In High Genetic Risk Individuals**



1 73 min words





LOW VISION

Summary: CONCLUSION: Unhealthy behaviors increased incidence of AAMD by 3 to 5fold among a highly genetically susceptible population, and 56-60% of AAMD incidence was attributed to modifiable factors: smoking, high BMI, high caloric intake and low intake of foods rich in lutein-zeaxanthin and omega-3 fatty ...

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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

Thomas

Tactile Acuity

Thomas

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...

#### **⊗** Read full article:

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

Hiroyuki

1 75
min 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

1

2025-06-27

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

1

80

min

words

TACTILE ACUITY

Summary: Vision impairment may delay responses to hazards when driving. In a proof-ofconcept 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...

#### 

https://pubmed.ncbi.nlm.nih.gov/40601880/?

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







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...

#### **⊗** Read full article:

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









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

#### 

https://pubmed.ncbi.nlm.nih.gov/40850311/?

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

Paula Anne Newman-Casev

1 74 TACTILE ACUITY words

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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https://pubmed.ncbi.nlm.nih.gov/40924900/?

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

Sviatoslav N Bagriantsev

1 2025-09-13 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...

#### 

https://pubmed.ncbi.nlm.nih.gov/40945511/?

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

Charles M

Greenspon

1

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









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:

https://pubmed.ncbi.nlm.nih.gov/41007234/?

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

Jianming 1 62
Xu min words

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



1 46 min words





BRAILLE

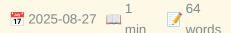
Summary: CONCLUSION: Sensory disability status influenced women's contraceptive behaviour in South Africa. Current family planning interventions should target women with sensory disabilities by prioritising accessible communication methods (e.g., braille, sign language), disability awareness training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

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/40855574/?

#### **Explosion-powered eversible tactile displays**







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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https://pubmed.ncbi.nlm.nih.gov/40864730/?

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









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/?

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







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**











**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...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/40889233/?

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



1 2025-09-02 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



1 55 min 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 rightsbased approach-emphasizing inclusive fun...

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https://pubmed.ncbi.nlm.nih.gov/40937808/?

# 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



**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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## **Development and Assessment of a Novel Audiosensory** Performance Method for Improving the Oral Health of Visually **Impaired Children**







**Summary:** This study evaluated the effectiveness of an audiosensory performance method in enhancing oral health knowledge and status among visually impaired children aged 6-12 years in the National Capital Region (NCR), Delhi. An interventional study design was used, involving 251 participants equally divided...

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## Reply to Simani et al. Home-Based tDCS: Safety **Considerations and Technical Monitoring**









TDCS TACS TRNS

### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41067686/?

## Comparative chloroplast genomics of Erigeron (Asteroideae, Asteraceae)

Xiaoxuan
Tian

Tia

Summary: The genus Erigeron L. (Astereae, Asteroideae, Asteraceae), commonly known as fleabanes, comprises approximately 457 species with a near-cosmopolitan distribution. However, taxonomic discrepancies persist within the genus. In this study, the complete chloroplast (cp.) genomes of 16 Erigeron species w...

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## Can transcranial direct current stimulation aimed at reducing mind wandering alleviate depression?



1 2025-10-10 min words

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https://pubmed.ncbi.nlm.nih.gov/41069944/?

## Transcranial Direct Current Stimulation as a Therapeutic **Approach for Anxiety and Related Markers: Comprehensive Systematic Review**

Rosa Maria Martins de

1 50 TDCS TACS TRNS words

Summary: CONCLUSIONS: The review highlights a lack of standardized protocols for using tDCS in treating anxiety. The methodological quality of most studies was critically low, per PRISMA guidelines. There was considerable variation in methodological approaches across the studies, indicating a need for standa...

#### **⊗** Read full article:

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## The role of the medial prefrontal cortex in risk and time preferences: A tDCS study



Fan 1 70 Li 2025-10-10 min words

TDCS TACS TRNS

**Summary:** Risk and time preferences are fundamental determinants of economic decision making. Although medial prefrontal cortex (mPFC) activity has been associated with valuation across these domains, causal evidence that focal mPFC perturbation alters both risky and intertemporal choices remains limited. In ...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41072297/?

## Cerebellar transcranial direct current stimulation combined with virtual reality training for the balance of older adults: study protocol for a randomized controlled trial







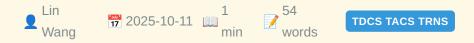
TDCS TACS TRNS

Summary: BACKGROUND: Falls are a major public safety issue, and improving the posture control ability of elderly people is highly important for preventing falls. Transcranial direct current stimulation (tDCS) and virtual reality-based balance training (VRBT) have been proven to be effective in improving post...

#### 

https://pubmed.ncbi.nlm.nih.gov/41074127/?

Effects of transcranial direct current stimulation on foot sensorimotor function and postural control in healthy young adults: A systematic review and meta-analysis based on randomized controlled trials



**Summary:** CONCLUSION: In conclusion, the current evidence suggested that tDCS may enhance ankle joint proprioception in healthy young adults, while no significant improvements were observed in foot muscle strength or static and dynamic postural control. Further research is warranted to determine the optimal s...

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r1ebioUg42SIGRyVKSoW4m6X-ecQ00&fc=None&ff=20251012213911&v=2.18.0.post9+e462414

## "Shadow government": how transcription factors regulate plant cell wall formation

Natalya
Syrchina

1 2025-10-11 min 66 TDCS TACS TRNS

Summary: The plant cell wall is a dynamic, structurally complex supramolecular compartment essential for the development, defense, and adaptation of plants to their environment. While the biosynthesis and transcriptional regulation of secondary cell walls (SCWs) have been extensively studied and are relative...

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## Lcn2 from neutrophil extracellular traps induces astrogliosis and post-stroke emotional disorders

Zhengrun

1 63 min words

**TDCS TACS TRNS** 

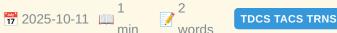
**Summary:** Patients with an ischemic stroke are often predisposed to emotional disorders. However, the mechanisms underlying post-stroke emotional disorders (PSEDs) remain unclear. Recent research highlights the role of neuroinflammation, driven primarily by infiltration of circulating immune cells within the ...

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https://pubmed.ncbi.nlm.nih.gov/41075784/?

## Response to Vogelmann et al: Contextualizing Home-Based tDCS Safety: The Remotely Supervised Model







### Read full article:

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## Cerebral cortical activation and muscle performance during blood flow restriction training after ischemic stroke: A randomised functional near-infrared spectroscopy study









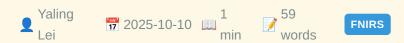


Summary: CONCLUSIONS AND IMPLICATIONS: By actively manipulating the M1 and PMC-SMA, LL-BFR and HL training yield comparable short-term improvements in central and peripheral performance after stroke. (Registry: Chinese Clinical Trial Registry; ChiCTR2400087378).

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41066487/?

# Exploring the neural mechanisms of electroacupuncture for cognitive impairment in depression using functional near-infrared spectroscopy: a randomized controlled trial



**Summary:** CONCLUSION: Compared with pharmacotherapy alone, the combination of pharmacotherapy with electroacupuncture improved cognitive symptoms, mood, and executive function more effectively in patients with depression over a short period. In addition, this combination was associated with enhanced cortical ...

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https://pubmed.ncbi.nlm.nih.gov/41069950/?

## Task-specific cortical mechanisms of taVNS-paired taskoriented training for post-stroke upper extremity dysfunction under cognitive load: an fNIRS study









Summary: CONCLUSION: taVNS paired with TOT enhances autonomic homeostasis, increases corticospinal pathway excitability, activates cognition-motor related brain regions, and modulates functional connectivity networks through multi-pathway neuroregulatory mechanisms. This promotes the formation of task-specif...

#### **⊗** Read full article:

https://pubmed.ncbi.nlm.nih.gov/41070188/?

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## Multimodal MBC-ATT: cross-modality attentional fusion of **EEG-fNIRS** for cognitive state decoding



1 63 min words







Summary: With the rapid development of brain-computer interface (BCI) technology, the effective integration of multimodal biological signals to improve classification accuracy has become a research hotspot. However, existing methods often fail to fully exploit crossmodality correlations in complex cognitive...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41070190/?

Prefrontal cortex activity during virtual obstacle avoidance and distracted walking: A methodological proof of concept using augmented reality and functional near-infrared spectroscopy



**Summary:** CONCLUSIONS: This combination of technologies elicited task-dependent modulation in PFC activity and gait behaviours in healthy adults, confirming the efficacy of AR-projected obstacles in a cognitive-motor dual-task paradigm. Based on these outcomes, it is likely that this experimental approach wil...

#### 

https://pubmed.ncbi.nlm.nih.gov/41071803/?

Effect of mahjong, a Chinese tiled-based game, combined with upper limb robot training on upper limb function and rehabilitation participation in Chinese stroke patients: a clinical trial protocol









Summary: INTRODUCTION: Stroke is the second leading cause of death and disability creating a huge economic burden annually. Robot-assisted training (RT) is a promising therapy in stroke rehabilitation, but for the elderly, traditional 'reaching objects'" tasks do not seem to create sufficient motivation, an ...

#### 

https://pubmed.ncbi.nlm.nih.gov/41073118/?

## **Effect of Intelligence Quotient Discrepancy on Attention and Executive Function in Children with Attention Deficit Hyperactivity Disorder: An fNIRS Study**









Summary: Intelligence quotient discrepancy (IQD) is associated with neurodevelopmental disorders, but its impact on attention and executive function (EF) deficits in children with attention deficit hyperactivity disorder (ADHD) is unknown. This study aimed to examine the effect of IQD by functional near-infra...

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https://pubmed.ncbi.nlm.nih.gov/41076036/?

## Developmental changes in phonological awareness in Chinese-English bilingual children: an fNIRS longitudinal study



Tai-Li
Chou
Tai-Li
To
words



Summary: Learning to read triggers a cascade of changes in children's minds and brains, changes that lead to the formation of the "reading brain". Importantly, the developmental trajectory of these changes differs across languages. The development of phonological literacy skills comes first for learners of a...

#### **⊗** Read full article:

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## Sensitivity Analysis of the Balloon Model Parameters in **Functional Near-Infrared Spectroscopy Simulation**









Summary: CONCLUSIONS: The fNIRS hemodynamic response is highly sensitive to the Balloon model's  $\alpha$  and  $\tau$  parameters. These findings highlight the importance of accounting for physiological variability in fNIRS analysis and provide a robust framework for generating synthetic data to test signal processing algo...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41076093/?

# Machine learning assessment of cognitive reserve using functional near-infrared spectroscopy in older adults with cognitive frailty



**Summary:** Cognitive reserve mitigates aging-related cognitive decline and frailty, yet current assessments lack neurobiological specificity. We aimed to develop a noninvasive, functional near infrared spectroscopy (fNIRS)-based machine learning model to classify cognitive reserve levels in older adults with c...

#### **⊗** Read full article:

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## Does increasing canopy liana density decrease the tropical forest carbon sink?



**Summary:** The ongoing decline in the American tropical forest carbon sink has serious ramifications for atmospheric carbon levels and global climate change. Increasing liana abundance may explain the decaying carbon sink because lianas reduce canopy tree growth and survival, which limits forest carbon storage...

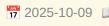
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## Correction: Filter bank common spatial pattern and envelopebased features in multimodal EEG-fTCD brain-computer interfaces







**Summary:** [This corrects the article DOI: 10.1371/journal.pone.0311075.].

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## Multimodal MBC-ATT: cross-modality attentional fusion of **EEG-fNIRS** for cognitive state decoding



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Summary: With the rapid development of brain-computer interface (BCI) technology, the effective integration of multimodal biological signals to improve classification accuracy has become a research hotspot. However, existing methods often fail to fully exploit crossmodality correlations in complex cognitive...

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## Three-dimensional microsurgical anatomy of the basal aspect of the cerebrum: a fiber dissection study

Jinsong 1 29
Wu min words

BRAIN COMPUTER INTERFACE

Summary: CONCLUSIONS: The 3D microsurgical anatomy of the basal cerebrum provides valuable insights for planning precise and safe surgical approaches and offers anatomical evidence for further studies on brain function.

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## A multi-level teacher assistant-based knowledge distillation framework with dynamic feedback for motor imagery EEG decoding



1 2025-10-10 min 66 words

BRAIN COMPUTER INTERFACE

Summary: Deep learning has shown promise in motor imagery-based electroencephalogram (MI-EEG) decoding, a critical task in non-invasive brain-computer interfaces (BCIs). In response to the computational complexity of deep learning models to be deployed in practical BCI applications, knowledge distillation (K...

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## **EEG-CLIP: A transformer-based framework for EEG-guided** image generation

Daoqiang
Zhang

Daoqiang
Tir 2025-10-10

Tir 2025-10-10

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Tir 2025-10-10

**Summary:** Decoding visual perception from neural signals represents a fundamental step toward advanced brain-computer interfaces (BCIs), where functional magnetic resonance imaging (fMRI) has shown promising results despite practical constraints in deployment and costs. Electroencephalography (EEG), with its ...

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## Novel analysis method to determine the neural activation function of the inner hair cell

1 79 min words

BRAIN COMPUTER INTERFACE

Summary: Sensorineural hearing loss (SNH) is one of the most common forms of hearing loss. A special form of SNH is hidden hearing loss (HHL) with subjective normal hearing. Current research results indicate that these patients demonstrate a reduced wave I in the averaged signal of brainstem audiometry (ABR)...

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## Retraction notice to "Decoding thoughts, encoding ethics: A narrative review of the BCI-AI revolution" [Brain Res. 1850 (2025) 149423]







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## **Abnormal Brain Connectivity Patterns in Children with Global Developmental Delay Accompanied by Cognitive Impairment:** A Resting-State EEG Study







BRAIN COMPUTER INTERFACE

Summary: CONCLUSIONS: Children with GDD exhibit abnormal patterns of brain functional connectivity, characterized by global hypo-connectivity and local hyperconnectivity. Specific network metrics under these abnormal patterns are significantly correlated with cognitive impairment in GDD. This study also hig...

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## Sensitivity Analysis of the Balloon Model Parameters in **Functional Near-Infrared Spectroscopy Simulation**

Murad
Althobaiti

1
2025-10-11
min

43
BRAIN COMPUTER INTERFACE

Summary: CONCLUSIONS: The fNIRS hemodynamic response is highly sensitive to the Balloon model's  $\alpha$  and  $\tau$  parameters. These findings highlight the importance of accounting for physiological variability in fNIRS analysis and provide a robust framework for generating synthetic data to test signal processing algo...

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### **3D-Printed Automatic Weather Station**

1 2 2 min words



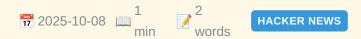


HACKER NEWS

Summary: <a href="https://news.ycombinator.com/item?id=45529331">Comments</a>

https://3dpaws.comet.ucar.edu

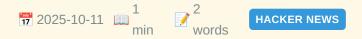
## **Show HN: Baby's First International Landline**



Summary: <a href="https://news.ycombinator.com/item?id=45515978">Comments</a>

https://wip.tf/posts/telefonefix-building-babys-first-international-landline/

## My first week of vibecoding



Summary: <a href="https://news.ycombinator.com/item?id=45546107">Comments</a>

https://underreacted.leaflet.pub/3m2v53oi4bk2z

## **Everything You Need to Know About [California] SB 79**

1 2025-10-13 min words HACKER NEWS

Summary: <a href="https://news.ycombinator.com/item?id=45563359">Comments</a>

https://mnolangray.substack.com/p/everything-you-need-to-know-about

## Wall Street is worried the private credit bubble will burst

2 zerosizedweasle 7 2025-10-12 min 1 13 words

**Summary:** Article URL: <a href="https://www.thetimes.com/business-money/economics/article/wall-street-first-brands-private-credit-bubble-risk-363q2tcds">https://www.thetimes.com/business-money/economics/article/wall-street-first-brands-private-credit-bubble-risk-363q2tcds</a> Comments URL: <a href="..."><a href="...</a>

**Read full article:** 

https://www.thetimes.com/business-money/economics/article/wall-street-first-brands-private-credit-bubble-risk-363q2tcds

### **Novelty Automation**

gregsadetsky 7 2025-10-12 min 13 words

**Summary:** Article URL: <a href="https://www.novelty-automation.com/">https://www.novelty-automation.com/</a> Comments URL: <a href="https://news.ycombinator.com/item?id=45563161">https://news.ycombinator.com/item?id=45563161">https://news.ycombinator.com/item?id=45563161</a> Points: 5 # Comments: 1

https://www.novelty-automation.com/

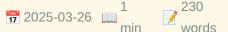
## **Everything You Need to Know About [California] SB 79**

Dickfordb 7 2025-10-13 min 13 words Words

**Summary:** Article URL: <a href="https://mnolangray.substack.com/p/everything-you-need-to-know-about">https://mnolangray.substack.com/p/everything-you-need-to-know-about</a> Comments URL: <a href="https://news.ycombinator.com/item?id=45563359">https://news.ycombinator.com/item?id=45563359</a> ...

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An Active Insole to Reduce Plantar Pressure Loading: Using **Predictive Finite Element Driven Soft Hydraulic Actuators to** Minimize Plantar Pressure and the Pressure Time Integral for **Diabetic Foot Ulceration Risk Management** 







TRANSACTIONS BIOMEDICAL ENGINEERING

Summary: Objective: This article aims to design, manufacture and evaluate an active insole to reduce plantar tissue loading to minimise the risk of diabetic foot ulceration for people living with diabetes. Methods: A prototype hydraulic soft robotic actuating insole was produced. It was controlled by an appr...



http://ieeexplore.ieee.org/document/10938869

## **Optimizing Non-Intersecting Synthetic Vascular Trees in Nonconvex Organs**







TRANSACTIONS BIOMEDICAL ENGINEERING

Summary: Objective: The understanding of the mechanisms driving vascular development is still limited. Techniques to generate vascular trees synthetically have been developed to tackle this problem. However, most algorithms are limited to single trees inside convex perfusion volumes. We introduce a new frame...



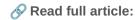
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TRANSACTIONS BIOMEDICAL ENGINEERING



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## **IEEE Transactions on Biomedical Engineering Handling Editors Information**





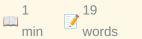


TRANSACTIONS BIOMEDICAL ENGINEERING

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http://ieeexplore.ieee.org/document/11174022

## BNIP3L/NIX-mediated mitophagy: Future directions in Alzheimer's disease



BRAIN RESEARCH

Summary: Publication date: 15 November 2025<b>Source:</b> Brain Research, Volume 1867Author(s): Violina Kakoty, Khang Wen Goh, Prashant Kesharwani, Young Tag Ko

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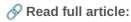
https://www.sciencedirect.com/science/article/pii/S0006899325005335?dgcid=rss\_sd\_all

## Rethinking task importance in the visual world paradigm

1 min

**BRAIN RESEARCH** 

**Summary:** Publication date: 15 November 2025<b>Source:</b> Brain Research, Volume 1867Author(s): Falk Huettig, Michael K. Tanenhaus



https://www.sciencedirect.com/science/article/pii/S0006899325005281?dgcid=rss\_sd\_all

## Single-cell RNA sequencing reveals the ameliorative effects of Kai-Xin-San on depression via regulating neuroplasticity and inflammation in the hypothalamus of rats

1 min



**NEUROSCIENCE JOURNAL** 

**Summary:** Publication date: 10 November 2025<b>Source:</b><br/>Neuroscience, Volume 587Author(s): Xiaoxi Li, Yiming Hua, Huiling Li, Yingnan<br/>Feng, Chao Wu, Xin Hu, Zhichao Zhang, Xiaojiang Zhou, Xianzhe Dong



https://www.sciencedirect.com/science/article/pii/S0306452225009674?dgcid=rss\_sd\_all

## GlyT1 inhibition promotes post-ischemic neuroprotection in the MCAO model

NEUROSCIENCE JOURNAL

Summary: Publication date: 10 November 2025<b>Source:</b> Neuroscience, Volume 587Author(s): Daniel Pereira Cavalcante, Antônio Ítalo dos Santos Nunes, Gustavo Almeida de Carvalho, Renato Santiago Gomez, Leandro do Prado Assunção, Alexandre Melo Bailão, Mauro Cunha Xavier Pinto



https://www.sciencedirect.com/science/article/pii/S0306452225009637?dgcid=rss\_sd\_all

## Blackcurrant anthocyanins improve visual contrast resolution for optokinetic responses in aging mice





NEUROSCIENCE JOURNAL

Summary: Publication date: 10 November 2025<b>Source:</b> Neuroscience, Volume 587Author(s): Yuko Sugita, Koki Kobayashi, Hung-Ya Tu, Daisuke Okuzaki, Takahisa Furukawa



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

Maria Carla
Piastra

1
2024-06-14

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



1 72 min words

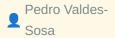
OOSTENVELD ROBERT

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...

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







OOSTENVELD ROBERT

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







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

Sorgolewski

Gorgolewski

Sorgolewski

Sorgolewski

Sorgolewski

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Sorgolewski

Sorgolewski

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

1 65 min 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...

#### 

https://pubmed.ncbi.nlm.nih.gov/39786979/?

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

Luca 1 70
Pollonini 2025-01-27 min 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: <em>Increasing access to data while retaining scientific utility</em>



Lyuba
Zehl

Zehl

Zo25-06-26 min

Zostenveld robert

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:

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

Tim M
Tierney

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



1 69 min 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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## Percutaneous endoscopic discectomy with lateral approach and dual-channel method for the treatment of highly free lumbar disc herniation









LOW VISION

Summary: CONCLUSION: For patients with highly free lumbar intervertebral disc protrusion, both of lateral approach dual-channel method and UBE endoscopic surgery are safe and effective. Endoscopic surgery with lateral approach and dual-channel method could be performed under local anesthesia, allowing for th...

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## Patient-reported vision impairment in low luminance relates to visual function in age-related macular degeneration: A MACUSTAR study report



**Summary:** Early stages of age-related macular degeneration (AMD) can lead to a number of visual function deficits, but the patient relevance of these deficits is largely unknown. We therefore investigated how bilateral visual function domains affected by age-related macular degeneration (AMD) are associated w...

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## Multi-interactive feature embedding learning for medical image segmentation



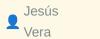
**Summary:** Medical image segmentation task can provide the lesion object semantic information, but ignores edge texture details from the lesion region. Conversely, the medical image reconstruction task furnishes the object detailed information to facilitate the semantic segmentation through self-supervised lea...

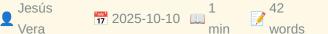
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## Acute intraocular pressure changes during isometric exercise in glaucoma patients: the influence of exercise and intensity







LOW VISION

Summary: CONCLUSION: These findings suggest that while isometric exercises can elevate IOP temporarily, they may still be incorporated into training regimens for POAG patients if intensity is carefully managed. Careful monitoring of IOP is essential to avoid exacerbating glaucoma conditions during isometric ...

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# Automated detection of pyogenic liver abscess and diagnosis of Klebsiella pneumoniae infection based on CECT images with deep learning: A multicenter study



**Summary:** CONCLUSIONS: The PLADA system provides an accurate, non-invasive method for KPLA diagnosis through a clinically interpretable two-stage AI framework. While limited by a retrospective, single-country dataset, this approach shows particular promise for early detection of KPLA in resource-limited settin...

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## Ocular Hypertension and Glaucoma After Pars Plana Vitrectomy: A Systematic Review and Meta-analysis



**Summary:** CONCLUSIONS: PPV is associated with clinically meaningful risk of OHT and glaucoma, especially in pseudophakic eyes. Despite limitations from nonrandomized data and heterogeneity, these findings highlight lens status as a key modifier of post-PPV risk and support tailored surgical planning and posto...

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## Computer vision-based laser communication system for robust optical beam tracking and alignment

Shuai 1 71 Low vision words

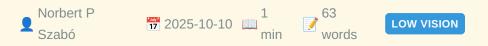
**Summary:** Free-space optical (FSO) communication is a promising technology for high-speed data transmission, but its effectiveness is highly dependent on precise beam alignment. In this work, we present a computer vision-assisted tracking system designed to maintain robust optical alignment in real time. By c...

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# Integrated petrophysical and seal characterization of the heterogeneous jurassic plover formation for CO<sub>2</sub> storage assessment in Northwest Australia



**Summary:** Geological storage of carbon dioxide is critical to mitigate emissions; however, subsurface heterogeneity poses a major challenge. This study investigates the Jurassic Plover Formation in the Browse Basin, Northwest Australia, a region underexplored for carbon storage potential. An integrated petrop...

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