



Daily Briefing - September 15, 2025

Your Daily Tech & Programming Digest

Monday, September 15, 2025

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Today's Top Stories

Discovering robust biomarkers of psychiatric disorders from resting-state functional MRI via graph neural networks: A systematic review

1
min

26
words

NEUROIMAGE

Summary: <p>Publication date: 1 October 2025</p><p>Source: NeuroImage, Volume 319</p><p>Author(s): Yi Hao Chan, Deepank Girish, Sukrit Gupta, Jing Xia, Chockalingam Kasi, Yinan He, Conghao Wang, Jagath C. Rajapakse</p>




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https://www.sciencedirect.com/science/article/pii/S1053811925004252?dgcid=rss_sd_all

The role of physical exercise on hippocampal volume in depressive symptoms: a systematic review and multi-level meta-analysis

 1
min

 18
words

NEUROIMAGE



Summary: <p>Publication date: 15 October 2025</p><p>Source: Neurolmage, Volume 320</p><p>Author(s): Florian Javelle, Judith Suhrkamp, Laura Wählen, Lars Donath, Wilhelm Bloch</p>



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Neuroscience: large-scale evidence for perceptual entrainment to auditory rhythms

 2025-09-12  1
min

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words




NATURE NEUROSCIENCE SUBJECTS



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NATURE NEUROSCIENCE SUBJECTS


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Increased frontal functional connectivity correlates with structural disconnection in the anterior corpus callosum in healthy older adults


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Heterogeneous, temporally consistent, and plastic brain development after preterm birth




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NATURE NEUROSCIENCE SUBJECTS

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Tastes and retronasal odours evoke a shared flavour-specific neural code in the human insula

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NATURE NEUROSCIENCE SUBJECTS

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Detecting unacceptable behavior of an autonomous vehicle using electroencephalography


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Securely stressed: association between attachment and empathic stress in romantic couples

 2025-09-12  1 min  0 words


NATURE NEUROSCIENCE SUBJECTS

 Read full article:


<https://www.nature.com/articles/s41598-025-13970-9>

Internal and external codes for location

 Jennifer C.
Robinson

 2025-08-26

 1
min

 136
words

NATURE NEUROSCIENCE

Summary:


Nature Neuroscience, Published online: 26 August 2025; [doi:10.1038/s41593-025-02045-7](https://www.nature.com/articles/s41593-025-02045-7)


When navigating through the world, we can predict our next location on the basis of an internal sense of our location and velocity, but we can ...

 Read full article:


<https://www.nature.com/articles/s41593-025-02045-7>

Large-scale cortical functional networks are organized in structured cycles

 Mark W.
Woolrich

 2025-08-27

 1
min

 47
words

NATURE NEUROSCIENCE

Summary:

Nature Neuroscience, Published online: 27 August 2025; [doi:10.1038/s41593-025-02052-8](https://www.nature.com/articles/s41593-025-02052-8)

The human brain cycles through a repertoire of brain networks on a 1-second timescale during rest and tasks. This cycling appears to allow peri...

 Read full article:

<https://www.nature.com/articles/s41593-025-02052-8>

Grid cells accurately track movement during path integration-based navigation despite switching reference frames

Kevin
Allen



2025-09-10



1
min



41
words

NATURE NEUROSCIENCE

Summary: <p>Nature Neuroscience, Published online: 10 September 2025; doi:10.1038/s41593-025-02054-6</p>Grid cells do not maintain a stable pattern during a self-motion-based task, but track animal movement in multiple local reference frames an...



Read full article:

<https://www.nature.com/articles/s41593-025-02054-6>

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



D.
Rangaprakash



2025-09-11



1
min



276
words

FRONTIERS NEUROINFORMATICS

Summary: In large public multi-site fMRI datasets, the sample characteristics, data acquisition methods, and MRI scanner models vary across sites and datasets. This non-neural variability obscures neural differences between groups and leads to poor machine learning based diagnostic classification of neurodev...



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Risk of postoperative major adverse cerebrovascular events in patients with spontaneous intracranial hematoma stratified by type 2 diabetes mellitus

 Jun
Yang

 17 2025-09-11

 1
min

 273
words


FRONTIERS HUMAN NEUROSCIENCE


Summary: Background and purpose Diabetes Mellitus (DM) is a common concomitant disease of spontaneous intracranial hemorrhage (ICH). Postoperative major adverse cerebrovascular events (post-MACEs) may diminish the surgical benefits of patients with ICH. However, evidence regarding the impact of DM on post-MAC...

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<https://www.frontiersin.org/articles/10.3389/fnhum.2025.1654763>

The top 100 most cited publications on astrocytes in Alzheimer's disease from 2000 to 2025: a bibliometric analysis

 Qian
He

 17 2025-09-11

 1
min

 250
words


FRONTIERS NEUROSCIENCE


Summary: Background The pathogenesis of Alzheimer's disease (AD) is closely linked to astrocytes. This study conducts a bibliometric analysis of data from a wide range of literature in this field to enhance the in-depth understanding of this area. Methods Publications were retrieved from the 2000–2025 Web of Sc...

 Read full article:

<https://www.frontiersin.org/articles/10.3389/fnins.2025.1593188>

An ICA-based artifact suppression method for online extraction of TMS-evoked potentials: toward closed-loop TMS-EEG applications beyond the motor cortex

 Sina Varmaghani, Ronald Phlypo, Olivier David, Sylvain Harquel and Alan Chauvin

 17 2025-09-11

 1
min

 317
words

JOURNAL NEURAL ENGINEERING




Summary: Objective. Transcranial magnetic stimulation (TMS) combined with electroencephalography (EEG) has become a valuable tool in clinical and cognitive neuroscience. However, TMS-EEG signals often suffer from severe artifacts, particularly in lateral cortical regions where TMS-evoked muscle artifacts are...

 Read full article:

<http://iopscience.iop.org/article/10.1088/1741-2552/ae01d8>


Personalized beta band HD-tACS over the left SMA improves speech and limb movement by modulating prefrontal delta oscillations in neurotypical young adults

 Fatemeh Tabari, Joel Isaac Berger, Melda Kunduk, Arend W A Van Gemmert and Karim Johari

 2025-09-11  1 min  247 words

JOURNAL NEURAL ENGINEERING




Summary: Objective. The supplementary motor area (SMA) demonstrates abnormal beta activity (13–30 Hz) during speech and limb movement tasks in neurological conditions such as Parkinson's disease (PD). Transcranial alternating current stimulation (tACS) has demonstrated promising improvement in motor and non-...

 Read full article:

<http://iopscience.iop.org/article/10.1088/1741-2552/ae00f5>

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

 Maria Carla Piastra

 2024-06-14  1 min  64 words

OOSTENVELD ROBERT


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

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

 Julius
Welzel

 2024-07-02

 1
min

 72
words

OOSTENVELD ROBERT


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


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One hundred years of EEG for brain and behaviour research

 Pedro Valdes-
Sosa

 2024-08-22

 1
min

 2
words

OOSTENVELD ROBERT

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



Richard J A van
Wezel



2024-09-04



1
min



65
words

OOSTENVELD ROBERT

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



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



Krzysztof J
Gorgolewski



2024-09-23



1
min



82
words

OOSTENVELD ROBERT

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



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

Fanny
Quandt

17 2025-01-09

1
min

65
words

OOSTENVELD ROBERT

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

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

Luca
Pollonini

17 2025-01-27

1
min

70
words

OOSTENVELD ROBERT


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



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

 Lyuba
Zehl

 2025-06-26  1
min

 67
words

OOSTENVELD ROBERT

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



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

 Tim M
Tierney

 2025-08-13  1
min

 74
words

OOSTENVELD ROBERT


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



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Optimal configuration of on-scalp OPMs with fixed channel counts

 Robert
Oostenveld

 2025-08-13  1
min

 69
words

OOSTENVELD ROBERT


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



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A Stereo Synchronization Method for Consumer-Grade Video Cameras to Measure Multi-Target 3D Displacement Using Image Processing in Shake Table Experiments

 Yuan-Sen
Yang

 2025-09-13  1
min

 63
words

LOW VISION

Summary: The use of consumer-grade cameras for stereo vision provides a cost-effective, non-contact method for measuring three-dimensional displacement in civil engineering experiments. However, obtaining accurate 3D coordinates requires accurate temporal alignment of several unsynchronized cameras, which is...

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Real-Time Driver Attention Detection in Complex Driving Environments via Binocular Depth Compensation and Multi-Source Temporal Bidirectional Long Short-Term Memory Network



Huajie
Liu



2025-09-13



1
min



62
words

LOW VISION

Summary: Driver distraction is a key factor contributing to traffic accidents. However, in existing computer vision-based methods for driver attention state recognition, monocular camera-based approaches often suffer from low accuracy, while multi-sensor data fusion techniques are compromised by poor real-ti...

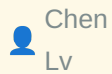


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Tracking-Based Denoising: A Trilateral Filter-Based Denoiser for Real-World Surveillance Video in Extreme Low-Light Conditions



Chen

Lv



2025-09-13



1

min



75

words

LOW VISION

Summary: Video denoising in extremely low-light surveillance scenarios is a challenging task in computer vision, as it suffers from harsh noise and insufficient signal to reconstruct fine details. The denoising algorithm for these scenarios encounters challenges such as the lack of ground truth, and the nois...

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A Unified Preprocessing Pipeline for Noise-Resilient Crack Segmentation in Leaky Infrastructure Surfaces



Jeongho

Cho



2025-09-13



1

min



67


words


LOW VISION

Summary: Wet cracks caused by leakage often exhibit visual and structural distortions due to surface contamination, salt crystallization, and corrosion byproducts. These factors significantly degrade the performance of sensor- and vision-based crack detection systems. In moist environments, the initiation an...


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U-ResNet, a Novel Network Fusion Method for Image Classification and Segmentation

 Yaqing
Song

 2025-09-13

 1
min

 65
words

LOW VISION


Summary: Image classification and segmentation are important tasks in computer vision. ResNet and U-Net are representative networks for image classification and image segmentation, respectively. Although many scholars used to fuse these two networks, most integration focuses on image segmentation with U-Net,...


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Serum Vitamin D Levels as Predictors of Response to Intravitreal Anti-VEGF Therapy in Diabetic Macular Edema: A Clinical Correlation Study

 Ana Maria
Stoica

 2025-09-13

 1
min

 66
words

LOW VISION


Summary: Our study explored the role of serum 25-hydroxyvitamin D [25(OH)D] levels as an indicator of response to intravitreal anti-vascular endothelial growth factor (anti-VEGF) therapy in patients with diabetic macular edema (DME), highlighting functional and anatomical outcomes linked to systemic biomarkers...

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Visual Outcomes of a Non-Diffractive Extended Depth-of-Focus Intraocular Lens in Patients with Early-Stage Age-Related Macular Degeneration

 Celia Sánchez-Ramos



2025-09-13



1
min



66
words

LOW VISION

Summary: Background/Objectives: Age-related macular degeneration (AMD) is a leading cause of visual impairment in older adults and often coexists with cataracts. The indication of presbyopia-correcting intraocular lenses (IOLs) in these patients remains controversial. This study aimed to evaluate the clinica...




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Use of Mechanical Enhanced Colonoscopy to Improve Polyp Detection During Colorectal Cancer Screening: A Real-World Healthcare Database Analysis

 Seth A
Gross

 2025-09-13

 1
min

 71
words

LOW VISION


Summary: Introduction: High performance colonoscopy requires the monitoring of an individual's adenoma detection rate (ADR). The Endocuff (EndoCuff Vision, Olympus America Inc., Center Valley, PA, USA) is an endoscopic distal attachment device that increases surface area exposure during colonoscopy. While st...

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Metabolic alterations in diabetic patients: aqueous humor profiling for biomarker discovery

 Guna
Laganovska

 2025-09-13

 1
min

 64
words

LOW VISION


Summary: Diabetic retinopathy, a leading cause of vision loss in working-age populations, is a severe complication of diabetes mellitus. Metabolomics, a key approach in systems biology, offers insights into the complex pathophysiology of diabetes by analyzing low-molecular-weight compounds in biological cont...


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
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Evaluating the predictive potential of Th1 (IFN- γ +/CD4+/CD4+/CD4+ in rapidly progressive amyotrophic lateral sclerosis

 Hao Zhang

 2025-09-14

 1 min

 31 words

LOW VISION


Summary: CONCLUSIONS: Th1/CD4⁺ (with an optimal cutoff value of 16.21) was established as an independent risk factor for rapid progression in ALS. The machine learning model incorporating Th1/CD4⁺ demonstrated strong predictive performance.


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My Broken Heart

 Ashley C Rider

 2025-05-08

 1 min

 34 words

TACTILE ACUITY


Summary: AUDIENCE: The target audience for the key learning objectives of this Left-Ventricular Assist Device (LVAD) simulation are emergency medicine residents. Other team members such as attendings, nurses, pharmacists, and technicians could potentially be integrated.


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Distributions of orofacial two-point discrimination threshold: A cross-sectional study in healthy population and patients with pain-related temporomandibular disorders

 Xin
Xiong

 17 2025-05-15

 1
min

 70
words

TACTILE ACUITY

Summary: CONCLUSION: Pain-related TMDs patients had weaker orofacial tactile acuity, which was consistent in gender subgroups, except for the temporal region of males. Healthy males had weaker tactile acuity compared to females in TMJ and temporal regions. No significant gender effect on orofacial tactile ac...




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

 Thomas Hummel

 2025-05-28  1 min  70 words


TACTILE ACUITY

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

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

 Hiroyuki Kajimoto

 2025-06-17  1 min  75 words

TACTILE ACUITY

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

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

 Leah R
Bent



2025-06-27



1
min



69
words

TACTILE ACUITY

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




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Directional vibro-tactile hazard warnings for drivers with vision impairments

 Alex R
Bowers



2025-07-02



1
min



80
words

TACTILE ACUITY

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






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

 Cecilia
Guariglia

 2025-08-01  1 min

 64 words

TACTILE ACUITY

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



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

 Eric
Fjeldheim

 2025-08-24  1 min

 22 words

TACTILE ACUITY

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

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



Paula Anne Newman-
Casey



2025-09-09



1
min



74
words

TACTILE ACUITY

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



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



Sviatoslav N
Bagriantsev



2025-09-13



1
min



58
words

TACTILE ACUITY

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



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WAYVision: A hybrid deep learning approach for recognizing handwritten Kannada Braille using wavelet transformation and attention based YOLOv5



Shobha Rani

N



2025-08-25



1

min



64

words

BRAILLE

Summary: Handwritten Braille character recognition presents a significant challenge in the field of assistive technology, especially with the inclusion of various linguistic scripts such as Kannada. The data set is uniquely curated, combining ground-truth data from Kaggle and real-world samples collected fro...




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

 Joseph Paul
Nemargut



2025-08-25



1

min



62

words

BRaille

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




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

 Jianming
Xu



2025-08-25



1

min



62

words

BRaille

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





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

 Million
Phiri

 2025-08-26  1
min

 46
words

BRAILLE


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



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Explosion-powered eversible tactile displays

 Robert F
Shepherd

 2025-08-27  1
min

 64
words

BRAILLE


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


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

 Zhijun
Ma

 2025-08-28

 1
min

 57
words

[BRAILLE](#)


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


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

 Min
Zhang

 2025-08-28

 1
min

 64
words

[BRAILLE](#)

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

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



Hao
Lin



2025-09-01



1
min



72
words

BRAILLE

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



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



Ji
Liu



2025-09-02



1
min



56
words

BRAILLE

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



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

Önder İşlek

17

2025-09-12



1 min



55 words

BRAILLE

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

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Personalized High-Definition Transcranial Direct Current Stimulation for the Treatment of Depression: A Randomized Clinical Trial

Katherine Narr

17

2025-09-11



1 min



66 words

TDCS TACS TRNS


Summary: CONCLUSIONS AND RELEVANCE: In this randomized clinical trial of HD-tDCS in participants with moderate to severe depression, the 12-day HD-tDCS therapy was observed to significantly improve mood with a moderate effect size. Similar effect sizes in pharmacotherapy, psychotherapy, and conventional tDCS...


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Effect of theta-transcranial alternating current stimulation on working memory performance among healthy adults: A systematic review and meta-analysis

 Rui-Ke
Zhang

 2025-09-11

 1
min

 27
words

TDCS TACS TRNS

Summary: CONCLUSION: Theta-tACS enhances working memory in healthy adults, with effects modulated by the task type and protocol parameters, offering dual implications for cognitive enhancement and clinical interventions.


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Review of nonpharmacological interventions for delaying the effects of cerebral neuropathy caused by diabetes

 Lun-De
Liao

 2025-09-12

 1
min

 67
words

TDCS TACS TRNS


Summary: Diabetic peripheral neuropathy (DPN) is a debilitating complication of diabetes that affects nearly half of diabetic patients and manifests as chronic pain, sensory loss, and motor dysfunction. The limited efficacy of traditional pharmacological treatments, coupled with their side effects, has inten...


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Online HD-tRNS over the right temporoparietal junction modulates social inference but not motor coordination

 Guillaume
Dumas

 2025-09-12  1
min

 68
words

TDCS TACS TRNS


Summary: Social interactions are fundamental to human cognition, with the right temporoparietal junction (rTPJ) playing a key role in integrating motor coordination and social inference. While transcranial random noise stimulation (tRNS) is a promising technique for modulating cortical excitability in real t...



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Neural Correlates of Borderline Personality Disorder (BPD) Based on Electroencephalogram (EEG)-A Mechanistic Review

 Donata
Kurpas

 2025-09-13  1
min

 62
words

TDCS TACS TRNS


Summary: Borderline Personality Disorder (BPD) is marked by emotional dysregulation, instability in self-image and relationships, and high impulsivity. While functional magnetic resonance imaging (fMRI) studies have provided valuable insights into the disorder's neural correlates, electroencephalography (EEG...


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Burnout and the Brain-A Mechanistic Review of Magnetic Resonance Imaging (MRI) Studies

 Donata Kurpas

 2025-09-13

 1 min

 64 words

TDCS TACS TRNS


Summary: Occupational burnout is ubiquitous yet still debated as a disease entity. Previous reviews surveyed multiple biomarkers but left their neural substrate unclear. We therefore asked: What, if any, reproducible magnetic-resonance signature characterises burnout? Following PRISMA principles adapted for ...


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From Immediate Impact to Enduring Change: A Transcriptomic Comparison of tDCS's Temporal Effects and Its Long-Term Equivalence with TMS

 Hanoch Kaphzan

 2025-09-13

 1 min

 63 words

TDCS TACS TRNS

Summary: Transcranial Direct Current Stimulation (tDCS) and Transcranial Magnetic Stimulation (TMS) are neuromodulatory techniques with therapeutic potential for similar disorders; however, their molecular effects require further elucidation, and whether both strategies work in similar biological pathways is...

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General Innovations in Pain Management

 Alaa Abd-
Elsayed

 17

2025-09-13

 1
min

 74
words

TDCS TACS TRNS


Summary: Chronic pain management is constantly evolving, and our literature review aims to describe the general innovations happening within the field. The need for advancements in chronic pain is a necessity, as debilitating back pain and other forms of chronic pain are significant issues in the United Stat...


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Behavioral outcomes after tDCS treatment during immediate post-intervention and follow-up periods in children and adolescents diagnosed with attention-deficit/hyperactivity disorder: a systematic review and meta-analysis on randomized sham-controlled trials

 Kuo-Chuan
Hung

 2025-09-13

 1
min

 58
words

TDCS TACS TRNS

Summary: This meta-analysis aimed at elucidating the effectiveness of transcranial direct current stimulation (tDCS) in improving behavioral symptoms of attention deficit/hyperactivity disorder (ADHD) in children/adolescents during the immediate post-intervention/follow-up periods and identifying potential c...

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Effect of HD-tDCS targeting the DLPFC on cognitive ability and flight simulation performance in healthy adults

Xia
Zhu

2025-09-14

1
min

36
words

TDCS TACS TRNS

Summary: OBJECTIVE: This study aimed to investigate the effects of high-definition transcranial direct current stimulation (HD-tDCS) on attention, working memory, inhibitory control, and cognitive flexibility in healthy adults, and to examine its association with flight simulation performance.

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Evaluating the effects of multimodal EEG-fNIRS neurofeedback for motor imagery: An experimental platform and study protocol

Pierre
Maurel

2025-09-11

1
min

61
words

FNIRS

Summary: BACKGROUND: Neurofeedback (NF) enables the self-regulation of brain activity through real-time feedback extracted from brain measures. Recently, the combination of several neuroimaging methods to characterize brain activity has led to growing interest in NF. The integration of various portable recor...

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The Emotional and Cognitive Effects of Synchronizing to Music During Acute Exercise: An fNIRS Study



William Forde
Thompson



2025-09-12



1
min



61
words

FNIRS

Summary: Synchronizing movements to music enhances exercise performance and enjoyment, yet its short-term effects on attention and cognition remain underexplored. This study examined the influence of synchronous music, asynchronous music, and a no-music control condition on emotional responses, perceived exe...



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Interbrain Synchrony Mitigates Extremism Within Echo Chambers



Simone Shamay-
Tsoory



2025-09-12



1
min



65
words

FNIRS

Summary: People tend to engage with content that aligns with their pre-existing attitudes, forming echo chambers that reinforce biases and may amplify extremism. Here, we investigate whether discussions within homogeneous groups drive attitudinal extremity and whether interbrain synchronized activity between...





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An Empirical Study on the Impact of Different Interaction Methods on User Emotional Experience in Cultural Digital Design


 Feng
Zou

 17 2025-09-13  1
min

 64
words

FNIRS


Summary: Traditional culture plays a vital role in shaping national identity and emotional belonging, making it imperative to explore innovative strategies for its digital preservation and engagement. This study investigates how interaction design in cultural digital games influences users' emotional experie...



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TopoTempNet: A High-Accuracy and Interpretable Decoding Method for fNIRS-Based Motor Imagery

 Zhejun
Kuang

 17 2025-09-13  1
min

 63
words

FNIRS

Summary: Functional near-infrared spectroscopy (fNIRS) offers a safe and portable signal source for brain-computer interface (BCI) applications, particularly in motor imagery (MI) decoding. However, its low sampling rate and hemodynamic delay pose challenges for temporal modeling and dynamic brain network an...


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Compact Colocated Bimodal EEG/fNIRS Multi-Distance Sensor

 Angélique
Rasclé

 2025-09-13

 1
min

 70
words

FNIRS


Summary: At present, it is a real challenge to measure brain signals outside of the lab with portable systems that are robust, comfortable and easy to use. We propose in this article a bimodal electroencephalography-functional near-infrared spectroscopy (EEG-fNIRS) sensor whose spatial geometry allows the ro...


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Do newborns detect prosodic violations in an unfamiliar language at birth?

 Judit
Gervain

 2025-09-14

 1
min

 65
words

FNIRS

Summary: Experience with language starts prenatally, as the intrauterine environment allows speech prosody to get through. Martinez-Alvarez and colleagues (2023) demonstrated that newborns detect utterance-level prosodic violations in the language they heard prenatally, French. It remains unknown, however, w...

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The sensory-motor overlap in motor imitation: evidence from motor imagery

 Shengjun
Wu

 17

2025-09-14



1
min



70
words

FNIRS

Summary: Motor imitation is crucial for acquiring motor skills and social cognition, yet the theoretical understanding of its underlying mechanism remains partial. The direct matching hypothesis suggests that the overlap between observed and executed motions is crucial for effective motor imitation. This stu...

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Your smiles inspired my smiles: the interpersonal neural coupling of positive emotion contagion during social interactions

 Yanmei
Wang

 17

2025-09-14



1
min



70
words

FNIRS


Summary: Emotional contagion refers a process that by which the emotions of a perceiver become more similar to those of others as a result of exposure to these emotions. The present study investigated the behavioral and interpersonal neural coupling mechanisms underlying positive emotional contagion. We recr...



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Abnormal Brain Activation Patterns in Patients With Post-Acute Sequelae of COVID-19 (PASC) During Recovery: A fNIRS Study

 Xiaoying Tang

 17 2025-09-14  1 min

 69 words

fNIRS

Summary: COVID-19 has increased the likelihood of cognitive impairment in patients with post-acute sequelae of COVID-19 (PASC). There is a lack of direct evidence regarding the working memory performance of mild patients during the recovery period. This study employed functional near-infrared spectroscopy (f...



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EEGOpt: A performance efficient Bayesian optimization framework for automated EEG signal classification

 Monisha Chakraborty

 17 2025-09-11  1 min

 34 words

BRAIN COMPUTER INTERFACE

Summary: CONCLUSION: EEGOpt is a scalable and interpretable framework that automatically identifies optimal signal processing and classification strategies adaptable to EEG datasets, making it a valuable tool for neuroscientific research, diagnostics, and brain-computer interface development.


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Stretchable Multilevel Mesh Brain Electrodes for Neuroplasticity in Glioma Patients Undergoing Surgery

Xue
Feng

2025-09-12

1
min

63
words

BRAIN COMPUTER INTERFACE

Summary: Brain disease surgical treatment usually leads to neurological dysfunction. Electroencephalogram (EEG)-based neuroplasticity study may facilitate patient nerve function recovery from injury, allowing a return to normal activities. Due to the limitations of wound infections and hair barrier effects, ...

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2D Vanadium Carbide/Oxide Heterostructure-Based Artificial Sensory Neuron for Multi-Color Near-Infrared Object Recognition

 Jiahong
Wang

 17

2025-09-12



1
min



58
words

BRAIN COMPUTER INTERFACE

Summary: Near-infrared (NIR) photon detection and object recognition are crucial technologies for all-weather target identification in autonomous navigation, nighttime surveillance, and tactical reconnaissance. However, conventional NIR detection systems, which rely on photodetectors and von Neumann computin...

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Sequence action representations contextualize during early skill learning



Leonardo G
Cohen



2025-09-12



1
min



68
words

BRAIN COMPUTER INTERFACE

Summary: Activities of daily living rely on our ability to acquire new motor skills composed of precise action sequences. Here, we asked in humans if the millisecond-level neural representation of an action performed at different contextual sequence locations within a skill differentiates or remains stable d...



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Classification of Different Motor Imagery Tasks with the Same Limb Using Electroencephalographic Signals



Carlos Julio Tierra-
Criollo



2025-09-13



1
min



69
words

BRAIN COMPUTER INTERFACE

Summary: Stroke is a neurological condition that often results in long-term motor deficits. Given the high prevalence of motor impairments worldwide, there is a critical need to explore innovative neurorehabilitation strategies that aim to enhance the quality of life of patients. One promising approach invol...




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TopoTempNet: A High-Accuracy and Interpretable Decoding Method for fNIRS-Based Motor Imagery

 Zhejun
Kuang

 2025-09-13

 1
min

 63
words

BRAIN COMPUTER INTERFACE

Summary: Functional near-infrared spectroscopy (fNIRS) offers a safe and portable signal source for brain-computer interface (BCI) applications, particularly in motor imagery (MI) decoding. However, its low sampling rate and hemodynamic delay pose challenges for temporal modeling and dynamic brain network an...


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A new wide-scope, multi-biomarker wastewater-based epidemiology analytical method to monitor the health and well-being of inhabitants at a metropolitan scale

 Barbara Kasprzyk-Hordern

 2025-09-13

 1 min

 64 words

BRAIN COMPUTER INTERFACE

Summary: This manuscript establishes a new, comprehensive biomarker list and a multiresidue trace quantification method for community-wide health and well-being assessment at a metropolitan scale using wastewater-based epidemiology (WBE) and mass spectrometry pipelines. This method enables the quantification...

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Thalamocortical dysrhythmia-related sleep spindle desynchronization in patients with tinnitus



Yuanqing
Li



2025-09-13



1
min



68
words

BRAIN COMPUTER INTERFACE

Summary: Patients with tinnitus commonly suffer from sleep problems, and the underlying neural mechanisms remain unclear. Previous studies have focused primarily on the correlation between patients' sleep structure and tinnitus, lacking exploration into the links between sleep problems and the underlying pat...



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Neurodevelopmental deviations in schizophrenia: Evidences from multimodal connectome-based brain ages



Huafu
Chen



2025-09-13



1
min



21
words

BRAIN COMPUTER INTERFACE

Summary: CONCLUSION: These findings from a multimodal brain age perspective suggest that advanced brain age gaps exist early in youths with schizophrenia.



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MSAttNet: Multi-scale attention convolutional neural network for motor imagery classification



Jing
Jin



2025-09-14



1
min



16
words

BRAIN COMPUTER INTERFACE

Summary: CONCLUSION: MSAttNet effectively addresses the challenges of MI-EEG datasets, improving decoding performance by robust feature extraction.



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[tbw4049Wgf_RdKXdtNCvGW0IVBZFpHe7zaN4k4DwoD5&fc=None&ff=20250915033918&v=2.18.0.post9+e462414](https://pubmed.ncbi.nlm.nih.gov/40946865/?utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1rSUu--tbw4049Wgf_RdKXdtNCvGW0IVBZFpHe7zaN4k4DwoD5&fc=None&ff=20250915033918&v=2.18.0.post9+e462414)

Another free Python 3 book - Files and Directories



/u/
caudor



2025-09-14



1
min



145
words

REDDIT PYTHON

Summary: <!-- SC_OFF --><div class="md"><p>If you are interested, you can click the top link on my landing page and download my eBook, "Working with Files and Directories in Python 3" for free: https://tr.ee/MFI4Mmyu1B</p> <p>I recently gave away a Beginner's ...






Read full article:

https://www.reddit.com/r/Python/comments/1ngy2ha/another_free_python_3_book_files_and_directories/

Ivan Lee, Appointed Editor-in-Chief of EMBC Proceedings

 Nancy
Zimmerman

 2025-09-08  1
min

 17
words

EMBS

Summary:



The post [Ivan Lee, Appointed Editor-in-Chief of EMBC Proceedings](https://www.embs.org/press/embc-eic-sunghoon-ivan-lee/#new_tab) appeared first on [IEEE EMBS](https://www.embs.org).

 Read full article:

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

Author Correction: Dynamics of mature myelin

 Ethan G.
Hughes

 2025-08-27  1
min

 14
words

NATURE NEUROSCIENCE



Summary:

Nature Neuroscience, Published online: 27 August 2025; [doi:10.1038/s41593-025-02061-7](https://www.nature.com/articles/s41593-025-02061-7)
Author Correction: Dynamics of mature myelin

 Read full article:

<https://www.nature.com/articles/s41593-025-02061-7>

The brain's body map does not forget lost limbs

 2025-08-29  1 min  56 words





NATURE NEUROSCIENCE

Summary: <p>Nature Neuroscience, Published online: 29 August 2025; doi:10.1038/s41593-025-02051-9</p>Functional neuroimaging of individuals before and after they underwent an arm amputation shows that the map of the missing limb in somatosensor...

 Read full article:

<https://www.nature.com/articles/s41593-025-02051-9>

Vagus block blocks cachexia

 Leonie Welberg  2025-09-05  1 min  12 words


NATURE NEUROSCIENCE


Summary: <p>Nature Neuroscience, Published online: 05 September 2025; doi:10.1038/s41593-025-02058-2</p>Vagus block blocks cachexia

 Read full article:

<https://www.nature.com/articles/s41593-025-02058-2>

A very handy neural interface

 William P.
Olson

 2025-09-05

 1
min


 13
words


NATURE NEUROSCIENCE

Summary: <p>Nature Neuroscience, Published online: 05 September 2025; doi:10.1038/s41593-025-02057-3</p>A very handy neural interface


 Read full article:
<https://www.nature.com/articles/s41593-025-02057-3>

Lithium limiting AD pathology

 Laura
Zelenka

 2025-09-05

 1
min


 12
words

NATURE NEUROSCIENCE

Summary: <p>Nature Neuroscience, Published online: 05 September 2025; doi:10.1038/s41593-025-02059-1</p>Lithium limiting AD pathology

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This Week in The Journal

 McKeon,
P.

 17

2025-08-13

 1
min

 0
words


JOURNAL NEUROSCIENCE THIS WEEK



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This Week in The Journal

 McKeon,
P.

 17

2025-08-20

 1
min

 0
words


JOURNAL NEUROSCIENCE THIS WEEK



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This Week in The Journal

 McKeon,
P.

 17

2025-08-27

 1
min

 0
words


JOURNAL NEUROSCIENCE THIS WEEK




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Is there a link between motor learning and mirror neuron system: TMS study

 Evgeny
Blagovechtchenski

 2025-09-11

 1
min

 235
words


FRONTIERS HUMAN NEUROSCIENCE


Summary: BackgroundThe mirror neuron system (MNS) activates during the performance of an action and during the observation of the same action being performed by another. At the motor output level, MNS activation manifests as motor resonance, or a muscle-specific increase in corticospinal excitability during ...

 Read full article:


<https://www.frontiersin.org/articles/10.3389/fnhum.2025.1650152>

Differences in dynamic functional connectivity between naturalistic music listening and rest in preadolescents

 Elvira
Brattico

 2025-09-11

 1
min

 232
words

FRONTIERS HUMAN NEUROSCIENCE


Summary: IntroductionEngagement with music is a significant aspect of adolescents' lives and this interest blossoms during preadolescence. Compared to the extensive body of research focused on adult music brain function, relatively few studies have examined the neural connections involved in music listening ...

 Read full article:


<https://www.frontiersin.org/articles/10.3389/fnhum.2025.1651074>

Assessing consciousness in patients with locked-in syndrome using their EEG

 Martin
Bogdan

 17 2025-09-11

 1
min

 250
words

FRONTIERS NEUROSCIENCE

Summary: Research indicates that locked-in syndrome (LIS) patients retain both consciousness and cognitive functions, despite their inability to perform voluntary muscle movements or communicate. Brain-Computer Interfaces (BCIs) provide a means for these patients to communicate, which is crucial, as the abil...

 Read full article:


<https://www.frontiersin.org/articles/10.3389/fnins.2025.1604173>

Mutant mouse models implicate a role for mGluR1/5, prolyl isomerase (Pin1) and Homer1a interactions in wakefulness

 Nirinjini
Naidoo

 17 2025-09-11

 1
min

 309
words

FRONTIERS NEUROSCIENCE


Summary: IntroductionHealthy sleep and wake are integral to good health and occur when an organism is able to maintain long bouts of both sleep and wakefulness. Homer proteins have been shown to be important for sleep in both Drosophila and mice. For example, genetic deletion of Homer1a in mice results in fa...

 Read full article:

<https://www.frontiersin.org/articles/10.3389/fnins.2025.1572258>

Akkermansia muciniphila in neurological disorders: mechanisms and therapeutic potential via the gut-brain axis

Anren
Zhang

 2025-09-11

 1
min

 196
words

FRONTIERS NEUROSCIENCE


Summary: In recent years, the role of *Akkermansia muciniphila* (*A. muciniphila*) in neurological diseases has attracted increasing attention. As a probiotic, *A. muciniphila* is closely associated with host health, metabolism, and immunity, demonstrating therapeutic potential in various conditions such as obesit...

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<https://www.frontiersin.org/articles/10.3389/fnins.2025.1650807>

Prognostic impact of collateral circulation in direct thrombectomy versus bridging thrombectomy for acute ischemic stroke patients with anterior circulation large vessel occlusion: a retrospective comparative study

Yuan
Qin

 2025-09-11

 1
min

 280
words

FRONTIERS NEUROSCIENCE

Summary: ObjectiveTo evaluate the prognostic impact of collateral circulation on outcomes of direct thrombectomy (DT) versus bridging thrombectomy (BT) for acute ischemic stroke (AIS) patients with anterior circulation large vessel occlusion (LVO).MethodThis retrospective study included 460 AIS patients with...

 Read full article:

<https://www.frontiersin.org/articles/10.3389/fnins.2025.1624284>

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



Maria Carla
Piastra



2024-06-14



1
min



64
words

OOSTENVELD ROBERT

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



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



Julius
Welzel



2024-07-02



1
min



72
words

OOSTENVELD ROBERT

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






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One hundred years of EEG for brain and behaviour research

 Pedro Valdes-Sosa

 2024-08-22  1 min

 2 words

OOSTENVELD ROBERT



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[utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1BUB2BG5RbxOblm-hBbiJWEhGG43qIVrvGNHOTqBKva9wWrltM&fc=None&ff=20250915032101&v=2.18.0.post9+e462414](https://pubmed.ncbi.nlm.nih.gov/39174725/?utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1BUB2BG5RbxOblm-hBbiJWEhGG43qIVrvGNHOTqBKva9wWrltM&fc=None&ff=20250915032101&v=2.18.0.post9+e462414)

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


 Richard J A van Wezel

 2024-09-04  1 min

 65 words

OOSTENVELD ROBERT

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


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

 Krzysztof J
Gorgolewski

 2024-09-23

 1
min

 82
words

OOSTENVELD ROBERT


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


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

 Fanny
Quandt

 2025-01-09

 1
min

 65
words

OOSTENVELD ROBERT


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


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

 Luca
Pollonini

 17 2025-01-27

 1
min

 70
words

OOSTENVELD ROBERT


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


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

 Lyuba
Zehl

 17 2025-06-26

 1
min

 67
words

OOSTENVELD ROBERT


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


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

 Tim M
Tierney

 2025-08-13

 1
min

 74
words

OOSTENVELD ROBERT


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


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Optimal configuration of on-scalp OPMs with fixed channel counts

 Robert
Oostenveld

 2025-08-13

 1
min

 69
words

OOSTENVELD ROBERT


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

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A Stereo Synchronization Method for Consumer-Grade Video Cameras to Measure Multi-Target 3D Displacement Using Image Processing in Shake Table Experiments

 Yuan-Sen
Yang



2025-09-13



1

min



63

words

LOW VISION

Summary: The use of consumer-grade cameras for stereo vision provides a cost-effective, non-contact method for measuring three-dimensional displacement in civil engineering experiments. However, obtaining accurate 3D coordinates requires accurate temporal alignment of several unsynchronized cameras, which is...



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Real-Time Driver Attention Detection in Complex Driving Environments via Binocular Depth Compensation and Multi-Source Temporal Bidirectional Long Short-Term Memory Network



Huajie
Liu



2025-09-13



1
min



62
words

LOW VISION

Summary: Driver distraction is a key factor contributing to traffic accidents. However, in existing computer vision-based methods for driver attention state recognition, monocular camera-based approaches often suffer from low accuracy, while multi-sensor data fusion techniques are compromised by poor real-ti...



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Tracking-Based Denoising: A Trilateral Filter-Based Denoiser for Real-World Surveillance Video in Extreme Low-Light Conditions



Chen

Lv



2025-09-13



1

min



75

words

LOW VISION

Summary: Video denoising in extremely low-light surveillance scenarios is a challenging task in computer vision, as it suffers from harsh noise and insufficient signal to reconstruct fine details. The denoising algorithm for these scenarios encounters challenges such as the lack of ground truth, and the nois...

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A Unified Preprocessing Pipeline for Noise-Resilient Crack Segmentation in Leaky Infrastructure Surfaces



Jeongho

Cho



2025-09-13



1

min



67


words


LOW VISION

Summary: Wet cracks caused by leakage often exhibit visual and structural distortions due to surface contamination, salt crystallization, and corrosion byproducts. These factors significantly degrade the performance of sensor- and vision-based crack detection systems. In moist environments, the initiation an...


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U-ResNet, a Novel Network Fusion Method for Image Classification and Segmentation

 Yaqing
Song


 2025-09-13

 1
min

 65
words

LOW VISION


Summary: Image classification and segmentation are important tasks in computer vision. ResNet and U-Net are representative networks for image classification and image segmentation, respectively. Although many scholars used to fuse these two networks, most integration focuses on image segmentation with U-Net,...


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Serum Vitamin D Levels as Predictors of Response to Intravitreal Anti-VEGF Therapy in Diabetic Macular Edema: A Clinical Correlation Study

 Ana Maria
Stoica

 2025-09-13

 1
min

 66
words

LOW VISION


Summary: Our study explored the role of serum 25-hydroxyvitamin D [25(OH)D] levels as an indicator of response to intravitreal anti-vascular endothelial growth factor (anti-VEGF) therapy in patients with diabetic macular edema (DME), highlighting functional and anatomical outcomes linked to systemic biomarkers...


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Visual Outcomes of a Non-Diffractive Extended Depth-of-Focus Intraocular Lens in Patients with Early-Stage Age-Related Macular Degeneration

 Celia Sánchez-Ramos

 2025-09-13

 1 min

 66 words

LOW VISION


Summary: Background/Objectives: Age-related macular degeneration (AMD) is a leading cause of visual impairment in older adults and often coexists with cataracts. The indication of presbyopia-correcting intraocular lenses (IOLs) in these patients remains controversial. This study aimed to evaluate the clinica...

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Use of Mechanical Enhanced Colonoscopy to Improve Polyp Detection During Colorectal Cancer Screening: A Real-World Healthcare Database Analysis

 Seth A
Gross

 2025-09-13

 1
min

 71
words

LOW VISION


Summary: Introduction: High performance colonoscopy requires the monitoring of an individual's adenoma detection rate (ADR). The Endocuff (EndoCuff Vision, Olympus America Inc., Center Valley, PA, USA) is an endoscopic distal attachment device that increases surface area exposure during colonoscopy. While st...

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Metabolic alterations in diabetic patients: aqueous humor profiling for biomarker discovery

 Guna
Laganovska

 2025-09-13

 1
min

 64
words

LOW VISION


Summary: Diabetic retinopathy, a leading cause of vision loss in working-age populations, is a severe complication of diabetes mellitus. Metabolomics, a key approach in systems biology, offers insights into the complex pathophysiology of diabetes by analyzing low-molecular-weight compounds in biological cont...


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Evaluating the predictive potential of Th1 (IFN- γ +/CD4+/CD4+/CD4+ in rapidly progressive amyotrophic lateral sclerosis

 Hao Zhang

 2025-09-14

 1 min

 31 words

LOW VISION


Summary: CONCLUSIONS: Th1/CD4⁺ (with an optimal cutoff value of 16.21) was established as an independent risk factor for rapid progression in ALS. The machine learning model incorporating Th1/CD4⁺ demonstrated strong predictive performance.


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My Broken Heart

 Ashley C Rider

 2025-05-08

 1 min

 34 words

TACTILE ACUITY


Summary: AUDIENCE: The target audience for the key learning objectives of this Left-Ventricular Assist Device (LVAD) simulation are emergency medicine residents. Other team members such as attendings, nurses, pharmacists, and technicians could potentially be integrated.


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Distributions of orofacial two-point discrimination threshold: A cross-sectional study in healthy population and patients with pain-related temporomandibular disorders

 Xin
Xiong

 17 2025-05-15

 1
min

 70
words

TACTILE ACUITY

Summary: CONCLUSION: Pain-related TMDs patients had weaker orofacial tactile acuity, which was consistent in gender subgroups, except for the temporal region of males. Healthy males had weaker tactile acuity compared to females in TMJ and temporal regions. No significant gender effect on orofacial tactile ac...

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

 Thomas Hummel



2025-05-28



1 min



70 words

TACTILE ACUITY

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




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

 Hiroyuki Kajimoto



2025-06-17



1 min



75 words

TACTILE ACUITY

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




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

 Leah R
Bent

 2025-06-27

 1
min

 69
words

TACTILE ACUITY


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


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Directional vibro-tactile hazard warnings for drivers with vision impairments

 Alex R
Bowers

 2025-07-02

 1
min

 80
words

TACTILE ACUITY


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



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

 Cecilia
Guariglia

 2025-08-01  1
min

 64
words

TACTILE ACUITY

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



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

 Eric
Fjeldheim

 2025-08-24  1
min

 22
words

TACTILE ACUITY

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

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



Paula Anne Newman-Casey



2025-09-09



1

min



74

words

TACTILE ACUITY

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



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



Sviatoslav N Bagriantsev



2025-09-13



1

min



58

words

TACTILE ACUITY

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



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WAYVision: A hybrid deep learning approach for recognizing handwritten Kannada Braille using wavelet transformation and attention based YOLOv5



Shobha Rani

N



2025-08-25



1

min



64

words

BRAILLE

Summary: Handwritten Braille character recognition presents a significant challenge in the field of assistive technology, especially with the inclusion of various linguistic scripts such as Kannada. The data set is uniquely curated, combining ground-truth data from Kaggle and real-world samples collected fro...




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

 Joseph Paul
Nemargut



2025-08-25



1
min



62
words

BRaille


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

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

 Jianming
Xu



2025-08-25



1
min



62
words

BRaille

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

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

 Million
Phiri



2025-08-26



1
min



46
words

BRAILLE

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




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Explosion-powered eversible tactile displays

 Robert F
Shepherd



2025-08-27



1
min



64
words

BRAILLE

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





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

 Zhijun
Ma

 2025-08-28

 1
min

 57
words

[BRAILLE](#)


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


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

 Min
Zhang

 2025-08-28

 1
min

 64
words

[BRAILLE](#)

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

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



Hao
Lin



2025-09-01



1
min



72
words

BRAILLE

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



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



Ji
Liu



2025-09-02



1
min



56
words

BRAILLE

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

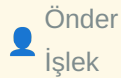


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Beyond access: rethinking assistive technology for individuals with visual impairments in Türkiye



2025-09-12

1
min55
words

BRAILLE

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



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[utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=165yO28ehHLjXJb8W3JvTx2bYozdDe8lvyFRBIOfHZxFR8o1uX&fc=None&ff=20250915032039&v=2.18.0.post9+e462414](https://pubmed.ncbi.nlm.nih.gov/40937808/?utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=165yO28ehHLjXJb8W3JvTx2bYozdDe8lvyFRBIOfHZxFR8o1uX&fc=None&ff=20250915032039&v=2.18.0.post9+e462414)

Personalized High-Definition Transcranial Direct Current Stimulation for the Treatment of Depression: A Randomized Clinical Trial

Katherine
Narr

2025-09-11

1
min66
words

TDCS TACS TRNS


Summary: CONCLUSIONS AND RELEVANCE: In this randomized clinical trial of HD-tDCS in participants with moderate to severe depression, the 12-day HD-tDCS therapy was observed to significantly improve mood with a moderate effect size. Similar effect sizes in pharmacotherapy, psychotherapy, and conventional tDCS...




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Effect of theta-transcranial alternating current stimulation on working memory performance among healthy adults: A systematic review and meta-analysis

 Rui-Ke
Zhang

 2025-09-11

 1
min

 27
words

TDCS TACS TRNS

Summary: CONCLUSION: Theta-tACS enhances working memory in healthy adults, with effects modulated by the task type and protocol parameters, offering dual implications for cognitive enhancement and clinical interventions.


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Review of nonpharmacological interventions for delaying the effects of cerebral neuropathy caused by diabetes

 Lun-De
Liao

 2025-09-12

 1
min

 67
words

TDCS TACS TRNS


Summary: Diabetic peripheral neuropathy (DPN) is a debilitating complication of diabetes that affects nearly half of diabetic patients and manifests as chronic pain, sensory loss, and motor dysfunction. The limited efficacy of traditional pharmacological treatments, coupled with their side effects, has inten...


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Online HD-tRNS over the right temporoparietal junction modulates social inference but not motor coordination

 Guillaume
Dumas

 2025-09-12  1
min

 68
words

TDCS TACS TRNS


Summary: Social interactions are fundamental to human cognition, with the right temporoparietal junction (rTPJ) playing a key role in integrating motor coordination and social inference. While transcranial random noise stimulation (tRNS) is a promising technique for modulating cortical excitability in real t...



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Neural Correlates of Borderline Personality Disorder (BPD) Based on Electroencephalogram (EEG)-A Mechanistic Review

 Donata
Kurpas

 2025-09-13  1
min

 62
words

TDCS TACS TRNS


Summary: Borderline Personality Disorder (BPD) is marked by emotional dysregulation, instability in self-image and relationships, and high impulsivity. While functional magnetic resonance imaging (fMRI) studies have provided valuable insights into the disorder's neural correlates, electroencephalography (EEG...


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Burnout and the Brain-A Mechanistic Review of Magnetic Resonance Imaging (MRI) Studies

 Donata Kurpas

 2025-09-13

 1 min

 64 words

TDCS TACS TRNS


Summary: Occupational burnout is ubiquitous yet still debated as a disease entity. Previous reviews surveyed multiple biomarkers but left their neural substrate unclear. We therefore asked: What, if any, reproducible magnetic-resonance signature characterises burnout? Following PRISMA principles adapted for ...


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From Immediate Impact to Enduring Change: A Transcriptomic Comparison of tDCS's Temporal Effects and Its Long-Term Equivalence with TMS

 Hanoch Kaphzan

 2025-09-13

 1 min

 63 words

TDCS TACS TRNS

Summary: Transcranial Direct Current Stimulation (tDCS) and Transcranial Magnetic Stimulation (TMS) are neuromodulatory techniques with therapeutic potential for similar disorders; however, their molecular effects require further elucidation, and whether both strategies work in similar biological pathways is...

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General Innovations in Pain Management

 Alaa Abd-
Elsayed

 17

2025-09-13

 1
min

 74
words

TDCS TACS TRNS


Summary: Chronic pain management is constantly evolving, and our literature review aims to describe the general innovations happening within the field. The need for advancements in chronic pain is a necessity, as debilitating back pain and other forms of chronic pain are significant issues in the United Stat...


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Behavioral outcomes after tDCS treatment during immediate post-intervention and follow-up periods in children and adolescents diagnosed with attention-deficit/hyperactivity disorder: a systematic review and meta-analysis on randomized sham-controlled trials

 Kuo-Chuan
Hung

 2025-09-13

 1
min

 58
words

TDCS TACS TRNS

Summary: This meta-analysis aimed at elucidating the effectiveness of transcranial direct current stimulation (tDCS) in improving behavioral symptoms of attention deficit/hyperactivity disorder (ADHD) in children/adolescents during the immediate post-intervention/follow-up periods and identifying potential c...

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Effect of HD-tDCS targeting the DLPFC on cognitive ability and flight simulation performance in healthy adults

Xia
Zhu

2025-09-14

1
min

36
words

TDCS TACS TRNS

Summary: OBJECTIVE: This study aimed to investigate the effects of high-definition transcranial direct current stimulation (HD-tDCS) on attention, working memory, inhibitory control, and cognitive flexibility in healthy adults, and to examine its association with flight simulation performance.

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Evaluating the effects of multimodal EEG-fNIRS neurofeedback for motor imagery: An experimental platform and study protocol

Pierre
Maurel

2025-09-11

1
min

61
words

FNIRS

Summary: BACKGROUND: Neurofeedback (NF) enables the self-regulation of brain activity through real-time feedback extracted from brain measures. Recently, the combination of several neuroimaging methods to characterize brain activity has led to growing interest in NF. The integration of various portable recor...

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The Emotional and Cognitive Effects of Synchronizing to Music During Acute Exercise: An fNIRS Study



William Forde
Thompson



2025-09-12



1
min



61
words

FNIRS

Summary: Synchronizing movements to music enhances exercise performance and enjoyment, yet its short-term effects on attention and cognition remain underexplored. This study examined the influence of synchronous music, asynchronous music, and a no-music control condition on emotional responses, perceived exe...



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Interbrain Synchrony Mitigates Extremism Within Echo Chambers



Simone Shamay-
Tsoory



2025-09-12



1
min



65
words

FNIRS

Summary: People tend to engage with content that aligns with their pre-existing attitudes, forming echo chambers that reinforce biases and may amplify extremism. Here, we investigate whether discussions within homogeneous groups drive attitudinal extremity and whether interbrain synchronized activity between...




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An Empirical Study on the Impact of Different Interaction Methods on User Emotional Experience in Cultural Digital Design

 Feng
Zou

 17 2025-09-13

 1
min

 64
words

FNIRS


Summary: Traditional culture plays a vital role in shaping national identity and emotional belonging, making it imperative to explore innovative strategies for its digital preservation and engagement. This study investigates how interaction design in cultural digital games influences users' emotional experie...

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TopoTempNet: A High-Accuracy and Interpretable Decoding Method for fNIRS-Based Motor Imagery

 Zhejun
Kuang

 17 2025-09-13

 1
min

 63
words

FNIRS

Summary: Functional near-infrared spectroscopy (fNIRS) offers a safe and portable signal source for brain-computer interface (BCI) applications, particularly in motor imagery (MI) decoding. However, its low sampling rate and hemodynamic delay pose challenges for temporal modeling and dynamic brain network an...


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Compact Colocated Bimodal EEG/fNIRS Multi-Distance Sensor

 Angélique
Rascle

 2025-09-13

 1
min

 70
words

FNIRS


Summary: At present, it is a real challenge to measure brain signals outside of the lab with portable systems that are robust, comfortable and easy to use. We propose in this article a bimodal electroencephalography-functional near-infrared spectroscopy (EEG-fNIRS) sensor whose spatial geometry allows the ro...


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Do newborns detect prosodic violations in an unfamiliar language at birth?

 Judit
Gervain

 2025-09-14

 1
min

 65
words

FNIRS

Summary: Experience with language starts prenatally, as the intrauterine environment allows speech prosody to get through. Martinez-Alvarez and colleagues (2023) demonstrated that newborns detect utterance-level prosodic violations in the language they heard prenatally, French. It remains unknown, however, w...

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The sensory-motor overlap in motor imitation: evidence from motor imagery

 Shengjun
Wu

 17

2025-09-14



1
min



70
words

FNIRS

Summary: Motor imitation is crucial for acquiring motor skills and social cognition, yet the theoretical understanding of its underlying mechanism remains partial. The direct matching hypothesis suggests that the overlap between observed and executed motions is crucial for effective motor imitation. This stu...

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Your smiles inspired my smiles: the interpersonal neural coupling of positive emotion contagion during social interactions

 Yanmei
Wang

 17

2025-09-14



1
min



70
words

FNIRS


Summary: Emotional contagion refers a process that by which the emotions of a perceiver become more similar to those of others as a result of exposure to these emotions. The present study investigated the behavioral and interpersonal neural coupling mechanisms underlying positive emotional contagion. We recr...



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Abnormal Brain Activation Patterns in Patients With Post-Acute Sequelae of COVID-19 (PASC) During Recovery: A fNIRS Study

 Xiaoying Tang

 2025-09-14  1 min

 69 words

fNIRS

Summary: COVID-19 has increased the likelihood of cognitive impairment in patients with post-acute sequelae of COVID-19 (PASC). There is a lack of direct evidence regarding the working memory performance of mild patients during the recovery period. This study employed functional near-infrared spectroscopy (f...



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EEGOpt: A performance efficient Bayesian optimization framework for automated EEG signal classification

 Monisha Chakraborty

 2025-09-11  1 min

 34 words

BRAIN COMPUTER INTERFACE

Summary: CONCLUSION: EEGOpt is a scalable and interpretable framework that automatically identifies optimal signal processing and classification strategies adaptable to EEG datasets, making it a valuable tool for neuroscientific research, diagnostics, and brain-computer interface development.


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Stretchable Multilevel Mesh Brain Electrodes for Neuroplasticity in Glioma Patients Undergoing Surgery

Xue
Feng

2025-09-12

1
min

63
words

BRAIN COMPUTER INTERFACE

Summary: Brain disease surgical treatment usually leads to neurological dysfunction. Electroencephalogram (EEG)-based neuroplasticity study may facilitate patient nerve function recovery from injury, allowing a return to normal activities. Due to the limitations of wound infections and hair barrier effects, ...

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2D Vanadium Carbide/Oxide Heterostructure-Based Artificial Sensory Neuron for Multi-Color Near-Infrared Object Recognition

 Jiahong Wang

 17

2025-09-12



1 min



58 words

BRAIN COMPUTER INTERFACE

Summary: Near-infrared (NIR) photon detection and object recognition are crucial technologies for all-weather target identification in autonomous navigation, nighttime surveillance, and tactical reconnaissance. However, conventional NIR detection systems, which rely on photodetectors and von Neumann computin...

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Sequence action representations contextualize during early skill learning



Leonardo G
Cohen



2025-09-12



1
min



68
words

BRAIN COMPUTER INTERFACE

Summary: Activities of daily living rely on our ability to acquire new motor skills composed of precise action sequences. Here, we asked in humans if the millisecond-level neural representation of an action performed at different contextual sequence locations within a skill differentiates or remains stable d...



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Classification of Different Motor Imagery Tasks with the Same Limb Using Electroencephalographic Signals



Carlos Julio Tierra-
Criollo



2025-09-13



1
min



69
words

BRAIN COMPUTER INTERFACE

Summary: Stroke is a neurological condition that often results in long-term motor deficits. Given the high prevalence of motor impairments worldwide, there is a critical need to explore innovative neurorehabilitation strategies that aim to enhance the quality of life of patients. One promising approach invol...




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TopoTempNet: A High-Accuracy and Interpretable Decoding Method for fNIRS-Based Motor Imagery

 Zhejun
Kuang

 2025-09-13

 1
min

 63
words

BRAIN COMPUTER INTERFACE

Summary: Functional near-infrared spectroscopy (fNIRS) offers a safe and portable signal source for brain-computer interface (BCI) applications, particularly in motor imagery (MI) decoding. However, its low sampling rate and hemodynamic delay pose challenges for temporal modeling and dynamic brain network an...


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A new wide-scope, multi-biomarker wastewater-based epidemiology analytical method to monitor the health and well-being of inhabitants at a metropolitan scale

 Barbara Kasprzyk-Hordern

 2025-09-13

 1 min

 64 words

BRAIN COMPUTER INTERFACE

Summary: This manuscript establishes a new, comprehensive biomarker list and a multiresidue trace quantification method for community-wide health and well-being assessment at a metropolitan scale using wastewater-based epidemiology (WBE) and mass spectrometry pipelines. This method enables the quantification...

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Thalamocortical dysrhythmia-related sleep spindle desynchronization in patients with tinnitus



Yuanqing
Li



2025-09-13



1
min



68
words

BRAIN COMPUTER INTERFACE

Summary: Patients with tinnitus commonly suffer from sleep problems, and the underlying neural mechanisms remain unclear. Previous studies have focused primarily on the correlation between patients' sleep structure and tinnitus, lacking exploration into the links between sleep problems and the underlying pat...



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[tbw4049Wgf_RdKXdtNCvGW0IVBZFpHe7zaN4k4DwoD5&fc=None&ff=20250915032022&v=2.18.0.post9+e462414](https://pubmed.ncbi.nlm.nih.gov/40945543/?utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1rSUu--tbw4049Wgf_RdKXdtNCvGW0IVBZFpHe7zaN4k4DwoD5&fc=None&ff=20250915032022&v=2.18.0.post9+e462414)

Neurodevelopmental deviations in schizophrenia: Evidences from multimodal connectome-based brain ages



Huafu
Chen



2025-09-13



1
min



21
words

BRAIN COMPUTER INTERFACE

Summary: CONCLUSION: These findings from a multimodal brain age perspective suggest that advanced brain age gaps exist early in youths with schizophrenia.



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MSAttNet: Multi-scale attention convolutional neural network for motor imagery classification



Jing
Jin



2025-09-14



1
min



16
words

BRAIN COMPUTER INTERFACE

Summary: CONCLUSION: MSAttNet effectively addresses the challenges of MI-EEG datasets, improving decoding performance by robust feature extraction.



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Implicit learning of melodic structure: A role for pitch?



2024-01-22



1
min



180
words

PSYCHOMUSICOLOGY




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



Read full article:

<http://doi.org/10.1037/pmu0000303>

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

 2024-01-22  1 min  259 words

PSYCHOMUSICOLOGY

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

 **Read full article:**
<http://doi.org/10.1037/pmu0000304>

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




 2024-01-22  1 min  192 words

PSYCHOMUSICOLOGY

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

 **Read full article:**
<http://doi.org/10.1037/pmu0000302>

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




 2023-10-12  1 min  227 words

PSYCHOMUSICOLOGY

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

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

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




 2023-07-10  1 min  202 words

PSYCHOMUSICOLOGY

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

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

Capturing coordination and intentionality in joint musical improvisation.




 2023-08-03  1 min  217 words

PSYCHOMUSICOLOGY

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

 **Read full article:**
<http://doi.org/10.1037/pmu0000299>

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




 2023-04-20  1 min  252 words

PSYCHOMUSICOLOGY

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

 **Read full article:**
<http://doi.org/10.1037/pmu0000295>

Psychomusicology: A resounding closing cadence.



 2024-01-22  1 min  256 words

PSYCHOMUSICOLOGY

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

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

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




 2024-09-09  1 min  261 words

CLINICAL NEUROSCIENCE

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

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

Anomalous experiences are associated with high subconscious connectedness.

 2025-04-17  1 min  264 words

CLINICAL NEUROSCIENCE

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

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

PythonBPF – Writing eBPF Programs in Pure Python



 2025-09-12  1 min  2 words

HACKER NEWS

Summary: [Comments](https://news.ycombinator.com/item?id=45221023)

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<https://xeon.me/gnome/pythonbpf/>

Betty Crocker broke recipes by shrinking boxes

 2025-09-14  1 min  2 words

HACKER NEWS




Summary: [Comments](https://news.ycombinator.com/item?id=45243635)



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Grapevine canes can be converted into plastic-like material that will decompose

 2025-09-14  1 min  2 words

HACKER NEWS

Summary: [Comments](https://news.ycombinator.com/item?id=45243803)




Read full article:

<https://www.sdstate.edu/news/2025/08/can-grapevines-help-slow-plastic-waste-problem>

Spatial task instructions and global activation trends influence functional modularity in the cortical reach network

 1
min

 16
words


NEUROIMAGE

Summary:

Publication date: 15 October 2025

Source: Neurolmage, Volume 320


Author(s): L. Musa, A. Ghaderi, Y. Chen, J.D. Crawford

 Read full article:

https://www.sciencedirect.com/science/article/pii/S105381192500463X?dgcid=rss_sd_all

Spatiotemporal dynamics of multispectral oscillatory activity underlying the processing of negative and positive emotional images

 1
min

 41
words


NEUROIMAGE

Summary:

Publication date: 15 October 2025

Source: Neurolmage, Volume 320


Author(s): Nathan M. Petro, Mikki Schantell, Mia C. Lulli, Kellen M. McDonald, Chloe C. Casagrande, Christine M. Embury, Hannah J. Okelberry, Jason A. John, Ryan Glesinger, Lucy K. Horne, Giorgia Picci, Tony W. Wi...

 Read full article:

https://www.sciencedirect.com/science/article/pii/S1053811925004616?dgcid=rss_sd_all

Cortical visual field representation and data integration following optic neuritis

 1
min

 25
words


NEUROIMAGE

Summary:

Publication date: 15 October 2025

Source: Neurolmage, Volume 320

Author(s): Ruth Abulafia, Pieter B. de Best, Ayelet McKyton, Adi Vaknin-Dembinsky, Panayiota Petrou, Atira S. Bick, Netta Levin

 Read full article:

https://www.sciencedirect.com/science/article/pii/S1053811925004525?dgcid=rss_sd_all

CBF gradient and excitatory-inhibitory balance measured from pre-SMA – importance in aging and semantic fluency task difficulties

 1
min

 13
words

NEUROIMAGE

Summary:

Publication date: 15 October 2025

Source: Neurolmage, Volume 320


Author(s): Venkatagiri Krishnamurthy, Lisa C. Krishnamurthy

 Read full article:

https://www.sciencedirect.com/science/article/pii/S1053811925004549?dgcid=rss_sd_all

Your smiles inspired my smiles: the interpersonal neural coupling of positive emotion contagion during social interactions

 1
min

 28
words

NEUROIMAGE

Summary: <p>Publication date: 15 October 2025</p><p>Source: NeuroImage, Volume 320</p><p>Author(s): Tongtong Zhu, Jianru Bi, Linzi Wang, Zimeng Xin, Luyao Jin, Yi Zhou, Kelong Lu, Xinyue Wang, Ning Hao, Yanmei Wang</p>



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Distinct prefrontal lateralization in placebo and reappraisal mechanisms: An ALE meta-analysis

 1
min

 19
words

NEUROIMAGE



Summary: <p>Publication date: 15 October 2025</p><p>Source: NeuroImage, Volume 320</p><p>Author(s): Bianca Monachesi, Elisabetta Pisanu, Daniele Chiffi, Raffaella Ida Rumiati, Alessandro Grecucci</p>




Read full article:

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Causal contributions of left inferior and medial frontal cortex to semantic and executive control





 2025-09-12  1 min  0 words

NATURE NEUROSCIENCE SUBJECTS

 Read full article:

<https://www.nature.com/articles/s42003-025-08848-5>

This Week in The Journal

 McKeon, P.  2025-09-03  1 min  0 words



JOURNAL NEUROSCIENCE THIS WEEK

 Read full article:

<http://www.jneurosci.org/cgi/content/short/45/36/etwij45362025?rss=1>


Joint models reveal human subcortical underpinnings of choice and learning behavior

Steven MiletićNiek StevensonPierre-Louis BazinAnneke AlkemadeScott J. S. IsherwoodAnne C. TruttiDesmond H. Y. TseAsta K. HåbergBirte U. ForstmannInstitute of Psychology, Leiden University, Leiden 2333 AK, The NetherlandsbDepartment of Psychology, University of Amsterdam, Amsterdam 1018 WS, The NetherlandscFull Brain Picture Analytics, Leiden 2332 XB, The NetherlandsdDepartment of Neuropsychology and Psychopharmacology, Maastricht University, Maastricht 6211 LK, The NetherlandsDepartment of Neuromedicine and Movement Science, Norwegian University of Science and Technology, Trondheim 7030, Norway

 2025-09-05  1 min  53 words

PNAS NEUROSCIENCE



Summary: Proceedings of the National Academy of Sciences, Volume 122, Issue 36, September 2025.
SignificanceStrategic behavior requires learning and decision processes to interact. The role of subcortical regions in these processes has been demonstrated in animal research but is less well known in huma...

 Read full article:

<https://www.pnas.org/doi/abs/10.1073/pnas.2502269122?af=R>

Integrated Ising model with global inhibition for decision-making

Olga TapinovaTal FinkelmanTamar Reitich-StoleroRony PazAssaf TalNir S. GovaDepartment of Chemical and Biological Physics, Weizmann Institute of Science, Rehovot 76100, IsraelbDepartment of Brain Sciences, Weizmann Institute of Science, Rehovot 76100, IsraelcDepartment of Biomedical Engineering, Tel Aviv University, Tel Aviv 6997801, Israel

 2025-09-05  1 min  45 words


PNAS NEUROSCIENCE

Summary: Proceedings of the National Academy of Sciences, Volume 122, Issue 36, September 2025.
SignificanceThe main theoretical framework for modeling decision-making processes has been based on the highly successful drift-diffusion model. However, recent observations challenge this model, indicating ...

 Read full article:

<https://www.pnas.org/doi/abs/10.1073/pnas.2423557122?af=R>

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

 Maik
Kschischo

 2025-09-08  1 min  0 words

FRONTIERS COMPUTATIONAL NEUROSCIENCE

 Read full article:

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

Discriminative power of diverse nonlinear EEG dynamics across consciousness states during auditory stimulation in disorders of consciousness

 Fanshuo
Zeng

 17

2025-09-12



1
min



194
words

FRONTIERS HUMAN NEUROSCIENCE


Summary: Objective This study addressed the challenge of assessing consciousness in patients with disorders of consciousness (DOC) using nonlinear dynamic parameters applied to electroencephalogram (EEG) characteristics stimulated by music. Method EEG signals from 57 patients with DOC at the Rehabilitation Medi...



Read full article:

<https://www.frontiersin.org/articles/10.3389/fnhum.2025.1640520>

Aberrant static and dynamic brain functional topological organization in the differentiation of myelin oligodendrocyte glycoprotein antibody-seropositive optic neuritis from seronegative optic neuritis

 Ping
Lu

 17

2025-09-12



1
min



238
words

FRONTIERS NEUROSCIENCE

Summary: Objective An early and accurate diagnosis of myelin oligodendrocyte glycoprotein antibody seropositive optic neuritis (MOG-ON) versus seronegative-ON is critical for optimal management. We aimed to explore alterations in static and dynamic functional networks for differentiation by resting-state func...






Read full article:

<https://www.frontiersin.org/articles/10.3389/fnins.2025.1627269>

Spike-based time-domain analog weighted-sum calculation model for extremely low power VLSI implementation of multi-layer neural networks

 Takashi
Morie

 2025-09-12  1
min

 257
words


FRONTIERS NEUROSCIENCE



Summary: In deep neural network (DNN) models, the weighted summation, or multiply-and-accumulate (MAC) operation, is an essential and heavy calculation task, which leads to high power consumption in current digital processors. The use of analog operation in complementary metal-oxide-semiconductor (CMOS) very...

 Read full article:

<https://www.frontiersin.org/articles/10.3389/fnins.2025.1656892>

A review of the application of intelligent sensing technology in the recognition and evaluation of facial paralysis


 Chao
Wang

 2025-09-12  1
min

 191
words


FRONTIERS NEUROSCIENCE


Summary: Facial paralysis (FP), as a highly prevalent neurological dysfunction disease worldwide, has long faced challenges such as strong subjectivity in assessment and difficulty in quantifying therapeutic effects in its clinical diagnosis and treatment. Traditional scales rely on physicians' experience. N...

 Read full article:


<https://www.frontiersin.org/articles/10.3389/fnins.2025.1646485>

Inhibiting JNK and PI3K-Akt signaling pathways altered spontaneous network bursts and developmental trajectories of neuronal networks

 Xiaoli Jia, Qiuyan Zhu, Hailin Lu, Zhihong Zhou, Tahir Ali, Shupeng Li and Jinxing Feng

 2025-09-10

 1
min

 239
words

JOURNAL NEURAL ENGINEERING

Summary: Objective. Spontaneous network bursts (NBs) are critical for neuronal circuit development, influencing synaptogenesis and functional organization. While JNK and PI3K-Akt signaling pathways are known to regulate synaptic plasticity, their specific roles in governing NBs dynamics and functional network...

 Read full article:


<http://iopscience.iop.org/article/10.1088/1741-2552/ae01db>

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

 Maria Carla Piastra

 2024-06-14

 1
min

 64
words

OOSTENVELD ROBERT


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

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

 Julius
Welzel

 17 2024-07-02

 1
min

 72
words

OOSTENVELD ROBERT


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


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One hundred years of EEG for brain and behaviour research

 Pedro Valdes-
Sosa

 17 2024-08-22

 1
min

 2
words

OOSTENVELD ROBERT

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[utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1BUB2BG5RbxOblm-hBbiJWEhGG43qIVrvGNHOTqBKva9wWrltM&fc=None&ff=20250915023136&v=2.18.0.post9+e462414](https://pubmed.ncbi.nlm.nih.gov/39174725/?utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1BUB2BG5RbxOblm-hBbiJWEhGG43qIVrvGNHOTqBKva9wWrltM&fc=None&ff=20250915023136&v=2.18.0.post9+e462414)

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



Richard J A van
Wezel



2024-09-04



1
min



65
words

OOSTENVELD ROBERT

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



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



Krzysztof J
Gorgolewski



2024-09-23



1
min



82
words

OOSTENVELD ROBERT

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



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

Fanny
Quandt

17 2025-01-09

1
min

65
words

OOSTENVELD ROBERT

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

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

Luca
Pollonini

17 2025-01-27

1
min

70
words

OOSTENVELD ROBERT


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


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

 Lyuba
Zehl

 2025-06-26

 1
min

 67
words

OOSTENVELD ROBERT

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


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

 Tim M
Tierney

 2025-08-13

 1
min

 74
words

OOSTENVELD ROBERT


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


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Optimal configuration of on-scalp OPMs with fixed channel counts

 Robert
Oostenveld

 2025-08-13  1
min

 69
words

OOSTENVELD ROBERT


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



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A Stereo Synchronization Method for Consumer-Grade Video Cameras to Measure Multi-Target 3D Displacement Using Image Processing in Shake Table Experiments

 Yuan-Sen
Yang

 2025-09-13  1
min

 63
words

LOW VISION

Summary: The use of consumer-grade cameras for stereo vision provides a cost-effective, non-contact method for measuring three-dimensional displacement in civil engineering experiments. However, obtaining accurate 3D coordinates requires accurate temporal alignment of several unsynchronized cameras, which is...

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Real-Time Driver Attention Detection in Complex Driving Environments via Binocular Depth Compensation and Multi-Source Temporal Bidirectional Long Short-Term Memory Network



Huajie
Liu



2025-09-13



1
min



62
words

LOW VISION

Summary: Driver distraction is a key factor contributing to traffic accidents. However, in existing computer vision-based methods for driver attention state recognition, monocular camera-based approaches often suffer from low accuracy, while multi-sensor data fusion techniques are compromised by poor real-ti...



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Tracking-Based Denoising: A Trilateral Filter-Based Denoiser for Real-World Surveillance Video in Extreme Low-Light Conditions



Chen

Lv



17

2025-09-13



1

min



75

words

LOW VISION

Summary: Video denoising in extremely low-light surveillance scenarios is a challenging task in computer vision, as it suffers from harsh noise and insufficient signal to reconstruct fine details. The denoising algorithm for these scenarios encounters challenges such as the lack of ground truth, and the nois...

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A Unified Preprocessing Pipeline for Noise-Resilient Crack Segmentation in Leaky Infrastructure Surfaces



Jeongho

Cho



17

2025-09-13



1

min



67


words


LOW VISION

Summary: Wet cracks caused by leakage often exhibit visual and structural distortions due to surface contamination, salt crystallization, and corrosion byproducts. These factors significantly degrade the performance of sensor- and vision-based crack detection systems. In moist environments, the initiation an...


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U-ResNet, a Novel Network Fusion Method for Image Classification and Segmentation

 Yaqing
Song

 2025-09-13

 1
min

 65
words

LOW VISION


Summary: Image classification and segmentation are important tasks in computer vision. ResNet and U-Net are representative networks for image classification and image segmentation, respectively. Although many scholars used to fuse these two networks, most integration focuses on image segmentation with U-Net,...


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Serum Vitamin D Levels as Predictors of Response to Intravitreal Anti-VEGF Therapy in Diabetic Macular Edema: A Clinical Correlation Study

 Ana Maria
Stoica

 2025-09-13

 1
min

 66
words

LOW VISION


Summary: Our study explored the role of serum 25-hydroxyvitamin D [25(OH)D] levels as an indicator of response to intravitreal anti-vascular endothelial growth factor (anti-VEGF) therapy in patients with diabetic macular edema (DME), highlighting functional and anatomical outcomes linked to systemic biomarkers...

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Visual Outcomes of a Non-Diffractive Extended Depth-of-Focus Intraocular Lens in Patients with Early-Stage Age-Related Macular Degeneration

 Celia Sánchez-Ramos



2025-09-13



1
min



66
words

LOW VISION

Summary: Background/Objectives: Age-related macular degeneration (AMD) is a leading cause of visual impairment in older adults and often coexists with cataracts. The indication of presbyopia-correcting intraocular lenses (IOLs) in these patients remains controversial. This study aimed to evaluate the clinica...




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
[utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1xePBFBNvSlegfqCbvp45N3V9WgCNCS63Z1PLmhwJSPGd18QMT&fc=None&ff=20250915023133&v=2.18.0.post9+e462414](https://pubmed.ncbi.nlm.nih.gov/40943713/?utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1xePBFBNvSlegfqCbvp45N3V9WgCNCS63Z1PLmhwJSPGd18QMT&fc=None&ff=20250915023133&v=2.18.0.post9+e462414)

Use of Mechanical Enhanced Colonoscopy to Improve Polyp Detection During Colorectal Cancer Screening: A Real-World Healthcare Database Analysis

 Seth A
Gross

 2025-09-13

 1
min

 71
words

LOW VISION


Summary: Introduction: High performance colonoscopy requires the monitoring of an individual's adenoma detection rate (ADR). The Endocuff (EndoCuff Vision, Olympus America Inc., Center Valley, PA, USA) is an endoscopic distal attachment device that increases surface area exposure during colonoscopy. While st...

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Metabolic alterations in diabetic patients: aqueous humor profiling for biomarker discovery

 Guna
Laganovska

 2025-09-13

 1
min

 64
words

LOW VISION


Summary: Diabetic retinopathy, a leading cause of vision loss in working-age populations, is a severe complication of diabetes mellitus. Metabolomics, a key approach in systems biology, offers insights into the complex pathophysiology of diabetes by analyzing low-molecular-weight compounds in biological cont...


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Evaluating the predictive potential of Th1 (IFN- γ +/CD4+/CD4+/CD4+ in rapidly progressive amyotrophic lateral sclerosis

 Hao Zhang

 2025-09-14

 1 min

 31 words

LOW VISION


Summary: CONCLUSIONS: Th1/CD4⁺ (with an optimal cutoff value of 16.21) was established as an independent risk factor for rapid progression in ALS. The machine learning model incorporating Th1/CD4⁺ demonstrated strong predictive performance.


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My Broken Heart

 Ashley C Rider

 2025-05-08

 1 min

 34 words

TACTILE ACUITY


Summary: AUDIENCE: The target audience for the key learning objectives of this Left-Ventricular Assist Device (LVAD) simulation are emergency medicine residents. Other team members such as attendings, nurses, pharmacists, and technicians could potentially be integrated.

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Distributions of orofacial two-point discrimination threshold: A cross-sectional study in healthy population and patients with pain-related temporomandibular disorders

 Xin
Xiong

 17 2025-05-15

 1
min

 70
words

TACTILE ACUITY

Summary: CONCLUSION: Pain-related TMDs patients had weaker orofacial tactile acuity, which was consistent in gender subgroups, except for the temporal region of males. Healthy males had weaker tactile acuity compared to females in TMJ and temporal regions. No significant gender effect on orofacial tactile ac...

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

 Thomas Hummel

 2025-05-28  1 min  70 words


TACTILE ACUITY

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

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

 Hiroyuki Kajimoto

 2025-06-17  1 min  75 words

TACTILE ACUITY


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

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

 Leah R
Bent

 2025-06-27

 1
min

 69
words

TACTILE ACUITY


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


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Directional vibro-tactile hazard warnings for drivers with vision impairments

 Alex R
Bowers

 2025-07-02

 1
min

 80
words

TACTILE ACUITY


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



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

 Cecilia
Guariglia

 2025-08-01  1
min

 64
words

TACTILE ACUITY

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



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

 Eric
Fjeldheim

 2025-08-24  1
min

 22
words

TACTILE ACUITY


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


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

 Paula Anne Newman-Casey

 2025-09-09

 1 min

 74 words


TACTILE ACUITY


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

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

 Sviatoslav N Bagriantsev

 2025-09-13

 1 min

 58 words

TACTILE ACUITY

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

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WAYVision: A hybrid deep learning approach for recognizing handwritten Kannada Braille using wavelet transformation and attention based YOLOv5



Shobha Rani

N



2025-08-25



1

min



64

words

BRAILLE

Summary: Handwritten Braille character recognition presents a significant challenge in the field of assistive technology, especially with the inclusion of various linguistic scripts such as Kannada. The data set is uniquely curated, combining ground-truth data from Kaggle and real-world samples collected fro...




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

 Joseph Paul
Nemargut



2025-08-25



1

min



62

words

BRaille

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




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

 Jianming
Xu



2025-08-25



1

min



62

words

BRaille

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





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

 Million
Phiri

 2025-08-26  1
min

 46
words

BRAILLE


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



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Explosion-powered eversible tactile displays

 Robert F
Shepherd

 2025-08-27  1
min

 64
words

BRAILLE

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


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

 Zhijun
Ma

 2025-08-28

 1
min

 57
words

BRAILLE


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



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

 Min
Zhang

 2025-08-28

 1
min

 64
words

BRAILLE

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



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



Hao
Lin



2025-09-01



1
min



72
words

BRAILLE

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



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



Ji
Liu



2025-09-02



1
min



56
words

BRAILLE

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

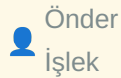


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Beyond access: rethinking assistive technology for individuals with visual impairments in Türkiye



2025-09-12

1
min55
words

BRAILLE

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



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Personalized High-Definition Transcranial Direct Current Stimulation for the Treatment of Depression: A Randomized Clinical Trial

Katherine
Narr

2025-09-11

1
min66
words

TDCS TACS TRNS


Summary: CONCLUSIONS AND RELEVANCE: In this randomized clinical trial of HD-tDCS in participants with moderate to severe depression, the 12-day HD-tDCS therapy was observed to significantly improve mood with a moderate effect size. Similar effect sizes in pharmacotherapy, psychotherapy, and conventional tDCS...




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Effect of theta-transcranial alternating current stimulation on working memory performance among healthy adults: A systematic review and meta-analysis

 Rui-Ke
Zhang

 2025-09-11

 1
min

 27
words

TDCS TACS TRNS

Summary: CONCLUSION: Theta-tACS enhances working memory in healthy adults, with effects modulated by the task type and protocol parameters, offering dual implications for cognitive enhancement and clinical interventions.


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Review of nonpharmacological interventions for delaying the effects of cerebral neuropathy caused by diabetes

 Lun-De
Liao

 2025-09-12

 1
min

 67
words

TDCS TACS TRNS


Summary: Diabetic peripheral neuropathy (DPN) is a debilitating complication of diabetes that affects nearly half of diabetic patients and manifests as chronic pain, sensory loss, and motor dysfunction. The limited efficacy of traditional pharmacological treatments, coupled with their side effects, has inten...



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Online HD-tRNS over the right temporoparietal junction modulates social inference but not motor coordination


 Guillaume
Dumas

 2025-09-12  1
min

 68
words

TDCS TACS TRNS


Summary: Social interactions are fundamental to human cognition, with the right temporoparietal junction (rTPJ) playing a key role in integrating motor coordination and social inference. While transcranial random noise stimulation (tRNS) is a promising technique for modulating cortical excitability in real t...



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Neural Correlates of Borderline Personality Disorder (BPD) Based on Electroencephalogram (EEG)-A Mechanistic Review

 Donata
Kurpas

 2025-09-13  1
min

 62
words

TDCS TACS TRNS


Summary: Borderline Personality Disorder (BPD) is marked by emotional dysregulation, instability in self-image and relationships, and high impulsivity. While functional magnetic resonance imaging (fMRI) studies have provided valuable insights into the disorder's neural correlates, electroencephalography (EEG...


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Burnout and the Brain-A Mechanistic Review of Magnetic Resonance Imaging (MRI) Studies

 Donata Kurpas


 2025-09-13

 1 min

 64 words

TDCS TACS TRNS


Summary: Occupational burnout is ubiquitous yet still debated as a disease entity. Previous reviews surveyed multiple biomarkers but left their neural substrate unclear. We therefore asked: What, if any, reproducible magnetic-resonance signature characterises burnout? Following PRISMA principles adapted for ...


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From Immediate Impact to Enduring Change: A Transcriptomic Comparison of tDCS's Temporal Effects and Its Long-Term Equivalence with TMS

 Hanoch Kaphzan

 2025-09-13

 1 min

 63 words

TDCS TACS TRNS

Summary: Transcranial Direct Current Stimulation (tDCS) and Transcranial Magnetic Stimulation (TMS) are neuromodulatory techniques with therapeutic potential for similar disorders; however, their molecular effects require further elucidation, and whether both strategies work in similar biological pathways is...

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General Innovations in Pain Management

 Alaa Abd-
Elsayed

 17

2025-09-13

 1
min

 74
words

TDCS TACS TRNS


Summary: Chronic pain management is constantly evolving, and our literature review aims to describe the general innovations happening within the field. The need for advancements in chronic pain is a necessity, as debilitating back pain and other forms of chronic pain are significant issues in the United Stat...


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Behavioral outcomes after tDCS treatment during immediate post-intervention and follow-up periods in children and adolescents diagnosed with attention-deficit/hyperactivity disorder: a systematic review and meta-analysis on randomized sham-controlled trials

 Kuo-Chuan
Hung

 2025-09-13

 1
min

 58
words

TDCS TACS TRNS

Summary: This meta-analysis aimed at elucidating the effectiveness of transcranial direct current stimulation (tDCS) in improving behavioral symptoms of attention deficit/hyperactivity disorder (ADHD) in children/adolescents during the immediate post-intervention/follow-up periods and identifying potential c...

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Effect of HD-tDCS targeting the DLPFC on cognitive ability and flight simulation performance in healthy adults

Xia
Zhu

2025-09-14

1
min

36
words

TDCS TACS TRNS

Summary: OBJECTIVE: This study aimed to investigate the effects of high-definition transcranial direct current stimulation (HD-tDCS) on attention, working memory, inhibitory control, and cognitive flexibility in healthy adults, and to examine its association with flight simulation performance.

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Evaluating the effects of multimodal EEG-fNIRS neurofeedback for motor imagery: An experimental platform and study protocol

Pierre
Maurel

2025-09-11

1
min

61
words

FNIRS

Summary: BACKGROUND: Neurofeedback (NF) enables the self-regulation of brain activity through real-time feedback extracted from brain measures. Recently, the combination of several neuroimaging methods to characterize brain activity has led to growing interest in NF. The integration of various portable recor...

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The Emotional and Cognitive Effects of Synchronizing to Music During Acute Exercise: An fNIRS Study



William Forde
Thompson



2025-09-12



1
min



61
words

FNIRS

Summary: Synchronizing movements to music enhances exercise performance and enjoyment, yet its short-term effects on attention and cognition remain underexplored. This study examined the influence of synchronous music, asynchronous music, and a no-music control condition on emotional responses, perceived exe...



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Interbrain Synchrony Mitigates Extremism Within Echo Chambers



Simone Shamay-
Tsoory



2025-09-12



1
min



65
words

FNIRS

Summary: People tend to engage with content that aligns with their pre-existing attitudes, forming echo chambers that reinforce biases and may amplify extremism. Here, we investigate whether discussions within homogeneous groups drive attitudinal extremity and whether interbrain synchronized activity between...





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An Empirical Study on the Impact of Different Interaction Methods on User Emotional Experience in Cultural Digital Design

 Feng
Zou

 17 2025-09-13  1
min

 64
words

FNIRS


Summary: Traditional culture plays a vital role in shaping national identity and emotional belonging, making it imperative to explore innovative strategies for its digital preservation and engagement. This study investigates how interaction design in cultural digital games influences users' emotional experie...



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TopoTempNet: A High-Accuracy and Interpretable Decoding Method for fNIRS-Based Motor Imagery

 Zhejun
Kuang

 17 2025-09-13  1
min

 63
words

FNIRS

Summary: Functional near-infrared spectroscopy (fNIRS) offers a safe and portable signal source for brain-computer interface (BCI) applications, particularly in motor imagery (MI) decoding. However, its low sampling rate and hemodynamic delay pose challenges for temporal modeling and dynamic brain network an...


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Compact Colocated Bimodal EEG/fNIRS Multi-Distance Sensor

 Angélique
Rasclé

 2025-09-13

 1
min

 70
words

FNIRS


Summary: At present, it is a real challenge to measure brain signals outside of the lab with portable systems that are robust, comfortable and easy to use. We propose in this article a bimodal electroencephalography-functional near-infrared spectroscopy (EEG-fNIRS) sensor whose spatial geometry allows the ro...


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Do newborns detect prosodic violations in an unfamiliar language at birth?

 Judit
Gervain

 2025-09-14

 1
min

 65
words

FNIRS

Summary: Experience with language starts prenatally, as the intrauterine environment allows speech prosody to get through. Martinez-Alvarez and colleagues (2023) demonstrated that newborns detect utterance-level prosodic violations in the language they heard prenatally, French. It remains unknown, however, w...

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The sensory-motor overlap in motor imitation: evidence from motor imagery

 Shengjun
Wu

 17

2025-09-14



1
min



70
words

FNIRS

Summary: Motor imitation is crucial for acquiring motor skills and social cognition, yet the theoretical understanding of its underlying mechanism remains partial. The direct matching hypothesis suggests that the overlap between observed and executed motions is crucial for effective motor imitation. This stu...

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Your smiles inspired my smiles: the interpersonal neural coupling of positive emotion contagion during social interactions

 Yanmei
Wang

 17

2025-09-14



1
min



70
words

FNIRS


Summary: Emotional contagion refers a process that by which the emotions of a perceiver become more similar to those of others as a result of exposure to these emotions. The present study investigated the behavioral and interpersonal neural coupling mechanisms underlying positive emotional contagion. We recr...



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Abnormal Brain Activation Patterns in Patients With Post-Acute Sequelae of COVID-19 (PASC) During Recovery: A fNIRS Study

 Xiaoying Tang

 2025-09-14  1 min

 69 words

fNIRS

Summary: COVID-19 has increased the likelihood of cognitive impairment in patients with post-acute sequelae of COVID-19 (PASC). There is a lack of direct evidence regarding the working memory performance of mild patients during the recovery period. This study employed functional near-infrared spectroscopy (f...

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EEGOpt: A performance efficient Bayesian optimization framework for automated EEG signal classification

 Monisha Chakraborty

 2025-09-11  1 min

 34 words

BRAIN COMPUTER INTERFACE

Summary: CONCLUSION: EEGOpt is a scalable and interpretable framework that automatically identifies optimal signal processing and classification strategies adaptable to EEG datasets, making it a valuable tool for neuroscientific research, diagnostics, and brain-computer interface development.


 **Read full article:**

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Stretchable Multilevel Mesh Brain Electrodes for Neuroplasticity in Glioma Patients Undergoing Surgery

Xue
Feng


2025-09-12

1
min

63
words

BRAIN COMPUTER INTERFACE

Summary: Brain disease surgical treatment usually leads to neurological dysfunction. Electroencephalogram (EEG)-based neuroplasticity study may facilitate patient nerve function recovery from injury, allowing a return to normal activities. Due to the limitations of wound infections and hair barrier effects, ...

 **Read full article:**

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2D Vanadium Carbide/Oxide Heterostructure-Based Artificial Sensory Neuron for Multi-Color Near-Infrared Object Recognition

 Jiahong Wang

 17

2025-09-12



1

min



58

words

BRAIN COMPUTER INTERFACE

Summary: Near-infrared (NIR) photon detection and object recognition are crucial technologies for all-weather target identification in autonomous navigation, nighttime surveillance, and tactical reconnaissance. However, conventional NIR detection systems, which rely on photodetectors and von Neumann computin...

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Sequence action representations contextualize during early skill learning



Leonardo G
Cohen



2025-09-12



1
min



68
words

BRAIN COMPUTER INTERFACE

Summary: Activities of daily living rely on our ability to acquire new motor skills composed of precise action sequences. Here, we asked in humans if the millisecond-level neural representation of an action performed at different contextual sequence locations within a skill differentiates or remains stable d...



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[tbw4049Wgf_RdKXdtNCvGW0IVBZFpHe7zaN4k4DwoD5&fc=None&ff=20250915023115&v=2.18.0.post9+e462414](https://pubmed.ncbi.nlm.nih.gov/40938318/?utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1rSUu--tbw4049Wgf_RdKXdtNCvGW0IVBZFpHe7zaN4k4DwoD5&fc=None&ff=20250915023115&v=2.18.0.post9+e462414)

Classification of Different Motor Imagery Tasks with the Same Limb Using Electroencephalographic Signals



Carlos Julio Tierra-
Criollo



2025-09-13



1
min



69
words

BRAIN COMPUTER INTERFACE

Summary: Stroke is a neurological condition that often results in long-term motor deficits. Given the high prevalence of motor impairments worldwide, there is a critical need to explore innovative neurorehabilitation strategies that aim to enhance the quality of life of patients. One promising approach invol...




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[tbw4049Wgf_RdKXdtNCvGW0IVBZFpHe7zaN4k4DwoD5&fc=None&ff=20250915023115&v=2.18.0.post9+e462414](https://pubmed.ncbi.nlm.nih.gov/40942721/?utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1rSUu--tbw4049Wgf_RdKXdtNCvGW0IVBZFpHe7zaN4k4DwoD5&fc=None&ff=20250915023115&v=2.18.0.post9+e462414)

TopoTempNet: A High-Accuracy and Interpretable Decoding Method for fNIRS-Based Motor Imagery

 Zhejun
Kuang

 17

2025-09-13



1
min



63
words

BRAIN COMPUTER INTERFACE

Summary: Functional near-infrared spectroscopy (fNIRS) offers a safe and portable signal source for brain-computer interface (BCI) applications, particularly in motor imagery (MI) decoding. However, its low sampling rate and hemodynamic delay pose challenges for temporal modeling and dynamic brain network an...


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A new wide-scope, multi-biomarker wastewater-based epidemiology analytical method to monitor the health and well-being of inhabitants at a metropolitan scale

 Barbara Kasprzyk-Hordern

 2025-09-13  1 min  64 words

BRAIN COMPUTER INTERFACE

Summary: This manuscript establishes a new, comprehensive biomarker list and a multiresidue trace quantification method for community-wide health and well-being assessment at a metropolitan scale using wastewater-based epidemiology (WBE) and mass spectrometry pipelines. This method enables the quantification...

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Thalamocortical dysrhythmia-related sleep spindle desynchronization in patients with tinnitus



Yuanqing
Li



2025-09-13



1
min



68
words

BRAIN COMPUTER INTERFACE

Summary: Patients with tinnitus commonly suffer from sleep problems, and the underlying neural mechanisms remain unclear. Previous studies have focused primarily on the correlation between patients' sleep structure and tinnitus, lacking exploration into the links between sleep problems and the underlying pat...



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Neurodevelopmental deviations in schizophrenia: Evidences from multimodal connectome-based brain ages



Huafu
Chen



2025-09-13



1
min



21
words

BRAIN COMPUTER INTERFACE

Summary: CONCLUSION: These findings from a multimodal brain age perspective suggest that advanced brain age gaps exist early in youths with schizophrenia.



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MSAttNet: Multi-scale attention convolutional neural network for motor imagery classification



Jing
Jin



2025-09-14



1
min



16
words

BRAIN COMPUTER INTERFACE

Summary: CONCLUSION: MSAttNet effectively addresses the challenges of MI-EEG datasets, improving decoding performance by robust feature extraction.



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



2024-07-11



1
min



249
words

CLINICAL NEUROSCIENCE




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



Read full article:

<http://doi.org/10.1037/cns0000397>

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


 2025-07-31  1 min  268 words

CLINICAL NEUROSCIENCE

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

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

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



 2024-12-05  1 min  98 words

CLINICAL NEUROSCIENCE

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

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

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

 2023-12-21  1 min  193 words

CLINICAL NEUROSCIENCE

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

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

Mechanistic pathways of acceptance: An experimental study.

 2023-08-17  1 min  177 words

CLINICAL NEUROSCIENCE

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

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

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



2022-11-10

1
min175
words

CLINICAL NEUROSCIENCE

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



Read full article:

<http://doi.org/10.1037/cns0000344>

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



2023-08-21

1
min198
words

CLINICAL NEUROSCIENCE




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



Read full article:

<http://doi.org/10.1037/cns0000366>

Mental pain, boredom, and diffuse nociception.

 2024-11-21  1 min  237 words

CLINICAL NEUROSCIENCE

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

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

Field usability and validity of eye-tracking instrumentation with the Early Childhood Vigilance Test among children aged 2–4 years old in Northern Coastal Ecuador.

 2025-03-31  1 min  225 words

NEUROPSYCHOLOGY

Summary: Objective: There is a need for effective cognitive assessment tools to evaluate the development of very young children in resource-limited low- and middle-income country settings. Our objective was to evaluate the field usability of a computer-based attention test and its concurrent validity with a ...

 Read full article:
<http://doi.org/10.1037/neu0001012>

I made a terminal-based game that uses LLMs -- Among LLMs: You are the Impostor

/u/
Foreign_Radio8864

17 2025-09-15

1
min

256
words

REDDIT PYTHON

Summary: <!-- SC_OFF --><div class="md"><p>I made this game in Python (that uses Ollama and local <code>gpt-oss:20b</code> / <code>gpt-oss:120b</code> models) that runs directly inside your terminal. TL;DR at the end.</p> <blockquote><p>Among LLMs turns your terminal into a...

 Read full article:

[https://www.reddit.com/r/Python/comments/1nhdt04/
i_made_a_terminalbased_game_that_uses_llms_among/](https://www.reddit.com/r/Python/comments/1nhdt04/i_made_a_terminalbased_game_that_uses_llms_among/)

I was terrible at studying so I made a Chrome extension that forces you to learn programming.

/u/
MaxDev0

17 2025-09-14

5
min

1129
words



REDDIT PYTHON

Summary: <!-- SC_OFF --><div class="md"><p>tldr; I made a free, open-source Chrome extension that helps you study by showing you flashcards while you browse the web. Its algorithm uses spaced repetition and semantic analysis to target your weaknesses and help you learn faster. It started as an SAT tool, but ...

 Read full article:

https://www.reddit.com/r/Python/comments/1nh3rlv/i_was_terrible_at_studying_so_i_made_a_chrome/

Omarchy on CachyOS

 2025-09-15  1 min  2 words





HACKER NEWS

Summary: [Comments](https://news.ycombinator.com/item?id=45246325)

 Read full article:

<https://github.com/mroboff/omarchy-on-cachyos>

Americans Crushed by Auto Loans as Defaults and Repossessions Surge

 toomuchtodo  2025-09-15  1 min  13 words

HACKER NEWS

Summary:





Article URL: <https://www.carscoops.com/2025/09/auto-loan-delinquencies-are-off-the-dial-and-even-prime-borrowers-are-struggling/>

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Celestia – real-time 3D visualization of space

 LordNibbler  2025-09-15  1 min  13 words HACKER NEWS


Summary:

Article URL: <https://celestiaproject.space/>

Comments URL: <https://news.ycombinator.com/item?id=45246403>

Points: 5

Comments: 0

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<https://celestiaproject.space/>

From the past to the future: The influence of early social deprivation on learning and behavioral development through programming

 1 min  55 words BRAIN RESEARCH

Summary:

Publication date: 1 November 2025


Source: Brain Research, Volume 1866

Author(s): Caio Matheus Santos da Silva Calado, Raul Manhães-de-Castro, Henrique José Cavalcanti Bezerra Gouveia, Renata Maria Toscano Barreto Lyra Nogueira, Vanessa da Silva Souza, Augusto Vagner Soares Mart...

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https://www.sciencedirect.com/science/article/pii/S0006899325004871?dgcid=rss_sd_all

Predicting infant vocabulary from neural connectivity and maternal speech: A machine learning approach

 1
min

 33
words

BRAIN RESEARCH

Summary:

Publication date: 1 November 2025

Source: Brain Research, Volume 1866


Author(s): Brigitta Tóth, Gábor P. Háden, Ildikó Tóth, Krisztina Lakatos, Anna Kohári, Katalin Mády, Bence Kas, Dénes Tóth, Ádám Szalontai, Uwe D. Reichel, István Winkler

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Hormonal contraceptive use and type matter: Distinct cortisol patterns and cortisol-mood relations

 1
min

 20
words

NEUROSCIENCE JOURNAL

Summary:

Publication date: 15 October 2025

Source: Neuroscience, Volume 585


Author(s): Ally H. Villeneuve, Ayeila Z.B. Daneshmend, Dana A. Jarkas, Robyn J. McQuaid

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https://www.sciencedirect.com/science/article/pii/S0306452225009029?dgcid=rss_sd_all

Impact of endogenous *vasohibin 1* and *vasohibin 2* gene expression on ferroptosis in a mouse cerebral infarction model

 1
min

 33
words

NEUROSCIENCE JOURNAL

Summary:

Publication date: 15 October 2025

Source: Neuroscience, Volume 585

Author(s): Hongming Sun, Xinran Hu, Zhihong Bian, Haibo Yu, Yuting Bian, Ricardo Satoshi Ota-Elliott, Hangping An, Zhihong Liu, Ryuta Morihara, Yusuke Fukui, Hiroyuki Ishiura, Toru Yamashita

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Age-related hearing loss and dementia risk across the lifespan: mechanisms, equity, and prevention

 1
min

 11
words

NEUROSCIENCE JOURNAL

Summary:

Publication date: 15 October 2025


Source: Neuroscience, Volume 585


Author(s): David G. Loughrey

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https://www.sciencedirect.com/science/article/pii/S0306452225009042?dgcid=rss_sd_all


Dysregulation of energy metabolism and calcium homeostasis in iPSC-derived neurons carrying Presenilin-1 M146L gene mutation

 Wilson, C., Galeano, P., Remedi, M. M., Novack, G. V., Campanelli, L., Gastaldi, L., Miglietta, E. A., Rossi, A. H., Olivar, N., Brusco, L. I., Castano, E. M., Caceres, A., Morelli, L.

 2025-09-14  1 min  174 words


BIORXIV NEUROSCIENCE

Summary: Impaired cellular activities, particularly in highly active cells such as neurons, are primarily supported by metabolic abnormalities and failures in Ca^{2+} homeostasis. Here, we provide an integrative analysis of human iPSC-derived neurons (iNs) carrying the Presenilin-1 M146L gene mutation (PS1M146...

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<https://www.biorxiv.org/content/10.1101/2025.09.08.674945v1?rss=1>

Maximized field-of-view deep-brain calcium imaging through gradient-index lenses

 Wang, C., Cheng, Z., Li, Y., Lin, J., Cui, M.

 2025-09-14  1 min  163 words


BIORXIV NEUROSCIENCE

Summary: Advances in genetically encoded fluorescent indicators have enabled increasingly sensitive optical recordings of neural activity. However, light scattering in the mammalian brain tissue restricts optical access to deeper regions. To address this limitation, researchers often employ implanted gradien...

 Read full article:

<https://www.biorxiv.org/content/10.1101/2025.09.08.674926v1?rss=1>

Granularity of thalamic head direction cells

 Hijazi, S., Jiang, S., Wülfing, M. S., Quach, J., LaChance, P. A., Hasselmo, M. E., Viney, T. J.

 2025-09-14  1 min  215 words


BIORXIV NEUROSCIENCE



Summary: Head direction signaling is fundamental for spatial orientation and navigation. The anterodorsal nucleus of the thalamus (ADn) contains a high density of head direction (HD) cells that process sensorimotor inputs for subsequent synaptic integration in postsynaptic cortical areas. We tested the hypot...


 Read full article:

<https://www.biorxiv.org/content/10.1101/2025.09.08.674912v1?rss=1>

Stage-specific extracellular vesicle cargo from Schwann cells orchestrates peripheral nerve regeneration


 Sharma, M., Kongsomros, S., Sheth, M., Chutipongtanate, S., Esfandiari, L.

 2025-09-14  1 min

 152 words

BIORXIV NEUROSCIENCE

Summary: Schwann cells (SCs) play a critical role in peripheral nerve regeneration, undergoing dynamic phenotype transitioning from myelinating to repair stages following injury. While SC-derived extracellular vesicles (SC-EVs) have emerged as key mediators of intercellular communication during nerve repair,...

 Read full article:

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Microglia-to-neuron signaling links APOE4 and inflammation to enhanced neuronal lipid metabolism and network activity

Ana P. Verduzco EspinozaNa NaLoraine CampanatiPriscilla NgoKristin K. BaldwinHollis T.



ClineaDepartment of Neuroscience, The Scripps Research Institute, San Diego, CA

92037bDepartment of Genetics and Development, Columbia Stem Cell Initiative, Columbia University Medical Center, New York, NY 10032



2025-09-08



1
min



43
words

PNAS NEUROSCIENCE

Summary: Proceedings of the National Academy of Sciences, Volume 122, Issue 37, September 2025.
SignificanceMicroglia impact neuronal function, evident by neuroinflammation's role in neurodegenerative diseases, including Alzheimer's disease (AD).APOE4, the strongest genetic risk factor for AD, alters m...



Read full article:

<https://www.pnas.org/doi/abs/10.1073/pnas.2516103122?af=R>

Spontaneous glutamate release activates mGluR signaling to drive rapid antidepressant responses

Clara I. McCarthyZ. Zack MaLisa M. MonteggiaEge T. KavalaliaVanderbilt Brain Institute, Vanderbilt University, Nashville, TN 37240bDepartment of Pharmacology, Vanderbilt University, Nashville, TN 37240



2025-09-09



1
min



46
words

PNAS NEUROSCIENCE

Summary: Proceedings of the National Academy of Sciences, Volume 122, Issue 37, September 2025.
SignificanceThis study provides insights into the nanoscale organization of calcium signaling in dendritic spines and its implications for both synaptic plasticity and rapid antidepressant effects. Distinct ...






Read full article:

<https://www.pnas.org/doi/abs/10.1073/pnas.2510642122?af=R>

Distinct prelimbic cortex ensembles encode response execution and inhibition

Rajtarun MadangopalYuan ZhaoConor HeinsJingfeng ZhouBo LiangGiovanni BarberaKa Chun LamLauren E. KomerSophia J. WeberDrake J. ThompsonYugantar GeraDiana Q. PhamKatherine E. SavellBrandon L. WarrenDaniele CaprioliMarco VenniroJennifer M. BossertLeslie A. RamseyHank P. JedemaGeoffrey SchoenbaumDa-Ting LinYavin ShahamFrancisco PereiraBruce T. HopeaBehavioral Neuroscience Research Branch, Intramural Research Program, National Institute on Drug Abuse, Baltimore, MD 21224bMachine Learning Core, Intramural Research Program, National Institute of Mental Health, Bethesda, MD 20892cCellular and Neurocomputational Systems Branch, Intramural Research Program, National Institute on Drug Abuse, Baltimore, MD 21224

 2025-09-08  1 min  46 words

PNAS NEUROSCIENCE

Summary: Proceedings of the National Academy of Sciences, Volume 122, Issue 37, September 2025.
SignificanceUntil recently, the question of how neuronal ensembles support behavioral flexibility in the face of changing contingencies has remained unanswered. Using longitudinal single-cell calcium imaging...




Read full article:

<https://www.pnas.org/doi/abs/10.1073/pnas.2505378122?af=R>

Excitatory glycine receptors control ventral hippocampus synaptic plasticity and anxiety-related behaviors

Lara PizzamiglioElise MoriceCécile CardosoSimon BossiCaroline Mailhes-HamonMoritz von HeimendahlGabrielle GirardeauPierre PaolettiInstitut de Biologie de l'Ecole Normale Supérieure, Ecole Normale Supérieure, Université Paris Sciences et Lettres, Centre National de la Recherche

 Scientifique, Institut National de la Santé et de la Recherche Médicale, Paris 75005, FranceInstitut du Fer à Moulin, Institut National de la Santé et de la Recherche Médicale, Sorbonne Université, Paris 75005, FranceCentral Nervous System Diseases Research, Boehringer Ingelheim Pharma GmbH & Co. KG, Biberach an der Riss 88397, Germany

 2025-09-09  1 min  49 words


PNAS NEUROSCIENCE


Summary: Proceedings of the National Academy of Sciences, Volume 122, Issue 37, September 2025.
SignificanceThe hippocampus shows a deep anatomical and functional differentiation across the longitudinal axis, with the dorsal subregion involved in primarily cognitive function and the ventral subregion i...

 Read full article:

<https://www.pnas.org/doi/abs/10.1073/pnas.2501118122?af=R>

Decoupling model descriptions from execution: a modular paradigm for extensible neurosimulation with EDEN

 Christos
Strydis

 2025-08-07

 1
min

 204
words

FRONTIERS NEUROINFORMATICS


Summary: Computational-neuroscience simulators have traditionally been constrained by tightly coupled simulation engines and modeling languages, limiting their flexibility and scalability. Retrofitting these platforms to accommodate new backends is often costly, and sharing models across simulators remains c...

 Read full article:


<https://www.frontiersin.org/articles/10.3389/fninf.2025.1572782>

Motor imagery-based brain-computer interfaces: an exploration of multiclass motor imagery-based control for Emotiv EPOC X

 Artur
Gunia

 2025-08-12

 1
min

 179
words


FRONTIERS NEUROINFORMATICS


Summary: IntroductionEnhancing the command capacity of motor imagery (MI)-based brain-computer interfaces (BCIs) remains a significant challenge in neuroinformatics, especially for real-world assistive applications. This study explores a multiclass BCI system designed to classify multiple MI tasks using a lo...

 Read full article:

<https://www.frontiersin.org/articles/10.3389/fninf.2025.1625279>

The BrainHealth Databank: a systems approach to data-driven mental health care and research

 Sean L.
Hill

 17 2025-08-13

 1
min

 162
words

FRONTIERS NEUROINFORMATICS


Summary: IntroductionMental health care is undermined by fragmented data collection, as incomplete datasets can compromise treatment efficacy and research. The BrainHealth Databank (BHDB) at the Centre for Addiction and Mental Health (CAMH) establishes the governance and infrastructure for a Learning Mental ...

 Read full article:


<https://www.frontiersin.org/articles/10.3389/fninf.2025.1616981>

The effect of neuro-enhancement technology on proprioception in patients with anterior cruciate ligament reconstruction

 Wei
Li

 17 2025-09-15

 1
min

 160
words

FRONTIERS HUMAN NEUROSCIENCE

Summary: ObjectiveTo investigate whether the neural augmentation technique can induce improvement of proprioceptive performance in Anterior cruciate ligament reconstruction (ACLR) patients.MethodsForty ACLR patients were recruited and randomly assigned to receive either active prefrontal cortex-targeted repe...

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<https://www.frontiersin.org/articles/10.3389/fnhum.2025.1651309>

Case Report: When multiple system atrophy masquerades as CASPR2 autoimmune encephalopathy: a diagnostic pitfall



Jun

Li



2025-09-15



1

min



172

words

FRONTIERS HUMAN NEUROSCIENCE

Summary: IntroductionMultiple system atrophy (MSA) is a sporadic, adult-onset neurodegenerative disorder characterized by rapid progression. Early diagnosis remains particularly challenging, especially when CASPR2 antibodies are detected during the early stages of disease progression. Case presentationA 56-ye...



Read full article:

<https://www.frontiersin.org/articles/10.3389/fnhum.2025.1658933>

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



Maria Carla

Piastra



2024-06-14



1

min



64

words

OOSTENVELD ROBERT

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



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[utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1BUB2BG5RbxOblm-hBbiJWEhGG43qIVrvGNHOTqBKva9wWrltM&fc=None&ff=20250915014121&v=2.18.0.post9+e462414](https://pubmed.ncbi.nlm.nih.gov/38873838/?utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1BUB2BG5RbxOblm-hBbiJWEhGG43qIVrvGNHOTqBKva9wWrltM&fc=None&ff=20250915014121&v=2.18.0.post9+e462414)

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

 Julius
Welzel

 17

2024-07-02



1
min



72
words

OOSTENVELD ROBERT


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

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One hundred years of EEG for brain and behaviour research

 Pedro Valdes-
Sosa

 17

2024-08-22




1
min



2
words

OOSTENVELD ROBERT

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



Richard J A van
Wezel



2024-09-04



1
min



65
words

OOSTENVELD ROBERT

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



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



Krzysztof J
Gorgolewski



2024-09-23



1
min



82
words

OOSTENVELD ROBERT

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



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

Fanny
Quandt

17 2025-01-09

1
min

65
words

OOSTENVELD ROBERT

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

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

Luca
Pollonini

17 2025-01-27

1
min

70
words

OOSTENVELD ROBERT


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



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

 Lyuba
Zehl

 2025-06-26  1
min

 67
words

OOSTENVELD ROBERT

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



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

 Tim M
Tierney

 2025-08-13  1
min

 74
words

OOSTENVELD ROBERT


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


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Optimal configuration of on-scalp OPMs with fixed channel counts

 Robert
Oostenveld

 2025-08-13  1
min

 69
words

OOSTENVELD ROBERT


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


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A Stereo Synchronization Method for Consumer-Grade Video Cameras to Measure Multi-Target 3D Displacement Using Image Processing in Shake Table Experiments

 Yuan-Sen
Yang

 2025-09-13  1
min

 63
words

LOW VISION


Summary: The use of consumer-grade cameras for stereo vision provides a cost-effective, non-contact method for measuring three-dimensional displacement in civil engineering experiments. However, obtaining accurate 3D coordinates requires accurate temporal alignment of several unsynchronized cameras, which is...


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Real-Time Driver Attention Detection in Complex Driving Environments via Binocular Depth Compensation and Multi-Source Temporal Bidirectional Long Short-Term Memory Network

 Huajie
Liu

 2025-09-13

 1
min

 62
words

LOW VISION

Summary: Driver distraction is a key factor contributing to traffic accidents. However, in existing computer vision-based methods for driver attention state recognition, monocular camera-based approaches often suffer from low accuracy, while multi-sensor data fusion techniques are compromised by poor real-ti...

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Tracking-Based Denoising: A Trilateral Filter-Based Denoiser for Real-World Surveillance Video in Extreme Low-Light Conditions



Chen

Lv



2025-09-13



1

min



75

words

LOW VISION

Summary: Video denoising in extremely low-light surveillance scenarios is a challenging task in computer vision, as it suffers from harsh noise and insufficient signal to reconstruct fine details. The denoising algorithm for these scenarios encounters challenges such as the lack of ground truth, and the nois...

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A Unified Preprocessing Pipeline for Noise-Resilient Crack Segmentation in Leaky Infrastructure Surfaces



Jeongho

Cho



2025-09-13



1

min



67


words


LOW VISION

Summary: Wet cracks caused by leakage often exhibit visual and structural distortions due to surface contamination, salt crystallization, and corrosion byproducts. These factors significantly degrade the performance of sensor- and vision-based crack detection systems. In moist environments, the initiation an...


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U-ResNet, a Novel Network Fusion Method for Image Classification and Segmentation

 Yaqing
Song

 2025-09-13

 1
min

 65
words

LOW VISION

Summary: Image classification and segmentation are important tasks in computer vision. ResNet and U-Net are representative networks for image classification and image segmentation, respectively. Although many scholars used to fuse these two networks, most integration focuses on image segmentation with U-Net,...


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Serum Vitamin D Levels as Predictors of Response to Intravitreal Anti-VEGF Therapy in Diabetic Macular Edema: A Clinical Correlation Study

 Ana Maria
Stoica

 2025-09-13

 1
min

 66
words

LOW VISION

Summary: Our study explored the role of serum 25-hydroxyvitamin D [25(OH)D] levels as an indicator of response to intravitreal anti-vascular endothelial growth factor (anti-VEGF) therapy in patients with diabetic macular edema (DME), highlighting functional and anatomical outcomes linked to systemic biomarkers...

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Visual Outcomes of a Non-Diffractive Extended Depth-of-Focus Intraocular Lens in Patients with Early-Stage Age-Related Macular Degeneration

 Celia Sánchez-Ramos

 17 2025-09-13  1 min

 66 words

LOW VISION


Summary: Background/Objectives: Age-related macular degeneration (AMD) is a leading cause of visual impairment in older adults and often coexists with cataracts. The indication of presbyopia-correcting intraocular lenses (IOLs) in these patients remains controversial. This study aimed to evaluate the clinica...

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Use of Mechanical Enhanced Colonoscopy to Improve Polyp Detection During Colorectal Cancer Screening: A Real-World Healthcare Database Analysis

 Seth A
Gross

 2025-09-13

 1
min

 71
words

LOW VISION


Summary: Introduction: High performance colonoscopy requires the monitoring of an individual's adenoma detection rate (ADR). The Endocuff (EndoCuff Vision, Olympus America Inc., Center Valley, PA, USA) is an endoscopic distal attachment device that increases surface area exposure during colonoscopy. While st...

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Metabolic alterations in diabetic patients: aqueous humor profiling for biomarker discovery

 Guna
Laganovska

 2025-09-13

 1
min

 64
words

LOW VISION


Summary: Diabetic retinopathy, a leading cause of vision loss in working-age populations, is a severe complication of diabetes mellitus. Metabolomics, a key approach in systems biology, offers insights into the complex pathophysiology of diabetes by analyzing low-molecular-weight compounds in biological cont...


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
[utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1xePBFBnvSlegfqCbvp45N3V9WgCNCS63Z1PLmhwJSPGd18QMT&fc=None&ff=20250915014118&v=2.18.0.post9+e462414](https://pubmed.ncbi.nlm.nih.gov/40944756/?utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1xePBFBnvSlegfqCbvp45N3V9WgCNCS63Z1PLmhwJSPGd18QMT&fc=None&ff=20250915014118&v=2.18.0.post9+e462414)

Evaluating the predictive potential of Th1 (IFN- γ +/CD4+/CD4+/) in rapidly progressive amyotrophic lateral sclerosis

 Hao Zhang

 2025-09-14

 1 min

 31 words

LOW VISION


Summary: CONCLUSIONS: Th1/CD4⁺ (with an optimal cutoff value of 16.21) was established as an independent risk factor for rapid progression in ALS. The machine learning model incorporating Th1/CD4⁺ demonstrated strong predictive performance.


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My Broken Heart

 Ashley C Rider

 2025-05-08

 1 min

 34 words

TACTILE ACUITY


Summary: AUDIENCE: The target audience for the key learning objectives of this Left-Ventricular Assist Device (LVAD) simulation are emergency medicine residents. Other team members such as attendings, nurses, pharmacists, and technicians could potentially be integrated.


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Distributions of orofacial two-point discrimination threshold: A cross-sectional study in healthy population and patients with pain-related temporomandibular disorders

 Xin
Xiong

 17 2025-05-15

 1
min

 70
words

TACTILE ACUITY


Summary: CONCLUSION: Pain-related TMDs patients had weaker orofacial tactile acuity, which was consistent in gender subgroups, except for the temporal region of males. Healthy males had weaker tactile acuity compared to females in TMJ and temporal regions. No significant gender effect on orofacial tactile ac...




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

 Thomas Hummel

 2025-05-28  1 min  70 words


TACTILE ACUITY

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

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

 Hiroyuki Kajimoto

 2025-06-17  1 min  75 words

TACTILE ACUITY

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

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

 Leah R
Bent



2025-06-27



1
min



69
words

TACTILE ACUITY

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




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Directional vibro-tactile hazard warnings for drivers with vision impairments

 Alex R
Bowers



2025-07-02



1
min



80
words

TACTILE ACUITY

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






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

 Cecilia
Guariglia

 2025-08-01  1
min

 64
words

TACTILE ACUITY

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



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

 Eric
Fjeldheim

 2025-08-24  1
min

 22
words

TACTILE ACUITY


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


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

 Paula Anne Newman-Casey

 2025-09-09

 1 min

 74 words


TACTILE ACUITY


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

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

 Sviatoslav N Bagriantsev


 2025-09-13

 1 min

 58 words

TACTILE ACUITY

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

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WAYVision: A hybrid deep learning approach for recognizing handwritten Kannada Braille using wavelet transformation and attention based YOLOv5



Shobha Rani

N



2025-08-25



1

min



64

words

BRAILLE

Summary: Handwritten Braille character recognition presents a significant challenge in the field of assistive technology, especially with the inclusion of various linguistic scripts such as Kannada. The data set is uniquely curated, combining ground-truth data from Kaggle and real-world samples collected fro...




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

 Joseph Paul
Nemargut



2025-08-25



1
min



62
words

BRaille

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




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

 Jianming
Xu



2025-08-25



1
min



62
words

BRaille

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



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

 Million
Phiri



2025-08-26



1
min



46
words

BRaille

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




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Explosion-powered eversible tactile displays

 Robert F
Shepherd



2025-08-27



1
min



64
words

BRaille

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




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

 Zhijun
Ma

 2025-08-28

 1
min

 57
words

BRAILLE


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



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

 Min
Zhang

 2025-08-28

 1
min

 64
words

BRAILLE

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



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



Hao
Lin



2025-09-01



1
min



72
words

BRAILLE

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



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



Ji
Liu



2025-09-02



1
min



56
words

BRAILLE

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



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

Önder İşlek

17 2025-09-12

1 min

55 words

BRAILLE

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

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Personalized High-Definition Transcranial Direct Current Stimulation for the Treatment of Depression: A Randomized Clinical Trial

Katherine Narr

17 2025-09-11

1 min

66 words

TDCS TACS TRNS


Summary: CONCLUSIONS AND RELEVANCE: In this randomized clinical trial of HD-tDCS in participants with moderate to severe depression, the 12-day HD-tDCS therapy was observed to significantly improve mood with a moderate effect size. Similar effect sizes in pharmacotherapy, psychotherapy, and conventional tDCS...


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Effect of theta-transcranial alternating current stimulation on working memory performance among healthy adults: A systematic review and meta-analysis

 Rui-Ke
Zhang

 2025-09-11

 1
min

 27
words

TDCS TACS TRNS

Summary: CONCLUSION: Theta-tACS enhances working memory in healthy adults, with effects modulated by the task type and protocol parameters, offering dual implications for cognitive enhancement and clinical interventions.


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Review of nonpharmacological interventions for delaying the effects of cerebral neuropathy caused by diabetes

 Lun-De
Liao

 2025-09-12

 1
min

 67
words

TDCS TACS TRNS


Summary: Diabetic peripheral neuropathy (DPN) is a debilitating complication of diabetes that affects nearly half of diabetic patients and manifests as chronic pain, sensory loss, and motor dysfunction. The limited efficacy of traditional pharmacological treatments, coupled with their side effects, has inten...



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Online HD-tRNS over the right temporoparietal junction modulates social inference but not motor coordination

 Guillaume
Dumas

 2025-09-12  1
min

 68
words

TDCS TACS TRNS


Summary: Social interactions are fundamental to human cognition, with the right temporoparietal junction (rTPJ) playing a key role in integrating motor coordination and social inference. While transcranial random noise stimulation (tRNS) is a promising technique for modulating cortical excitability in real t...



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Neural Correlates of Borderline Personality Disorder (BPD) Based on Electroencephalogram (EEG)-A Mechanistic Review

 Donata
Kurpas

 2025-09-13  1
min

 62
words

TDCS TACS TRNS


Summary: Borderline Personality Disorder (BPD) is marked by emotional dysregulation, instability in self-image and relationships, and high impulsivity. While functional magnetic resonance imaging (fMRI) studies have provided valuable insights into the disorder's neural correlates, electroencephalography (EEG...


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Burnout and the Brain-A Mechanistic Review of Magnetic Resonance Imaging (MRI) Studies

 Donata Kurpas

 2025-09-13

 1 min

 64 words

TDCS TACS TRNS


Summary: Occupational burnout is ubiquitous yet still debated as a disease entity. Previous reviews surveyed multiple biomarkers but left their neural substrate unclear. We therefore asked: What, if any, reproducible magnetic-resonance signature characterises burnout? Following PRISMA principles adapted for ...


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From Immediate Impact to Enduring Change: A Transcriptomic Comparison of tDCS's Temporal Effects and Its Long-Term Equivalence with TMS

 Hanoch Kaphzan

 2025-09-13

 1 min

 63 words

TDCS TACS TRNS

Summary: Transcranial Direct Current Stimulation (tDCS) and Transcranial Magnetic Stimulation (TMS) are neuromodulatory techniques with therapeutic potential for similar disorders; however, their molecular effects require further elucidation, and whether both strategies work in similar biological pathways is...

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General Innovations in Pain Management

 Alaa Abd-
Elsayed



2025-09-13



1
min



74
words

TDCS TACS TRNS

Summary: Chronic pain management is constantly evolving, and our literature review aims to describe the general innovations happening within the field. The need for advancements in chronic pain is a necessity, as debilitating back pain and other forms of chronic pain are significant issues in the United Stat...





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Behavioral outcomes after tDCS treatment during immediate post-intervention and follow-up periods in children and adolescents diagnosed with attention-deficit/hyperactivity disorder: a systematic review and meta-analysis on randomized sham-controlled trials

 Kuo-Chuan
Hung

 2025-09-13

 1
min

 58
words

TDCS TACS TRNS

Summary: This meta-analysis aimed at elucidating the effectiveness of transcranial direct current stimulation (tDCS) in improving behavioral symptoms of attention deficit/hyperactivity disorder (ADHD) in children/adolescents during the immediate post-intervention/follow-up periods and identifying potential c...

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Effect of HD-tDCS targeting the DLPFC on cognitive ability and flight simulation performance in healthy adults

Xia
Zhu

2025-09-14

1
min

36
words

TDCS TACS TRNS

Summary: OBJECTIVE: This study aimed to investigate the effects of high-definition transcranial direct current stimulation (HD-tDCS) on attention, working memory, inhibitory control, and cognitive flexibility in healthy adults, and to examine its association with flight simulation performance.

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Evaluating the effects of multimodal EEG-fNIRS neurofeedback for motor imagery: An experimental platform and study protocol

Pierre
Maurel

2025-09-11

1
min

61
words

FNIRS

Summary: BACKGROUND: Neurofeedback (NF) enables the self-regulation of brain activity through real-time feedback extracted from brain measures. Recently, the combination of several neuroimaging methods to characterize brain activity has led to growing interest in NF. The integration of various portable recor...

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The Emotional and Cognitive Effects of Synchronizing to Music During Acute Exercise: An fNIRS Study



William Forde
Thompson



2025-09-12



1
min



61
words

FNIRS

Summary: Synchronizing movements to music enhances exercise performance and enjoyment, yet its short-term effects on attention and cognition remain underexplored. This study examined the influence of synchronous music, asynchronous music, and a no-music control condition on emotional responses, perceived exe...



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Interbrain Synchrony Mitigates Extremism Within Echo Chambers



Simone Shamay-
Tsoory



2025-09-12



1
min



65
words

FNIRS

Summary: People tend to engage with content that aligns with their pre-existing attitudes, forming echo chambers that reinforce biases and may amplify extremism. Here, we investigate whether discussions within homogeneous groups drive attitudinal extremity and whether interbrain synchronized activity between...




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An Empirical Study on the Impact of Different Interaction Methods on User Emotional Experience in Cultural Digital Design

 Feng
Zou

 2025-09-13

 1
min

 64
words

FNIRS


Summary: Traditional culture plays a vital role in shaping national identity and emotional belonging, making it imperative to explore innovative strategies for its digital preservation and engagement. This study investigates how interaction design in cultural digital games influences users' emotional experie...


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TopoTempNet: A High-Accuracy and Interpretable Decoding Method for fNIRS-Based Motor Imagery

 Zhejun
Kuang

 2025-09-13

 1
min

 63
words

FNIRS

Summary: Functional near-infrared spectroscopy (fNIRS) offers a safe and portable signal source for brain-computer interface (BCI) applications, particularly in motor imagery (MI) decoding. However, its low sampling rate and hemodynamic delay pose challenges for temporal modeling and dynamic brain network an...


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Compact Colocated Bimodal EEG/fNIRS Multi-Distance Sensor

 Angélique
Rascle

 2025-09-13

 1
min

 70
words

FNIRS


Summary: At present, it is a real challenge to measure brain signals outside of the lab with portable systems that are robust, comfortable and easy to use. We propose in this article a bimodal electroencephalography-functional near-infrared spectroscopy (EEG-fNIRS) sensor whose spatial geometry allows the ro...


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Do newborns detect prosodic violations in an unfamiliar language at birth?

 Judit
Gervain

 2025-09-14

 1
min

 65
words

FNIRS

Summary: Experience with language starts prenatally, as the intrauterine environment allows speech prosody to get through. Martinez-Alvarez and colleagues (2023) demonstrated that newborns detect utterance-level prosodic violations in the language they heard prenatally, French. It remains unknown, however, w...

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The sensory-motor overlap in motor imitation: evidence from motor imagery

 Shengjun
Wu

 17

2025-09-14

 1

min

 70

words

FNIRS

Summary: Motor imitation is crucial for acquiring motor skills and social cognition, yet the theoretical understanding of its underlying mechanism remains partial. The direct matching hypothesis suggests that the overlap between observed and executed motions is crucial for effective motor imitation. This stu...

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Your smiles inspired my smiles: the interpersonal neural coupling of positive emotion contagion during social interactions

 Yanmei
Wang

 17

2025-09-14

 1

min

 70

words

FNIRS


Summary: Emotional contagion refers a process that by which the emotions of a perceiver become more similar to those of others as a result of exposure to these emotions. The present study investigated the behavioral and interpersonal neural coupling mechanisms underlying positive emotional contagion. We recr...



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Abnormal Brain Activation Patterns in Patients With Post-Acute Sequelae of COVID-19 (PASC) During Recovery: A fNIRS Study

 Xiaoying Tang

 2025-09-14  1 min

 69 words

fNIRS

Summary: COVID-19 has increased the likelihood of cognitive impairment in patients with post-acute sequelae of COVID-19 (PASC). There is a lack of direct evidence regarding the working memory performance of mild patients during the recovery period. This study employed functional near-infrared spectroscopy (f...


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EEGOpt: A performance efficient Bayesian optimization framework for automated EEG signal classification

 Monisha Chakraborty

 2025-09-11  1 min

 34 words

BRAIN COMPUTER INTERFACE

Summary: CONCLUSION: EEGOpt is a scalable and interpretable framework that automatically identifies optimal signal processing and classification strategies adaptable to EEG datasets, making it a valuable tool for neuroscientific research, diagnostics, and brain-computer interface development.


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Stretchable Multilevel Mesh Brain Electrodes for Neuroplasticity in Glioma Patients Undergoing Surgery

Xue
Feng

2025-09-12

1
min

63
words

BRAIN COMPUTER INTERFACE

Summary: Brain disease surgical treatment usually leads to neurological dysfunction. Electroencephalogram (EEG)-based neuroplasticity study may facilitate patient nerve function recovery from injury, allowing a return to normal activities. Due to the limitations of wound infections and hair barrier effects, ...

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2D Vanadium Carbide/Oxide Heterostructure-Based Artificial Sensory Neuron for Multi-Color Near-Infrared Object Recognition

 Jiahong Wang

 17

2025-09-12



1 min



58 words

BRAIN COMPUTER INTERFACE

Summary: Near-infrared (NIR) photon detection and object recognition are crucial technologies for all-weather target identification in autonomous navigation, nighttime surveillance, and tactical reconnaissance. However, conventional NIR detection systems, which rely on photodetectors and von Neumann computin...

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Sequence action representations contextualize during early skill learning



Leonardo G
Cohen



2025-09-12



1
min



68
words

BRAIN COMPUTER INTERFACE

Summary: Activities of daily living rely on our ability to acquire new motor skills composed of precise action sequences. Here, we asked in humans if the millisecond-level neural representation of an action performed at different contextual sequence locations within a skill differentiates or remains stable d...



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Classification of Different Motor Imagery Tasks with the Same Limb Using Electroencephalographic Signals



Carlos Julio Tierra-
Criollo



2025-09-13



1
min



69
words

BRAIN COMPUTER INTERFACE

Summary: Stroke is a neurological condition that often results in long-term motor deficits. Given the high prevalence of motor impairments worldwide, there is a critical need to explore innovative neurorehabilitation strategies that aim to enhance the quality of life of patients. One promising approach invol...




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TopoTempNet: A High-Accuracy and Interpretable Decoding Method for fNIRS-Based Motor Imagery

 Zhejun
Kuang

 17

2025-09-13



1
min



63
words

BRAIN COMPUTER INTERFACE

Summary: Functional near-infrared spectroscopy (fNIRS) offers a safe and portable signal source for brain-computer interface (BCI) applications, particularly in motor imagery (MI) decoding. However, its low sampling rate and hemodynamic delay pose challenges for temporal modeling and dynamic brain network an...


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A new wide-scope, multi-biomarker wastewater-based epidemiology analytical method to monitor the health and well-being of inhabitants at a metropolitan scale

 Barbara Kasprzyk-Hordern

 2025-09-13

 1 min

 64 words

BRAIN COMPUTER INTERFACE

Summary: This manuscript establishes a new, comprehensive biomarker list and a multiresidue trace quantification method for community-wide health and well-being assessment at a metropolitan scale using wastewater-based epidemiology (WBE) and mass spectrometry pipelines. This method enables the quantification...

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Thalamocortical dysrhythmia-related sleep spindle desynchronization in patients with tinnitus



Yuanqing
Li



2025-09-13



1
min



68
words

BRAIN COMPUTER INTERFACE

Summary: Patients with tinnitus commonly suffer from sleep problems, and the underlying neural mechanisms remain unclear. Previous studies have focused primarily on the correlation between patients' sleep structure and tinnitus, lacking exploration into the links between sleep problems and the underlying pat...



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Neurodevelopmental deviations in schizophrenia: Evidences from multimodal connectome-based brain ages



Huafu
Chen



2025-09-13



1
min



21
words

BRAIN COMPUTER INTERFACE

Summary: CONCLUSION: These findings from a multimodal brain age perspective suggest that advanced brain age gaps exist early in youths with schizophrenia.



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MSAttNet: Multi-scale attention convolutional neural network for motor imagery classification



Jing
Jin



2025-09-14



1
min



16
words

BRAIN COMPUTER INTERFACE

Summary: CONCLUSION: MSAttNet effectively addresses the challenges of MI-EEG datasets, improving decoding performance by robust feature extraction.



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Elongated τ in an ex-Gaussian decomposition of vocal articulation speed in children with attention deficit hyperactivity disorder.



2025-05-08



1
min



191
words

NEUROPSYCHOLOGY

Summary: Objective: Slower and more variable reaction time is one of the most prominent cognitive signatures in childhood attention-deficit/hyperactivity disorder (ADHD). However, standard use of tasks that involve motor responses to index “speed” potentially confounds fine-motor coordination with central co...



Read full article:

<http://doi.org/10.1037/neu0001015>

Updating the self-appraisal of one's cognitive performance with 7 days of repeated exposure: From test-naïve to experienced.

 2025-05-26  1 min  285 words

NEUROPSYCHOLOGY

Summary: Objective: Self-appraisal of cognitive performance, a potentially useful marker of brain functioning, is typically assessed at a single time point where tests are naïve to what constitutes “good” or “bad” performance. Here, we determine whether familiarizing individuals with self-appraisal with dail...

 **Read full article:**
<http://doi.org/10.1037/neu0001010>

Robust longitudinal neuropsychological norms in Spanish individuals with nonpathological Alzheimer's disease biomarkers.

 2025-05-22  1 min  256 words

NEUROPSYCHOLOGY

Summary: Objective: Neuropsychological norms serve to identify cognitive impairment and monitor neurodegenerative disease progression. However, longitudinal data are limited, and conventional approaches do not account for biomarkers to exclude underlying Alzheimer's disease (AD) pathology, reducing sensitivi...

 **Read full article:**
<http://doi.org/10.1037/neu0001013>

Posttraumatic stress symptomatology rather than mild traumatic brain injury is related to atypical early neural processing during cognitive control.

 2025-04-07  1 min  253 words

NEUROPSYCHOLOGY

Summary: Objective: Many veterans with posttraumatic stress disorder (PTSD) or a history of mild traumatic brain injury (mTBI) report disruptions in cognition; however, the neurophysiological underpinnings of these cognitive difficulties are not well understood. It is also unknown whether PTSD symptomatology...

 Read full article:
<http://doi.org/10.1037/neu0001008>

Acquired crowding dyslexia: A peripheral reading deficit other than neglect dyslexia.



 2025-06-02  1 min  259 words

NEUROPSYCHOLOGY

Summary: Objectives: Crowding refers to the phenomenon whereby small visual objects above the acuity threshold are detected but unrecognizable when surrounded by nearby stimuli. It affects reading in healthy individuals and can be enhanced in reading impairments. By increasing the interletter space, crowding...

 Read full article:
<http://doi.org/10.1037/neu0001014>

Joint effects of human immunodeficiency virus (HIV) and cannabis on neurocognition.




 2025-07-21  1 min  270 words

NEUROPSYCHOLOGY

Summary: Objective: Cannabis has become increasingly accessible to populations living with chronic health conditions such as HIV. Many people living with HIV are turning to cannabis for symptom relief despite the unclear risks to neurocognitive health. Our study sought to replicate and extend prior research ...

 **Read full article:**
<http://doi.org/10.1037/neu0001003>

Elder relatives in waking life correlated with both elder relatives in dreams and animals in dreams.



 2024-10-10  1 min  196 words

DREAMING

Summary: There are dream metaphors that express waking-life experiences indirectly. Animals in dreams have been speculated to be related to dream metaphors. Here, we explored if there was any relationship between waking-life experiences related to elder relatives with both dreaming about elder relatives and ...

 **Read full article:**
<http://doi.org/10.1037/drm0000292>

Whose sexual dream experiences are more intense? An exploratory study on the relationship between personality traits and sexual dreams.



 2024-09-23  1 min  178 words

DREAMING

Summary: Sexual dreams reflect individuals' attitudes toward sex, the personal significance of sex, and/or sexual issues in their waking life. Gaining insight into the factors associated with the perceived intensity of sexual dream experiences is beneficial for achieving a comprehensive assessment of sexual ...

 Read full article:
<http://doi.org/10.1037/drm0000289>

The bereavement experience: Dreams and waking experiences of the deceased.




 2024-10-10  1 min  227 words

DREAMING

Summary: In separate literature—end-of-life experiences, dreams in bereavement, and continuing bonds in bereavement—there are preliminary findings that both dreaming of the deceased and having an experiential encounter while awake are common experiences. The present, brief report is a post hoc analysis of pr...

 Read full article:
<http://doi.org/10.1037/drm0000291>

Culturally responsive dreamwork: Facilitating culturally competent dream discussions.


 2024-12-12  1 min  118 words

DREAMING

Summary: Culturally responsive dreamwork (CRD) addresses a significant gap in counseling and psychotherapy by offering an innovative, culturally competent approach for therapeutic dream discussions. By adopting a culturally responsive stance, CRD guides dream discussions without imposing psychological belief...

 **Read full article:**
<http://doi.org/10.1037/drm0000300>

Nightmares and the Big Five personality traits: A systematic review and three-level meta-analysis.




 2025-02-17  1 min  227 words

DREAMING

Summary: Our objective was to conduct a systematic review with meta-analysis to enhance our comprehension of the Big Five personality traits that are associated with nightmare frequency and distress and might thus serve as risk factors for frequent and distressing nightmares. The inclusion criteria for studi...

 **Read full article:**
<http://doi.org/10.1037/drm0000301>

An empirical comparison of some nightmare dispositions: Neuroticism, nightmare proneness, thin psychological boundaries, and sensory processing sensitivity.

 2024-11-07  1 min  117 words

DREAMING

Summary: Previous research and theory have identified several dispositions for experiencing frequent nightmares, but these dispositions are rarely examined simultaneously. This study compared the relative strength of these dispositions in predicting nightmare frequency. A sample of 116 university students co...

 Read full article:
<http://doi.org/10.1037/drm0000294>

Sleep patterns and crisis-related dreams during the COVID-19 pandemic and the Russo-Ukrainian war.




 2025-03-06  1 min  200 words

DREAMING

Summary: The COVID-19 pandemic and the ongoing Russo-Ukrainian War have profoundly affected individuals worldwide, eliciting heightened levels of stress, anxiety, and fear. This study investigates the impact of these crises on sleep patterns and dream experiences within Portugal's general adult population. O...

 Read full article:
<http://doi.org/10.1037/drm0000305>

Political mobilization, trauma, delusional dream themes, and nightmare distress in Hong Kong.

 2025-01-16  1 min  187 words

DREAMING

Summary: Dreams are known to be affected by large-scale traumatic events that impact society, but the literature on social movement-related trauma is inadequate. The Anti-Extradition Law Amendment Bill Movement (Anti-ELAB) was a 7-month large-scale and highly traumatic social movement in Hong Kong that began...


 **Read full article:**
<http://doi.org/10.1037/drm0000299>

Language Models Pack Billions of Concepts into 12,000 Dimensions



 2025-09-15  1 min  2 words

HACKER NEWS

Summary: [Comments](https://news.ycombinator.com/item?id=45245948)

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Starlink is currently experiencing a service outage





 2025-09-15  1 min  2 words

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Language Models Pack Billions of Concepts into 12,000 Dimensions

 lawrencecyan  2025-09-15  1 min  13 words

HACKER NEWS


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Points: 14

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How Container Filesystem Works: Building a Docker-Like Container from Scratch



thunderbong



2025-09-15



1
min



13
words

HACKER NEWS

Summary:

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Starlink is currently experiencing a service outage



thallium205



2025-09-15



1
min



13
words

HACKER NEWS

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Comments: 3



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US taxpayers to pay billions in fuel subsidies thanks to Big Beautiful Bill



billybuckwheat



2025-09-15



1

min



13

words

HACKER NEWS

Summary:

Article URL: <https://www.wired.com/story/us-taxpayers-will-pay-billions-in-new-fossil-fuel-subsidies-thanks-to-the-big-beautiful-bill/>

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Call for 2025 Society Awards Nominations



Deidre
Artis



2025-02-03



1

min



15

words

EMBS

Summary:



The post [Call for 2025 Society Awards Nominations](https://www.embs.org/awards/society-awards/#new_tab) appeared first on [IEEE EMBS](https://www.embs.org).



Read full article:

https://www.embs.org/awards/society-awards/#new_tab





Bridging Biotech: Regional shifts and patterns

dziura  2025-02-05  1 min  15 words 

Summary: <p>The post Bridging Biotech: Regional shifts and patterns appeared first on IEEE EMBS.</p>

 **Read full article:**
<https://www.embs.org/blog-post/regional-shifts-and-patterns/>

Welcoming Dr. Ana Kyani as the New Women in Biomedical Engineering Chair for IEEE EMBS

Nancy Zimmerman  2025-03-27  1 min  24 words 


Summary: <p>The post Welcoming Dr. Ana Kyani as the New Women in Biomedical Engineering Chair for IEEE EMBS appeared first on IEEE EMBS.</p>

 **Read full article:**
<https://www.embs.org/blog-post/welcoming-dr-ana-kyani-as-wibme-chair-ieee-embs/>

The potential role of hypothalamic POMCTRPM2 in interscapular BAT thermogenesis

17 2025-09-12 1 min 0 words

NATURE NEUROSCIENCE SUBJECTS

 Read full article:

<https://www.nature.com/articles/s12276-025-01538-6>

Microglia contribute to bipolar depression through Serinc2-dependent phospholipid synthesis

Ying-Han Wang Chong-Lei Fu Lin-Bo Chen Chu-Yi Zhang Jian-Shan Chen Qiao-Ming Zhang Yirui Liang Rui-Lan Yang Yu Li Ya-Ni Zhang Yi-Nuo Han Zhen-Liang Yuan Yi-Ni Chen Haimei Li Yanmeng Pan Shaohua Hu Ming Li Li-Ping Cao Jun Yao State Key Laboratory of Membrane Biology, IDG/McGovern Institute for Brain Research, School of Life Sciences, Tsinghua University, Beijing 100084, China; Shandong Institute of Brain Science and Brain-inspired Research, Shandong First Medical University, Jinan 250117, China; Key Laboratory of Genetic Evolution & Animal Models, Kunming Institute of Zoology, Chinese Academy of Sciences, Kunming 650201, China; Yunnan Key Laboratory of Animal Models and Human Disease Mechanisms, Kunming Institute of Zoology, Chinese Academy of Sciences, Kunming 650201, China; Affiliated Brain Hospital of Guangzhou Medical University, Guangzhou Huiai Hospital, Guangzhou 510370, China; Department of Psychiatry, the First Affiliated Hospital, Zhejiang University School of Medicine, The Key Laboratory of Mental Disorder Management in Zhejiang Province, Hangzhou 310003, China

17 2025-09-08 1 min 45 words

PNAS NEUROSCIENCE

Summary: Proceedings of the National Academy of Sciences, Volume 122, Issue 37, September 2025. Although microglia are implicated in neuropsychiatric disorders, their role in BD remains unclear. In this study, using induced pluripotent stem cell-derived microglia-neuron cocultures from BDII...

 Read full article:

<https://www.pnas.org/doi/abs/10.1073/pnas.2500116122?af=R>

Modeling human retinal ganglion cell axonal outgrowth, development, and pathology using pluripotent stem cell-based microfluidic platforms

Cátia GomesKang-Chieh HuangSailee S. LavekarJade HarkinCarson G. ProsserYue FangClaire KalemAdrian OblakChi ZhangJason S. MeyeraDepartment of Medical and Molecular Genetics, Indiana University School of Medicine, Indianapolis, IN 46202bStark Neurosciences Research Institute, Indiana University School of Medicine, Indianapolis, IN 46202cDepartment of Biology, Indiana University Purdue University Indianapolis, Indianapolis, IN 46202dDepartment of Pharmacology and Toxicology, Indiana University School of Medicine, Indianapolis, IN 46202eDepartment of Radiology and Imaging Sciences, Indiana University School of Medicine, Indianapolis, IN 46202fDepartment of Ophthalmology, Indiana University School of Medicine, Indianapolis, IN 46202



2025-09-09

1
min47
words

PNAS NEUROSCIENCE


Summary: Proceedings of the National Academy of Sciences, Volume 122, Issue 37, September 2025.
SignificanceRetinal ganglion cells (RGCs) are highly compartmentalized cells, with several features unique to axons. Previous studies have explored RGCs derived from human pluripotent stem cells (hPSCs), wit...




Read full article:

<https://www.pnas.org/doi/abs/10.1073/pnas.2423682122?af=R>

Improving EEG classification of alcoholic and control subjects using DWT-CNN-BiGRU with various noise filtering techniques

 Swati Jain

 2025-08-19  1 min

 188 words

FRONTIERS NEUROINFORMATICS



Summary: Electroencephalogram (EEG) signal analysis plays a vital role in diagnosing and monitoring alcoholism, where accurate classification of individuals into alcoholic and control groups is essential. However, the inherent noise and complexity of EEG signals pose significant challenges. This study invest...


 Read full article:

<https://www.frontiersin.org/articles/10.3389/fninf.2025.1618050>

Leveraging neuroinformatics to understand cognitive phenotypes in elite athletes through systems neuroscience

 Qi Yu

 2025-08-19  1 min

 152 words


FRONTIERS NEUROINFORMATICS


Summary: IntroductionUnderstanding the cognitive phenotypes of elite athletes offers a unique perspective on the intricate interplay between neurological traits and high-performance behaviors. This study aligns with advancing neuroinformatics by proposing a novel framework designed to capture and analyze the...

 Read full article:

<https://www.frontiersin.org/articles/10.3389/fninf.2025.1557879>

Large language models can extract metadata for annotation of human neuroimaging publications

 Jessica A.
Turner

 2025-08-20

 1
min

 171
words


FRONTIERS NEUROINFORMATICS


Summary: We show that recent (mid-to-late 2024) commercial large language models (LLMs) are capable of good quality metadata extraction and annotation with very little work on the part of investigators for several exemplar real-world annotation tasks in the neuroimaging literature. We investigated the GPT-4o...

 Read full article:


<https://www.frontiersin.org/articles/10.3389/fninf.2025.1609077>

A correlation-based tool for quantifying membrane periodic skeleton associated periodicity

 Hanne B.
Rasmussen


 2025-08-22

 1
min

 156
words


FRONTIERS NEUROINFORMATICS

Summary: IntroductionThe advent of super-resolution microscopy revealed the membrane-associated periodic skeleton (MPS), a specialized neuronal cytoskeletal structure composed of actin rings spaced 190 nm apart by two spectrin dimers. While numerous ion channels, cell adhesion molecules, and signaling protei...

 Read full article:

<https://www.frontiersin.org/articles/10.3389/fninf.2025.1628538>

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

 Aleksandra Kawala-Sterniuk



2025-08-29



1
min



279
words

FRONTIERS NEUROINFORMATICS

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



Read full article:

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

Correction: Multi-label remote sensing classification with self-supervised gated multi-modal transformers

 Lihong Wan



2025-08-18



1
min



0
words


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Transformer-based multimodal precision intervention model for enhancing diaphragm function in elderly patients

 Ding
Lu

 2025-08-18

 1
min

 183
words

FRONTIERS COMPUTATIONAL NEUROSCIENCE


Summary: Diaphragm dysfunction represents a significant complication in elderly patients undergoing mechanical ventilation, often resulting in extended intensive care stays, unsuccessful weaning attempts, and increased healthcare expenditures. To address the deficiency of precise, real-time decision support ...

 Read full article:


<https://www.frontiersin.org/articles/10.3389/fncom.2025.1615576>

Privacy-preserving dementia classification from EEG via hybrid-fusion EEGNetv4 and federated learning

 Faisal
Saeed

 2025-08-18

 1
min

 179
words

FRONTIERS COMPUTATIONAL NEUROSCIENCE


Summary: As global life expectancy rises, a growing proportion of the population is affected by dementia, particularly Alzheimer's disease (AD) and Frontotemporal dementia (FTD). Electroencephalography (EEG) based diagnosis presents a non-invasive, cost effective alternative for early detection, yet existing...

 Read full article:

<https://www.frontiersin.org/articles/10.3389/fncom.2025.1617883>

Maximizing theoretical and practical storage capacity in single-layer feedforward neural networks

 Jean-Marie C.
Bouteiller

 2025-08-25

 1
min

 192
words


FRONTIERS COMPUTATIONAL NEUROSCIENCE


Summary: Artificial neural networks are limited in the number of patterns that they can store and accurately recall, with capacity constraints arising from factors such as network size, architectural structure, pattern sparsity, and pattern dissimilarity. Exceeding these limits leads to recall errors, eventu...

 Read full article:

<https://www.frontiersin.org/articles/10.3389/fncom.2025.1646810>

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

 Syn
Schmitt

 2025-08-26

 1
min

 243
words


FRONTIERS COMPUTATIONAL NEUROSCIENCE



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

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

Autonomous retrieval for continuous learning in associative memory networks

 Marcelo
Rozenberg

 2025-08-26  1
min

 140
words


FRONTIERS COMPUTATIONAL NEUROSCIENCE



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


 Read full article:

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

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

 Timothy
O'Leary

 2025-09-01  1
min

 238
words


FRONTIERS COMPUTATIONAL NEUROSCIENCE


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

 Read full article:


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

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

 Ridha
Ejbali

 17 2025-09-02

 1
min

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words


FRONTIERS COMPUTATIONAL NEUROSCIENCE

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

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

 Maria Carla
Piastra

 17 2024-06-14

 1
min

 64
words

OOSTENVELD ROBERT

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

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

 Julius
Welzel



2024-07-02


1
min72
words

OOSTENVELD ROBERT

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

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One hundred years of EEG for brain and behaviour research

 Pedro Valdes-
Sosa



2024-08-22

1
min2
words

OOSTENVELD ROBERT

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



Richard J A van
Wezel



2024-09-04



1
min



65
words

OOSTENVELD ROBERT

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



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[utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1BUB2BG5RbxOblm-hBbiJWEhGG43qIVrvGNHOTqBKva9wWrltM&fc=None&ff=20250915011947&v=2.18.0.post9+e462414](https://pubmed.ncbi.nlm.nih.gov/39229492/?utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1BUB2BG5RbxOblm-hBbiJWEhGG43qIVrvGNHOTqBKva9wWrltM&fc=None&ff=20250915011947&v=2.18.0.post9+e462414)

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



Krzysztof J
Gorgolewski



2024-09-23



1
min



82
words

OOSTENVELD ROBERT

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



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

Fanny
Quandt

17 2025-01-09

1
min

65
words

OOSTENVELD ROBERT

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

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

Luca
Pollonini

17 2025-01-27

1
min

70
words

OOSTENVELD ROBERT


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


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

 Lyuba
Zehl

 2025-06-26

 1
min

 67
words

OOSTENVELD ROBERT

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


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

 Tim M
Tierney

 2025-08-13

 1
min

 74
words

OOSTENVELD ROBERT


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


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Optimal configuration of on-scalp OPMs with fixed channel counts

 Robert
Oostenveld

 2025-08-13  1
min

 69
words

OOSTENVELD ROBERT


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



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A Stereo Synchronization Method for Consumer-Grade Video Cameras to Measure Multi-Target 3D Displacement Using Image Processing in Shake Table Experiments

 Yuan-Sen
Yang

 2025-09-13  1
min

 63
words

LOW VISION


Summary: The use of consumer-grade cameras for stereo vision provides a cost-effective, non-contact method for measuring three-dimensional displacement in civil engineering experiments. However, obtaining accurate 3D coordinates requires accurate temporal alignment of several unsynchronized cameras, which is...

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Real-Time Driver Attention Detection in Complex Driving Environments via Binocular Depth Compensation and Multi-Source Temporal Bidirectional Long Short-Term Memory Network

 Huajie
Liu

 2025-09-13

 1
min

 62
words

LOW VISION

Summary: Driver distraction is a key factor contributing to traffic accidents. However, in existing computer vision-based methods for driver attention state recognition, monocular camera-based approaches often suffer from low accuracy, while multi-sensor data fusion techniques are compromised by poor real-ti...

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Tracking-Based Denoising: A Trilateral Filter-Based Denoiser for Real-World Surveillance Video in Extreme Low-Light Conditions



Chen

Lv



17

2025-09-13



1

min



75

words

LOW VISION

Summary: Video denoising in extremely low-light surveillance scenarios is a challenging task in computer vision, as it suffers from harsh noise and insufficient signal to reconstruct fine details. The denoising algorithm for these scenarios encounters challenges such as the lack of ground truth, and the nois...

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A Unified Preprocessing Pipeline for Noise-Resilient Crack Segmentation in Leaky Infrastructure Surfaces



Jeongho

Cho



17

2025-09-13



1

min



67


words


LOW VISION

Summary: Wet cracks caused by leakage often exhibit visual and structural distortions due to surface contamination, salt crystallization, and corrosion byproducts. These factors significantly degrade the performance of sensor- and vision-based crack detection systems. In moist environments, the initiation an...


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U-ResNet, a Novel Network Fusion Method for Image Classification and Segmentation

 Yaqing
Song

 2025-09-13

 1
min

 65
words

LOW VISION


Summary: Image classification and segmentation are important tasks in computer vision. ResNet and U-Net are representative networks for image classification and image segmentation, respectively. Although many scholars used to fuse these two networks, most integration focuses on image segmentation with U-Net,...


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Serum Vitamin D Levels as Predictors of Response to Intravitreal Anti-VEGF Therapy in Diabetic Macular Edema: A Clinical Correlation Study

 Ana Maria
Stoica

 2025-09-13

 1
min

 66
words

LOW VISION


Summary: Our study explored the role of serum 25-hydroxyvitamin D [25(OH)D] levels as an indicator of response to intravitreal anti-vascular endothelial growth factor (anti-VEGF) therapy in patients with diabetic macular edema (DME), highlighting functional and anatomical outcomes linked to systemic biomarkers...


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Visual Outcomes of a Non-Diffractive Extended Depth-of-Focus Intraocular Lens in Patients with Early-Stage Age-Related Macular Degeneration

 Celia Sánchez-Ramos

 2025-09-13

 1 min

 66 words

LOW VISION


Summary: Background/Objectives: Age-related macular degeneration (AMD) is a leading cause of visual impairment in older adults and often coexists with cataracts. The indication of presbyopia-correcting intraocular lenses (IOLs) in these patients remains controversial. This study aimed to evaluate the clinica...

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Use of Mechanical Enhanced Colonoscopy to Improve Polyp Detection During Colorectal Cancer Screening: A Real-World Healthcare Database Analysis

 Seth A
Gross

 2025-09-13

 1
min

 71
words

LOW VISION


Summary: Introduction: High performance colonoscopy requires the monitoring of an individual's adenoma detection rate (ADR). The Endocuff (EndoCuff Vision, Olympus America Inc., Center Valley, PA, USA) is an endoscopic distal attachment device that increases surface area exposure during colonoscopy. While st...

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Metabolic alterations in diabetic patients: aqueous humor profiling for biomarker discovery

 Guna
Laganovska

 2025-09-13

 1
min

 64
words

LOW VISION


Summary: Diabetic retinopathy, a leading cause of vision loss in working-age populations, is a severe complication of diabetes mellitus. Metabolomics, a key approach in systems biology, offers insights into the complex pathophysiology of diabetes by analyzing low-molecular-weight compounds in biological cont...


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Evaluating the predictive potential of Th1 (IFN- γ +/CD4+/CD4+/) in rapidly progressive amyotrophic lateral sclerosis

 Hao Zhang

 2025-09-14

 1 min

 31 words

LOW VISION


Summary: CONCLUSIONS: Th1/CD4⁺ (with an optimal cutoff value of 16.21) was established as an independent risk factor for rapid progression in ALS. The machine learning model incorporating Th1/CD4⁺ demonstrated strong predictive performance.


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My Broken Heart

 Ashley C Rider

 2025-05-08

 1 min

 34 words

TACTILE ACUITY


Summary: AUDIENCE: The target audience for the key learning objectives of this Left-Ventricular Assist Device (LVAD) simulation are emergency medicine residents. Other team members such as attendings, nurses, pharmacists, and technicians could potentially be integrated.


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Distributions of orofacial two-point discrimination threshold: A cross-sectional study in healthy population and patients with pain-related temporomandibular disorders

 Xin
Xiong

 17 2025-05-15

 1
min

 70
words

TACTILE ACUITY


Summary: CONCLUSION: Pain-related TMDs patients had weaker orofacial tactile acuity, which was consistent in gender subgroups, except for the temporal region of males. Healthy males had weaker tactile acuity compared to females in TMJ and temporal regions. No significant gender effect on orofacial tactile ac...




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

 Thomas Hummel

 2025-05-28  1 min  70 words


TACTILE ACUITY

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

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

 Hiroyuki Kajimoto

 2025-06-17  1 min  75 words

TACTILE ACUITY

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

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

 Leah R
Bent



2025-06-27



1
min



69
words

TACTILE ACUITY

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



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Directional vibro-tactile hazard warnings for drivers with vision impairments

 Alex R
Bowers



2025-07-02



1
min



80
words

TACTILE ACUITY

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






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

 Cecilia
Guariglia

 2025-08-01  1
min

 64
words

TACTILE ACUITY

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



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

 Eric
Fjeldheim

 2025-08-24  1
min

 22
words

TACTILE ACUITY


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


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

 Paula Anne Newman-Casey

 2025-09-09

 1 min

 74 words


TACTILE ACUITY


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

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

 Sviatoslav N Bagriantsev

 2025-09-13

 1 min

 58 words

TACTILE ACUITY

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

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WAYVision: A hybrid deep learning approach for recognizing handwritten Kannada Braille using wavelet transformation and attention based YOLOv5



Shobha Rani

N



2025-08-25



1

min



64


words

BRAILLE

Summary: Handwritten Braille character recognition presents a significant challenge in the field of assistive technology, especially with the inclusion of various linguistic scripts such as Kannada. The data set is uniquely curated, combining ground-truth data from Kaggle and real-world samples collected fro...

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

 Joseph Paul
Nemargut



2025-08-25



1
min



62
words

BRaille


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

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

 Jianming
Xu



2025-08-25



1
min



62
words

BRaille

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



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

 Million
Phiri

 2025-08-26  1
min

 46
words

BRaille


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



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Explosion-powered eversible tactile displays

 Robert F
Shepherd

 2025-08-27  1
min

 64
words

BRaille


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


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

 Zhijun
Ma

 2025-08-28

 1
min

 57
words

[BRAILLE](#)


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


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

 Min
Zhang

 2025-08-28

 1
min

 64
words

[BRAILLE](#)

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

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



Hao
Lin



2025-09-01



1
min



72
words

BRAILLE

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



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



Ji
Liu



2025-09-02



1
min



56
words

BRAILLE

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



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

Önder İşlek

17 2025-09-12

1 min

55 words

BRaille

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

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Personalized High-Definition Transcranial Direct Current Stimulation for the Treatment of Depression: A Randomized Clinical Trial

Katherine Narr

17 2025-09-11

1 min

66 words

TDCS TACS TRNS


Summary: CONCLUSIONS AND RELEVANCE: In this randomized clinical trial of HD-tDCS in participants with moderate to severe depression, the 12-day HD-tDCS therapy was observed to significantly improve mood with a moderate effect size. Similar effect sizes in pharmacotherapy, psychotherapy, and conventional tDCS...


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Effect of theta-transcranial alternating current stimulation on working memory performance among healthy adults: A systematic review and meta-analysis

 Rui-Ke
Zhang

 2025-09-11

 1
min

 27
words

TDCS TACS TRNS

Summary: CONCLUSION: Theta-tACS enhances working memory in healthy adults, with effects modulated by the task type and protocol parameters, offering dual implications for cognitive enhancement and clinical interventions.


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Review of nonpharmacological interventions for delaying the effects of cerebral neuropathy caused by diabetes

 Lun-De
Liao

 2025-09-12

 1
min

 67
words

TDCS TACS TRNS


Summary: Diabetic peripheral neuropathy (DPN) is a debilitating complication of diabetes that affects nearly half of diabetic patients and manifests as chronic pain, sensory loss, and motor dysfunction. The limited efficacy of traditional pharmacological treatments, coupled with their side effects, has inten...



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Online HD-tRNS over the right temporoparietal junction modulates social inference but not motor coordination

 Guillaume
Dumas

 2025-09-12  1
min

 68
words

TDCS TACS TRNS


Summary: Social interactions are fundamental to human cognition, with the right temporoparietal junction (rTPJ) playing a key role in integrating motor coordination and social inference. While transcranial random noise stimulation (tRNS) is a promising technique for modulating cortical excitability in real t...



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Neural Correlates of Borderline Personality Disorder (BPD) Based on Electroencephalogram (EEG)-A Mechanistic Review

 Donata
Kurpas

 2025-09-13  1
min

 62
words

TDCS TACS TRNS


Summary: Borderline Personality Disorder (BPD) is marked by emotional dysregulation, instability in self-image and relationships, and high impulsivity. While functional magnetic resonance imaging (fMRI) studies have provided valuable insights into the disorder's neural correlates, electroencephalography (EEG...


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Burnout and the Brain-A Mechanistic Review of Magnetic Resonance Imaging (MRI) Studies

 Donata
Kurpas

 2025-09-13

 1
min

 64
words

TDCS TACS TRNS


Summary: Occupational burnout is ubiquitous yet still debated as a disease entity. Previous reviews surveyed multiple biomarkers but left their neural substrate unclear. We therefore asked: What, if any, reproducible magnetic-resonance signature characterises burnout? Following PRISMA principles adapted for ...


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From Immediate Impact to Enduring Change: A Transcriptomic Comparison of tDCS's Temporal Effects and Its Long-Term Equivalence with TMS

 Hanoch
Kaphzan

 2025-09-13

 1
min

 63
words

TDCS TACS TRNS


Summary: Transcranial Direct Current Stimulation (tDCS) and Transcranial Magnetic Stimulation (TMS) are neuromodulatory techniques with therapeutic potential for similar disorders; however, their molecular effects require further elucidation, and whether both strategies work in similar biological pathways is...

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General Innovations in Pain Management

 Alaa Abd-
Elsayed



2025-09-13



1
min



74
words

TDCS TACS TRNS

Summary: Chronic pain management is constantly evolving, and our literature review aims to describe the general innovations happening within the field. The need for advancements in chronic pain is a necessity, as debilitating back pain and other forms of chronic pain are significant issues in the United Stat...





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Behavioral outcomes after tDCS treatment during immediate post-intervention and follow-up periods in children and adolescents diagnosed with attention-deficit/hyperactivity disorder: a systematic review and meta-analysis on randomized sham-controlled trials

 Kuo-Chuan
Hung

 2025-09-13

 1
min

 58
words

TDCS TACS TRNS

Summary: This meta-analysis aimed at elucidating the effectiveness of transcranial direct current stimulation (tDCS) in improving behavioral symptoms of attention deficit/hyperactivity disorder (ADHD) in children/adolescents during the immediate post-intervention/follow-up periods and identifying potential c...

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Effect of HD-tDCS targeting the DLPFC on cognitive ability and flight simulation performance in healthy adults

Xia
Zhu

2025-09-14

1
min

36
words

TDCS TACS TRNS

Summary: OBJECTIVE: This study aimed to investigate the effects of high-definition transcranial direct current stimulation (HD-tDCS) on attention, working memory, inhibitory control, and cognitive flexibility in healthy adults, and to examine its association with flight simulation performance.

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Evaluating the effects of multimodal EEG-fNIRS neurofeedback for motor imagery: An experimental platform and study protocol

Pierre
Maurel

2025-09-11

1
min

61
words

FNIRS

Summary: BACKGROUND: Neurofeedback (NF) enables the self-regulation of brain activity through real-time feedback extracted from brain measures. Recently, the combination of several neuroimaging methods to characterize brain activity has led to growing interest in NF. The integration of various portable recor...

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The Emotional and Cognitive Effects of Synchronizing to Music During Acute Exercise: An fNIRS Study



William Forde
Thompson



2025-09-12



1
min



61
words

FNIRS

Summary: Synchronizing movements to music enhances exercise performance and enjoyment, yet its short-term effects on attention and cognition remain underexplored. This study examined the influence of synchronous music, asynchronous music, and a no-music control condition on emotional responses, perceived exe...



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Interbrain Synchrony Mitigates Extremism Within Echo Chambers



Simone Shamay-
Tsoory



2025-09-12



1
min



65
words

FNIRS

Summary: People tend to engage with content that aligns with their pre-existing attitudes, forming echo chambers that reinforce biases and may amplify extremism. Here, we investigate whether discussions within homogeneous groups drive attitudinal extremity and whether interbrain synchronized activity between...



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An Empirical Study on the Impact of Different Interaction Methods on User Emotional Experience in Cultural Digital Design

 Feng
Zou

 17 2025-09-13

 1
min

 64
words

FNIRS


Summary: Traditional culture plays a vital role in shaping national identity and emotional belonging, making it imperative to explore innovative strategies for its digital preservation and engagement. This study investigates how interaction design in cultural digital games influences users' emotional experie...


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TopoTempNet: A High-Accuracy and Interpretable Decoding Method for fNIRS-Based Motor Imagery

 Zhejun
Kuang

 17 2025-09-13

 1
min

 63
words

FNIRS

Summary: Functional near-infrared spectroscopy (fNIRS) offers a safe and portable signal source for brain-computer interface (BCI) applications, particularly in motor imagery (MI) decoding. However, its low sampling rate and hemodynamic delay pose challenges for temporal modeling and dynamic brain network an...


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Compact Colocated Bimodal EEG/fNIRS Multi-Distance Sensor

 Angélique
Rasclé

 2025-09-13

 1
min

 70
words

FNIRS


Summary: At present, it is a real challenge to measure brain signals outside of the lab with portable systems that are robust, comfortable and easy to use. We propose in this article a bimodal electroencephalography-functional near-infrared spectroscopy (EEG-fNIRS) sensor whose spatial geometry allows the ro...


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Do newborns detect prosodic violations in an unfamiliar language at birth?

 Judit
Gervain

 2025-09-14

 1
min

 65
words

FNIRS

Summary: Experience with language starts prenatally, as the intrauterine environment allows speech prosody to get through. Martinez-Alvarez and colleagues (2023) demonstrated that newborns detect utterance-level prosodic violations in the language they heard prenatally, French. It remains unknown, however, w...

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The sensory-motor overlap in motor imitation: evidence from motor imagery

 Shengjun
Wu

 17

2025-09-14



1
min



70
words

FNIRS

Summary: Motor imitation is crucial for acquiring motor skills and social cognition, yet the theoretical understanding of its underlying mechanism remains partial. The direct matching hypothesis suggests that the overlap between observed and executed motions is crucial for effective motor imitation. This stu...

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Your smiles inspired my smiles: the interpersonal neural coupling of positive emotion contagion during social interactions

 Yanmei
Wang

 17

2025-09-14



1
min



70
words

FNIRS


Summary: Emotional contagion refers a process that by which the emotions of a perceiver become more similar to those of others as a result of exposure to these emotions. The present study investigated the behavioral and interpersonal neural coupling mechanisms underlying positive emotional contagion. We recr...



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Abnormal Brain Activation Patterns in Patients With Post-Acute Sequelae of COVID-19 (PASC) During Recovery: A fNIRS Study

 Xiaoying Tang

 2025-09-14  1 min

 69 words

fNIRS

Summary: COVID-19 has increased the likelihood of cognitive impairment in patients with post-acute sequelae of COVID-19 (PASC). There is a lack of direct evidence regarding the working memory performance of mild patients during the recovery period. This study employed functional near-infrared spectroscopy (f...

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EEGOpt: A performance efficient Bayesian optimization framework for automated EEG signal classification

 Monisha Chakraborty

 2025-09-11  1 min

 34 words

BRAIN COMPUTER INTERFACE

Summary: CONCLUSION: EEGOpt is a scalable and interpretable framework that automatically identifies optimal signal processing and classification strategies adaptable to EEG datasets, making it a valuable tool for neuroscientific research, diagnostics, and brain-computer interface development.


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Stretchable Multilevel Mesh Brain Electrodes for Neuroplasticity in Glioma Patients Undergoing Surgery

Xue
Feng

2025-09-12

1
min

63
words

BRAIN COMPUTER INTERFACE

Summary: Brain disease surgical treatment usually leads to neurological dysfunction. Electroencephalogram (EEG)-based neuroplasticity study may facilitate patient nerve function recovery from injury, allowing a return to normal activities. Due to the limitations of wound infections and hair barrier effects, ...

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2D Vanadium Carbide/Oxide Heterostructure-Based Artificial Sensory Neuron for Multi-Color Near-Infrared Object Recognition

 Jiahong Wang

 17

2025-09-12



1 min



58 words

BRAIN COMPUTER INTERFACE

Summary: Near-infrared (NIR) photon detection and object recognition are crucial technologies for all-weather target identification in autonomous navigation, nighttime surveillance, and tactical reconnaissance. However, conventional NIR detection systems, which rely on photodetectors and von Neumann computin...

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[utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1rSUu--](https://pubmed.ncbi.nlm.nih.gov/40937924/?utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1rSUu--tbw4049Wgf_RdKXdNCvGW0lVBZFpHe7zaN4k4DwoD5&fc=None&ff=20250915011925&v=2.18.0.post9+e462414)

[tbw4049Wgf_RdKXdNCvGW0lVBZFpHe7zaN4k4DwoD5&fc=None&ff=20250915011925&v=2.18.0.post9+e462414](https://pubmed.ncbi.nlm.nih.gov/40937924/?utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1rSUu--tbw4049Wgf_RdKXdNCvGW0lVBZFpHe7zaN4k4DwoD5&fc=None&ff=20250915011925&v=2.18.0.post9+e462414)

Sequence action representations contextualize during early skill learning



Leonardo G
Cohen



2025-09-12



1
min



68
words

BRAIN COMPUTER INTERFACE

Summary: Activities of daily living rely on our ability to acquire new motor skills composed of precise action sequences. Here, we asked in humans if the millisecond-level neural representation of an action performed at different contextual sequence locations within a skill differentiates or remains stable d...



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[utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1rSUu--](https://pubmed.ncbi.nlm.nih.gov/40938318/?utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1rSUu--tbw4049Wgf_RdKXdtNCvGW0IVBZFpHe7zaN4k4DwoD5&fc=None&ff=20250915011925&v=2.18.0.post9+e462414)

[tbw4049Wgf_RdKXdtNCvGW0IVBZFpHe7zaN4k4DwoD5&fc=None&ff=20250915011925&v=2.18.0.post9+e462414](https://pubmed.ncbi.nlm.nih.gov/40938318/?utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1rSUu--tbw4049Wgf_RdKXdtNCvGW0IVBZFpHe7zaN4k4DwoD5&fc=None&ff=20250915011925&v=2.18.0.post9+e462414)

Classification of Different Motor Imagery Tasks with the Same Limb Using Electroencephalographic Signals



Carlos Julio Tierra-
Criollo



2025-09-13



1
min



69
words

BRAIN COMPUTER INTERFACE

Summary: Stroke is a neurological condition that often results in long-term motor deficits. Given the high prevalence of motor impairments worldwide, there is a critical need to explore innovative neurorehabilitation strategies that aim to enhance the quality of life of patients. One promising approach invol...




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[utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1rSUu--](https://pubmed.ncbi.nlm.nih.gov/40942721/?utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1rSUu--tbw4049Wgf_RdKXdtNCvGW0IVBZFpHe7zaN4k4DwoD5&fc=None&ff=20250915011925&v=2.18.0.post9+e462414)

[tbw4049Wgf_RdKXdtNCvGW0IVBZFpHe7zaN4k4DwoD5&fc=None&ff=20250915011925&v=2.18.0.post9+e462414](https://pubmed.ncbi.nlm.nih.gov/40942721/?utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1rSUu--tbw4049Wgf_RdKXdtNCvGW0IVBZFpHe7zaN4k4DwoD5&fc=None&ff=20250915011925&v=2.18.0.post9+e462414)

TopoTempNet: A High-Accuracy and Interpretable Decoding Method for fNIRS-Based Motor Imagery

 Zhejun
Kuang

 17

2025-09-13



1
min



63
words

BRAIN COMPUTER INTERFACE

Summary: Functional near-infrared spectroscopy (fNIRS) offers a safe and portable signal source for brain-computer interface (BCI) applications, particularly in motor imagery (MI) decoding. However, its low sampling rate and hemodynamic delay pose challenges for temporal modeling and dynamic brain network an...


 **Read full article:**

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[tbw4049Wgf_RdKXdtNCvGW0lVBZFpHe7zaN4k4DwoD5&fc=None&ff=20250915011925&v=2.18.0.post9+e462414](https://pubmed.ncbi.nlm.nih.gov/40942766/?utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1rSUu--tbw4049Wgf_RdKXdtNCvGW0lVBZFpHe7zaN4k4DwoD5&fc=None&ff=20250915011925&v=2.18.0.post9+e462414)

A new wide-scope, multi-biomarker wastewater-based epidemiology analytical method to monitor the health and well-being of inhabitants at a metropolitan scale

 Barbara Kasprzyk-Hordern

 2025-09-13  1 min  64 words

BRAIN COMPUTER INTERFACE

Summary: This manuscript establishes a new, comprehensive biomarker list and a multiresidue trace quantification method for community-wide health and well-being assessment at a metropolitan scale using wastewater-based epidemiology (WBE) and mass spectrometry pipelines. This method enables the quantification...

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Thalamocortical dysrhythmia-related sleep spindle desynchronization in patients with tinnitus



Yuanqing
Li



2025-09-13



1
min



68
words

BRAIN COMPUTER INTERFACE

Summary: Patients with tinnitus commonly suffer from sleep problems, and the underlying neural mechanisms remain unclear. Previous studies have focused primarily on the correlation between patients' sleep structure and tinnitus, lacking exploration into the links between sleep problems and the underlying pat...



Read full article:

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[tbw4049Wgf_RdKXdtNCvGW0IVBZFpHe7zaN4k4DwoD5&fc=None&ff=20250915011925&v=2.18.0.post9+e462414](https://pubmed.ncbi.nlm.nih.gov/40945543/?utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1rSUu--tbw4049Wgf_RdKXdtNCvGW0IVBZFpHe7zaN4k4DwoD5&fc=None&ff=20250915011925&v=2.18.0.post9+e462414)

Neurodevelopmental deviations in schizophrenia: Evidences from multimodal connectome-based brain ages



Huafu
Chen



2025-09-13



1
min



21
words

BRAIN COMPUTER INTERFACE

Summary: CONCLUSION: These findings from a multimodal brain age perspective suggest that advanced brain age gaps exist early in youths with schizophrenia.



Read full article:

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[utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1rSUu--](https://pubmed.ncbi.nlm.nih.gov/40945816/?utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1rSUu--tbw4049Wgf_RdKXdtNCvGW0IVBZFpHe7zaN4k4DwoD5&fc=None&ff=20250915011925&v=2.18.0.post9+e462414)

[tbw4049Wgf_RdKXdtNCvGW0IVBZFpHe7zaN4k4DwoD5&fc=None&ff=20250915011925&v=2.18.0.post9+e462414](https://pubmed.ncbi.nlm.nih.gov/40945816/?utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1rSUu--tbw4049Wgf_RdKXdtNCvGW0IVBZFpHe7zaN4k4DwoD5&fc=None&ff=20250915011925&v=2.18.0.post9+e462414)

MSAttNet: Multi-scale attention convolutional neural network for motor imagery classification



Jing

Jin



2025-09-14



1

min



16

words

BRAIN COMPUTER INTERFACE

Summary: CONCLUSION: MSAttNet effectively addresses the challenges of MI-EEG datasets, improving decoding performance by robust feature extraction.



Read full article:

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[tbw4049Wgf_RdKXdtNCvGW0IVBZFpHe7zaN4k4DwoD5&fc=None&ff=20250915011925&v=2.18.0.post9+e462414](https://pubmed.ncbi.nlm.nih.gov/40946865/?utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1rSUu--tbw4049Wgf_RdKXdtNCvGW0IVBZFpHe7zaN4k4DwoD5&fc=None&ff=20250915011925&v=2.18.0.post9+e462414)

Anatomical connectivity-based parcellation of the human orbitofrontal cortex.



2025-07-10



1

min



222

words

BEHAVIORAL NEUROSCIENCE

Summary: The orbitofrontal cortex (OFC) is critical for learning and decision making, but its organization in terms of anatomical connections to other brain areas is not well understood in humans. Here we used diffusion magnetic resonance imaging and probabilistic tractography to characterize the cortical an...



Read full article:

<http://doi.org/10.1037/bne0000628>

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



2025-07-10

1
min155
words

BEHAVIORAL NEUROSCIENCE

Summary: Individuals differ in sensitivity to the adverse consequences of their actions. We have shown that these differences can be linked to differences in correctly learning causal relationships between actions and their negative consequences. To further assess this, here we used a conditioned punishment ...



Read full article:

<http://doi.org/10.1037/bne0000627>

Deep brain stimulation of nucleus basalis of meynert: Effect of stimulation mode and duration on learning in rat model of dementia.



2025-06-09

1
min273
words

BEHAVIORAL NEUROSCIENCE

Summary: Deep brain stimulation (DBS) of the nucleus basalis of Meynert (NBM) has been preliminarily investigated as a potential treatment for dementia. The degeneration of NBM cholinergic neurons is a pathological feature of many forms of dementia. Although NBM stimulation has been demonstrated to improve l...



Read full article:

<http://doi.org/10.1037/bne0000625>

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



2025-05-15

1
min230
words

BEHAVIORAL NEUROSCIENCE

Summary: Extinction is fundamental to adaptive behavior in that it allows organisms to alter previously conditioned behaviors based on the prevailing environmental contingencies. Extinguished responses, however, will renew when the conditioned stimulus is presented outside the extinction context. There has b...



Read full article:

<http://doi.org/10.1037/bne0000626>

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



2025-04-07

1
min271
words

BEHAVIORAL NEUROSCIENCE




Summary: We have previously demonstrated that gonadally intact female rats become habitual following around 120 response–outcome (R-Os) exposures during operant training. This rapid development of habit does not occur in gonadally intact male rats, which remain goal-directed up to at least 320 R-Os. The pres...



Read full article:

<http://doi.org/10.1037/bne0000622>

Monthly Updates [March]

 2025-03-01  2 min  434 words

FMHY


Summary:


INFO

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

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

Python Interview Questions: From Basics to Advanced

 /u/Numerous-Trust7439

 2025-09-14


 1 min

 174 words




REDDIT PYTHON

Summary:

The article titled "Python Interview Questions: From Basics to Advanced" [Python Interview Questions: From Basics to Advanced](https://www.lockedina.com/blog/python-interview-questions-from-basics-to-advanced) provides a comprehensive guide to ...

 Read full article:
https://www.reddit.com/r/Python/comments/1nh1lj2/python_interview_questions_from_basics_to_advanced/

OCSP Service Has Reached End of Life

 2025-09-14  1 min  2 words

HACKER NEWS




Summary: [Comments](https://news.ycombinator.com/item?id=45242591)



Read full article:

<https://letsencrypt.org/2025/08/06/ocsp-service-has-reached-end-of-life>

"Hello, Is This Anna?": Unpacking the Lifecycle of Pig-Butchering Scams

 2025-09-15  1 min  2 words

HACKER NEWS

Summary: [Comments](https://news.ycombinator.com/item?id=45245962)



Read full article:

<https://arxiv.org/abs/2503.20821>

"Hello, Is This Anna?": Unpacking the Lifecycle of Pig-Butchering Scams



stmw



2025-09-15

1
min13
words

HACKER NEWS

Summary:

Article URL: <https://arxiv.org/abs/2503.20821>

Comments URL: <https://news.ycombinator.com/item?id=45245962>

Points: 9

Comments: 0



Read full article:

<https://arxiv.org/abs/2503.20821>

Applications now being accepted for UC-Davis/SDSU ERP Boot Camp, July 31 – August 9, 2023

Steve
Luck

2023-01-16

1
min108
words

ERP BOOT CAMP

Summary:

The next 10-day ERP Boot Camp will be held July 31 – August 9, 2023 in San Diego, California. We are now taking applications, which will be due by April 1, 2023. [Click here](https://erpinfo.org/summer-boot-camp) for more information.


We are currently planning t...




Read full article:


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

ERP Decoding for Everyone: Software and Webinar

 Steve
Luck

 2023-06-23

 2
min


 420
words


ERP BOOT CAMP

Summary: You can access the recording https://video.ucdavis.edu/media/Virtual+ERP+Boot+CampA+Decoding+for+Everyone%2C+July+25+2023/1_lmwj6bu0 You can access the final PDF of the slides <https://ucdavis.box.com/s/f...>


 Read full article:
<https://erpinfo.org/blog/2023/6/23/decoding-webinar>

New Papers: Optimal Filter Settings for ERP Research

 Steve
Luck

 2024-02-04

 2
min


 568
words

ERP BOOT CAMP

Summary: Zhang, G., Garrett, D. R., & Luck, S. J. (in press). Optimal filters for ERP research I: A general approach for selecting filter settings. *Psychophysiology*. <https://doi.org/10.1111/psyp.14531> <https://doi.org/10.1111/psyp.14531> [<https://www...>


 Read full article:
<https://erpinfo.org/blog/2024/2/4/optimal-filters>

Important Changes to the 2024 ERP Boot Camp

 Steve
Luck

 17 2024-03-05

 2
min

 444
words

ERP BOOT CAMP

Summary:


We are disappointed to announce that we will not be holding a regular 10-day ERP Boot Camp this summer.


We have held Boot Camps nearly every summer since 2007, supported by a series of generous grants from NIMH that allowed us to provide scholarships for all attendees. Unf...

 Read full article:


<https://erpinfo.org/blog/2024/3/5/changes-to-the-2024-erp-boot-camp>

Registration is now full for the 2024 ERP Boot Camp

 Steve
Luck

 17 2024-03-16

 1
min

 106
words

ERP BOOT CAMP

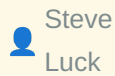
Summary:

The demand for the 2024 ERP Boot Camp was far beyond our expectations, and we reached our maximum registration of 30 people within one day. We already have a waiting list of over 30 people, so we have closed the registration site.

 Read full article:

<https://erpinfo.org/blog/2024/3/15/registration-full>

New Paper: Using Multivariate Pattern Analysis to Increase Effect Sizes for ERP Amplitude Comparisons



Steve
Luck



2024-06-10



2
min



525
words

ERP BOOT CAMP

Summary: Carrasco, C. D., Bahle, B., Simmons, A. M., & Luck, S. J. (2024). Using multivariate pattern analysis to increase effect sizes for event-related potential analyses. *Psychophysiology*, 61, e14570. <https://doi.org/10.1111/psyp.14570>



Read full article:

<https://erpinf.org/blog/2024/6/10/erp-core-decoding-paper>

New software package: ERPLAB Studio



Steve
Luck



2024-06-12



2
min



444
words

ERP BOOT CAMP

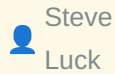
Summary: We are excited to announce the release of a new EEG/ERP analysis package, [ERPLAB Studio](https://github.com/ucdavis/erplab/releases). We think it's a huge improvement over the classic EEGLAB user interface. See our cheesy [video](https://www.youtube.com/watch?v=llaKVQ9DD6E)...



Read full article:

<https://erpinf.org/blog/2024/6/11/erplab-studio>

Recording and slides now available for ERPLAB Studio webinar



Steve
Luck



2024-06-28



1
min



30
words

ERP BOOT CAMP

Summary: We held a webinar to demonstration ERPLAB Studio on 28 June 2024. [Click here](https://youtu.be/k-nGv00rTP8) to access a recording. [Click here](https://ucdavis.box.com/s/4fseqz6327dtuouauj12rgvivvy1d1nmo) to access a PDF of the slides. <...



Read full article:

<https://erpinfo.org/blog/2024/6/28/recording-and-slides-now-available-for-erplab-studio-webinar>

New Paper: Does the P3b component reflect working memory updating?



Steve
Luck



2025-03-21



7
min



1547
words

ERP BOOT CAMP


Summary: Carrasco, C. D., Simmons, A. M., Kiat, J. E., & Luck, S. J. (in press). Enhanced working memory representations for rare events. *Psychophysiology*. <https://doi.org/10.1111/psyp.70038> [<https://doi.org/10.1101/2024.03.20...>]




Read full article:

<https://erpinfo.org/blog/2025/3/20/new-paper-oddball>

10-Day ERP Boot Camp to be held in Davis in Summer 2026

 Steve
Luck

 2025-08-20

 1
min

 138
words

ERP BOOT CAMP

Summary: We have received another 5 years of funding from the National Institute of Mental Health, so we plan to hold ERP Boot Camps in each of the next 5 summers. The next one will be in Davis, California in the Summer of 2026. The specific dates will be announced around January 1, 2026, and the...

 Read full article:

<https://erpinfo.org/blog/2025/8/20/boot-camp-summer-2026>

Unveiling the influence of facial expressions on EEG-based biometric system performance in ADHD and healthy children

 1
min

 14
words


NEUROSCIENCE JOURNAL


Summary: Publication date: 15 October 2025
Source: Neuroscience, Volume 585
Author(s): Maryam Safardoost, Zahra Tabanfar, Farnaz Ghassemi

 Read full article:


https://www.sciencedirect.com/science/article/pii/S0306452225008905?dgcid=rss_sd_all

Generation of synthetic TSPO PET maps from structural MRI images

 Marco L.
Loggia

 2025-09-08

 1
min

 250
words


FRONTIERS NEUROINFORMATICS


Summary: IntroductionNeuroinflammation, a pathophysiological process involved in numerous disorders, is typically imaged using [11C]PBR28 (or TSPO) PET. However, this technique is limited by high costs and ionizing radiation, restricting its widespread clinical use. MRI, a more accessible alternative, is com...

 Read full article:


<https://www.frontiersin.org/articles/10.3389/fninf.2025.1633273>

Individualized connectomic tACS immediately improves oscillatory network with language facilitation in post-stroke aphasia: a feasibility study of a dysfunctome-based targeting approach

 Mehdi
Bakhtiar


 2025-09-04

 1
min

 289
words


FRONTIERS COMPUTATIONAL NEUROSCIENCE


Summary: IntroductionPeople with post-stroke aphasia (PSA) exhibit significant interindividual variability attributed to distinctive network disruption patterns across individuals. This complexity limits the effectiveness of conventional one-size-fits-all brain stimulation approaches, but to date no individu...

 Read full article:


<https://www.frontiersin.org/articles/10.3389/fncom.2025.1635497>

Social and non-social directional cues differentially orient attention by learned habit

 Anna
Pecchinenda

 17 2025-09-09

 1
min

 234
words

FRONTIERS HUMAN NEUROSCIENCE


Summary: Introduction Since an early age, we are implicitly motivated to use the direction of eye gaze of others to learn about the environment, and we orient our attention in space based on this directional signal. Similarly, we orient our attention based on the direction of arrow signs. In both cases, the m...

 Read full article:

<https://www.frontiersin.org/articles/10.3389/fnhum.2025.1636726>

Gender differences in brain activity underlying acupuncture sensations at LR3: a task-based fMRI study

 Zi-Jian
Wu

 17 2025-09-09

 1
min

 291
words

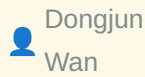
FRONTIERS HUMAN NEUROSCIENCE

Summary: Background Acupuncture has been practiced in China for centuries, and LR3 (Taichong) is a key acupoint of the liver meridian that has been widely studied. Whether its central mechanism differs by sex remains unclear, because earlier work used single-sex or mixed-sex samples without stratified analysis...

 Read full article:

<https://www.frontiersin.org/articles/10.3389/fnhum.2025.1649644>

Case Report: Dyke-Davidoff-Masson syndrome resulting from a rare combination of hypoplastic left posterior cerebral artery and ipsilateral fetal-type posterior communicating artery



Dongjun
Wan



2025-09-09



1
min



166
words

FRONTIERS HUMAN NEUROSCIENCE

Summary: Introduction Dyke-Davidoff-Masson syndrome (DDMS) is a rare neurological disorder characterized by unilateral hemiparesis, facial asymmetry, severe epilepsy, and intellectual disability. While congenital DDMS is predominantly attributed to anterior circulation anomalies [e.g., internal carotid artery...



Read full article:

<https://www.frontiersin.org/articles/10.3389/fnhum.2025.1629156>

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



Kianoush
Nazarpour



2025-07-28



1
min



150
words

FRONTIERS NEUROBOTICS

Summary: Myoelectric control systems translate electromyographic signals (EMG) from muscles into movement intentions, allowing control over various interfaces, such as prosthetics, wearable devices, and robotics. However, a major challenge lies in enhancing the system's ability to generalize, personalize, an...



Read full article:

<https://www.frontiersin.org/articles/10.3389/fnbot.2025.1604453>

Integrated neural network framework for multi-object detection and recognition using UAV imagery

Hui
Liu



2025-07-30



2
min



516
words

FRONTIERS NEUROBOTICS

Summary: IntroductionAccurate vehicle analysis from aerial imagery has become increasingly vital for emerging technologies and public service applications such as intelligent traffic management, urban planning, autonomous navigation, and military surveillance. However, analyzing UAV-captured video poses seve...



Read full article:

<https://www.frontiersin.org/articles/10.3389/fnbot.2025.1643011>

NeuroVI-based wave compensation system control for offshore wind turbines



Tianhong
Ding



2025-07-30



1
min



193
words

FRONTIERS NEUROBOTICS


Summary: In deep-sea areas, the hoisting operation of offshore wind turbines is seriously affected by waves, and the secondary impact is prone to occur between the turbine and the pile foundation. To address this issue, this study proposes an integrated wave compensation system for offshore wind turbines bas...




Read full article:

<https://www.frontiersin.org/articles/10.3389/fnbot.2025.1648713>

Fine-grained image classification using the MogaNet network and a multi-level gating mechanism

 Su
Chen

 2025-08-06

 1
min

 182
words


FRONTIERS NEUROBOTICS


Summary: Fine-grained image classification tasks face challenges such as difficulty in labeling, scarcity of samples, and small category differences. To address this problem, this study proposes a novel fine-grained image classification method based on the MogaNet network and a multi-level gating mechanism. ...

 Read full article:


<https://www.frontiersin.org/articles/10.3389/fnbot.2025.1630281>

Tri-manual interaction in hybrid BCI-VR systems: integrating gaze, EEG control for enhanced 3D object manipulation

 Shaw-mung
Lee

 2025-08-14

 1
min

 192
words

FRONTIERS NEUROBOTICS

Summary: Brain-computer interface (BCI) integration with virtual reality (VR) has progressed from single-limb control to multi-limb coordination, yet achieving intuitive tri-manual operation remains challenging. This study presents a consumer-grade hybrid BCI-VR framework enabling simultaneous control of two...

 Read full article:

<https://www.frontiersin.org/articles/10.3389/fnbot.2025.1628968>

4D trajectory lightweight prediction algorithm based on knowledge distillation technique



Weizheng
Xie



2025-08-22



1
min



217
words

FRONTIERS NEUROBOTICS

Summary: IntroductionTo address the challenges of current 4D trajectory prediction—specifically, limited multi-factor feature extraction and excessive computational cost—this study develops a lightweight prediction framework tailored for real-time air-traffic management.MethodsWe propose a hybrid RCBAM–TCN–L...



Read full article:

<https://www.frontiersin.org/articles/10.3389/fnbot.2025.1643919>

Variable admittance control with sEMG-based support for wearable wrist exoskeleton



Nicole
Wenderoth



2025-09-01



1
min



262
words

FRONTIERS NEUROBOTICS

Summary: IntroductionWrist function impairment is common after stroke and heavily impacts the execution of daily tasks. Robotic therapy, and more specifically wearable exoskeletons, have the potential to boost training dose in context-relevant scenarios, promote voluntary effort through motor intent detectio...



Read full article:

<https://www.frontiersin.org/articles/10.3389/fnbot.2025.1562675>

Imitation-relaxation reinforcement learning for sparse badminton strikes via dynamic trajectory generation



Hongtao
Wang



2025-09-02



1
min



174
words

FRONTIERS 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 ...



Read full article:

<https://www.frontiersin.org/articles/10.3389/fnbot.2025.1649870>

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



Maria Carla
Piastra



2024-06-14



1
min



64
words

OOSTENVELD ROBERT

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




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

 Julius
Welzel

 17 2024-07-02

 1
min

 72
words

OOSTENVELD ROBERT


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


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One hundred years of EEG for brain and behaviour research

 Pedro Valdes-
Sosa

 17 2024-08-22

 1
min

 2
words

OOSTENVELD ROBERT

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[utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1BUB2BG5RbxOblm-hBbiJWEhGG43qIVrvGNHOTqBKva9wWrltM&fc=None&ff=20250915004409&v=2.18.0.post9+e462414](https://pubmed.ncbi.nlm.nih.gov/39174725/?utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1BUB2BG5RbxOblm-hBbiJWEhGG43qIVrvGNHOTqBKva9wWrltM&fc=None&ff=20250915004409&v=2.18.0.post9+e462414)

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



Richard J A van
Wezel



2024-09-04



1
min



65
words

OOSTENVELD ROBERT

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



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



Krzysztof J
Gorgolewski



2024-09-23



1
min



82
words

OOSTENVELD ROBERT

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



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

Fanny
Quandt

17 2025-01-09

1
min

65
words

OOSTENVELD ROBERT

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

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

Luca
Pollonini

17 2025-01-27

1
min

70
words

OOSTENVELD ROBERT


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



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

 Lyuba
Zehl

 2025-06-26  1
min

 67
words

OOSTENVELD ROBERT

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



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

 Tim M
Tierney

 2025-08-13  1
min

 74
words

OOSTENVELD ROBERT


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

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Optimal configuration of on-scalp OPMs with fixed channel counts

 Robert
Oostenveld

 2025-08-13  1 min

 69 words

OOSTENVELD ROBERT


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



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A Stereo Synchronization Method for Consumer-Grade Video Cameras to Measure Multi-Target 3D Displacement Using Image Processing in Shake Table Experiments

 Yuan-Sen
Yang

 2025-09-13  1 min

 63 words

LOW VISION


Summary: The use of consumer-grade cameras for stereo vision provides a cost-effective, non-contact method for measuring three-dimensional displacement in civil engineering experiments. However, obtaining accurate 3D coordinates requires accurate temporal alignment of several unsynchronized cameras, which is...


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Real-Time Driver Attention Detection in Complex Driving Environments via Binocular Depth Compensation and Multi-Source Temporal Bidirectional Long Short-Term Memory Network

 Huajie
Liu

 2025-09-13

 1
min

 62
words

LOW VISION

Summary: Driver distraction is a key factor contributing to traffic accidents. However, in existing computer vision-based methods for driver attention state recognition, monocular camera-based approaches often suffer from low accuracy, while multi-sensor data fusion techniques are compromised by poor real-ti...

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Tracking-Based Denoising: A Trilateral Filter-Based Denoiser for Real-World Surveillance Video in Extreme Low-Light Conditions



Chen

Lv



2025-09-13



1

min



75

words

LOW VISION

Summary: Video denoising in extremely low-light surveillance scenarios is a challenging task in computer vision, as it suffers from harsh noise and insufficient signal to reconstruct fine details. The denoising algorithm for these scenarios encounters challenges such as the lack of ground truth, and the nois...

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A Unified Preprocessing Pipeline for Noise-Resilient Crack Segmentation in Leaky Infrastructure Surfaces



Jeongho

Cho



2025-09-13



1

min



67


words


LOW VISION

Summary: Wet cracks caused by leakage often exhibit visual and structural distortions due to surface contamination, salt crystallization, and corrosion byproducts. These factors significantly degrade the performance of sensor- and vision-based crack detection systems. In moist environments, the initiation an...


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U-ResNet, a Novel Network Fusion Method for Image Classification and Segmentation

 Yaqing
Song

 2025-09-13

 1
min

 65
words

LOW VISION


Summary: Image classification and segmentation are important tasks in computer vision. ResNet and U-Net are representative networks for image classification and image segmentation, respectively. Although many scholars used to fuse these two networks, most integration focuses on image segmentation with U-Net,...


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Serum Vitamin D Levels as Predictors of Response to Intravitreal Anti-VEGF Therapy in Diabetic Macular Edema: A Clinical Correlation Study

 Ana Maria
Stoica

 2025-09-13

 1
min

 66
words

LOW VISION


Summary: Our study explored the role of serum 25-hydroxyvitamin D [25(OH)D] levels as an indicator of response to intravitreal anti-vascular endothelial growth factor (anti-VEGF) therapy in patients with diabetic macular edema (DME), highlighting functional and anatomical outcomes linked to systemic biomarkers...

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Visual Outcomes of a Non-Diffractive Extended Depth-of-Focus Intraocular Lens in Patients with Early-Stage Age-Related Macular Degeneration

 Celia Sánchez-Ramos



2025-09-13



1
min



66
words

LOW VISION

Summary: Background/Objectives: Age-related macular degeneration (AMD) is a leading cause of visual impairment in older adults and often coexists with cataracts. The indication of presbyopia-correcting intraocular lenses (IOLs) in these patients remains controversial. This study aimed to evaluate the clinica...




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Use of Mechanical Enhanced Colonoscopy to Improve Polyp Detection During Colorectal Cancer Screening: A Real-World Healthcare Database Analysis

 Seth A
Gross

 2025-09-13

 1
min

 71
words

LOW VISION


Summary: Introduction: High performance colonoscopy requires the monitoring of an individual's adenoma detection rate (ADR). The Endocuff (EndoCuff Vision, Olympus America Inc., Center Valley, PA, USA) is an endoscopic distal attachment device that increases surface area exposure during colonoscopy. While st...


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Metabolic alterations in diabetic patients: aqueous humor profiling for biomarker discovery

 Guna
Laganovska

 2025-09-13

 1
min

 64
words

LOW VISION


Summary: Diabetic retinopathy, a leading cause of vision loss in working-age populations, is a severe complication of diabetes mellitus. Metabolomics, a key approach in systems biology, offers insights into the complex pathophysiology of diabetes by analyzing low-molecular-weight compounds in biological cont...


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Evaluating the predictive potential of Th1 (IFN- γ +/CD4+/CD4+/CD4+ in rapidly progressive amyotrophic lateral sclerosis

 Hao Zhang

 2025-09-14

 1 min

 31 words

LOW VISION


Summary: CONCLUSIONS: Th1/CD4⁽⁺⁾ (with an optimal cutoff value of 16.21) was established as an independent risk factor for rapid progression in ALS. The machine learning model incorporating Th1/CD4⁽⁺⁾ demonstrated strong predictive performance.


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My Broken Heart

 Ashley C Rider

 2025-05-08

 1 min

 34 words

TACTILE ACUITY


Summary: AUDIENCE: The target audience for the key learning objectives of this Left-Ventricular Assist Device (LVAD) simulation are emergency medicine residents. Other team members such as attendings, nurses, pharmacists, and technicians could potentially be integrated.

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Distributions of orofacial two-point discrimination threshold: A cross-sectional study in healthy population and patients with pain-related temporomandibular disorders

 Xin
Xiong

 17 2025-05-15

 1
min

 70
words

TACTILE ACUITY

Summary: CONCLUSION: Pain-related TMDs patients had weaker orofacial tactile acuity, which was consistent in gender subgroups, except for the temporal region of males. Healthy males had weaker tactile acuity compared to females in TMJ and temporal regions. No significant gender effect on orofacial tactile ac...



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

 Thomas Hummel

 2025-05-28  1 min  70 words


TACTILE ACUITY

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

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

 Hiroyuki Kajimoto

 2025-06-17  1 min  75 words


TACTILE ACUITY


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

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

 Leah R
Bent

 2025-06-27

 1
min

 69
words

TACTILE ACUITY


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


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Directional vibro-tactile hazard warnings for drivers with vision impairments

 Alex R
Bowers

 2025-07-02

 1
min

 80
words

TACTILE ACUITY


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



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


 Cecilia
Guariglia

 2025-08-01  1
min

 64
words

TACTILE ACUITY

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



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

 Eric
Fjeldheim

 2025-08-24  1
min

 22
words

TACTILE ACUITY


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


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

 Paula Anne Newman-Casey

 2025-09-09

 1 min

 74 words


TACTILE ACUITY


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

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

 Sviatoslav N Bagriantsev

 2025-09-13

 1 min

 58 words

TACTILE ACUITY

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

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WAYVision: A hybrid deep learning approach for recognizing handwritten Kannada Braille using wavelet transformation and attention based YOLOv5



Shobha Rani

N



2025-08-25



1

min



64


words

BRAILLE

Summary: Handwritten Braille character recognition presents a significant challenge in the field of assistive technology, especially with the inclusion of various linguistic scripts such as Kannada. The data set is uniquely curated, combining ground-truth data from Kaggle and real-world samples collected fro...

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

 Joseph Paul
Nemargut



2025-08-25



1
min



62
words

BRaille

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




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

 Jianming
Xu



2025-08-25



1
min



62
words

BRaille

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





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

 Million
Phiri

 2025-08-26  1
min

 46
words

BRAILLE


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



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Explosion-powered eversible tactile displays

 Robert F
Shepherd

 2025-08-27  1
min

 64
words

BRAILLE


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


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

 Zhijun
Ma

 2025-08-28

 1
min

 57
words

[BRAILLE](#)


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


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

 Min
Zhang

 2025-08-28

 1
min

 64
words

[BRAILLE](#)

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

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



Hao
Lin



2025-09-01



1
min



72
words

BRAILLE

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



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



Ji
Liu



2025-09-02



1
min



56
words

BRAILLE

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

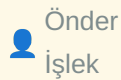


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Beyond access: rethinking assistive technology for individuals with visual impairments in Türkiye



2025-09-12

1
min55
words

BRAILLE

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

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Personalized High-Definition Transcranial Direct Current Stimulation for the Treatment of Depression: A Randomized Clinical Trial



2025-09-11

1
min66
words

TDCS TACS TRNS


Summary: CONCLUSIONS AND RELEVANCE: In this randomized clinical trial of HD-tDCS in participants with moderate to severe depression, the 12-day HD-tDCS therapy was observed to significantly improve mood with a moderate effect size. Similar effect sizes in pharmacotherapy, psychotherapy, and conventional tDCS...


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Effect of theta-transcranial alternating current stimulation on working memory performance among healthy adults: A systematic review and meta-analysis

 Rui-Ke
Zhang

 2025-09-11

 1
min

 27
words

TDCS TACS TRNS

Summary: CONCLUSION: Theta-tACS enhances working memory in healthy adults, with effects modulated by the task type and protocol parameters, offering dual implications for cognitive enhancement and clinical interventions.


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Review of nonpharmacological interventions for delaying the effects of cerebral neuropathy caused by diabetes

 Lun-De
Liao

 2025-09-12

 1
min

 67
words

TDCS TACS TRNS


Summary: Diabetic peripheral neuropathy (DPN) is a debilitating complication of diabetes that affects nearly half of diabetic patients and manifests as chronic pain, sensory loss, and motor dysfunction. The limited efficacy of traditional pharmacological treatments, coupled with their side effects, has inten...



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Online HD-tRNS over the right temporoparietal junction modulates social inference but not motor coordination

 Guillaume
Dumas

 2025-09-12  1
min

 68
words

TDCS TACS TRNS


Summary: Social interactions are fundamental to human cognition, with the right temporoparietal junction (rTPJ) playing a key role in integrating motor coordination and social inference. While transcranial random noise stimulation (tRNS) is a promising technique for modulating cortical excitability in real t...



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Neural Correlates of Borderline Personality Disorder (BPD) Based on Electroencephalogram (EEG)-A Mechanistic Review

 Donata
Kurpas

 2025-09-13  1
min

 62
words

TDCS TACS TRNS


Summary: Borderline Personality Disorder (BPD) is marked by emotional dysregulation, instability in self-image and relationships, and high impulsivity. While functional magnetic resonance imaging (fMRI) studies have provided valuable insights into the disorder's neural correlates, electroencephalography (EEG...


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Burnout and the Brain-A Mechanistic Review of Magnetic Resonance Imaging (MRI) Studies

 Donata Kurpas

 2025-09-13

 1 min

 64 words

TDCS TACS TRNS


Summary: Occupational burnout is ubiquitous yet still debated as a disease entity. Previous reviews surveyed multiple biomarkers but left their neural substrate unclear. We therefore asked: What, if any, reproducible magnetic-resonance signature characterises burnout? Following PRISMA principles adapted for ...


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From Immediate Impact to Enduring Change: A Transcriptomic Comparison of tDCS's Temporal Effects and Its Long-Term Equivalence with TMS

 Hanoch Kaphzan

 2025-09-13

 1 min

 63 words

TDCS TACS TRNS

Summary: Transcranial Direct Current Stimulation (tDCS) and Transcranial Magnetic Stimulation (TMS) are neuromodulatory techniques with therapeutic potential for similar disorders; however, their molecular effects require further elucidation, and whether both strategies work in similar biological pathways is...

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General Innovations in Pain Management

 Alaa Abd-
Elsayed

 17

2025-09-13

 1
min

 74
words

TDCS TACS TRNS


Summary: Chronic pain management is constantly evolving, and our literature review aims to describe the general innovations happening within the field. The need for advancements in chronic pain is a necessity, as debilitating back pain and other forms of chronic pain are significant issues in the United Stat...


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Behavioral outcomes after tDCS treatment during immediate post-intervention and follow-up periods in children and adolescents diagnosed with attention-deficit/hyperactivity disorder: a systematic review and meta-analysis on randomized sham-controlled trials

 Kuo-Chuan
Hung

 2025-09-13

 1
min

 58
words

TDCS TACS TRNS

Summary: This meta-analysis aimed at elucidating the effectiveness of transcranial direct current stimulation (tDCS) in improving behavioral symptoms of attention deficit/hyperactivity disorder (ADHD) in children/adolescents during the immediate post-intervention/follow-up periods and identifying potential c...

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Effect of HD-tDCS targeting the DLPFC on cognitive ability and flight simulation performance in healthy adults

Xia
Zhu

2025-09-14

1
min

36
words

TDCS TACS TRNS

Summary: OBJECTIVE: This study aimed to investigate the effects of high-definition transcranial direct current stimulation (HD-tDCS) on attention, working memory, inhibitory control, and cognitive flexibility in healthy adults, and to examine its association with flight simulation performance.

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Evaluating the effects of multimodal EEG-fNIRS neurofeedback for motor imagery: An experimental platform and study protocol

Pierre
Maurel

2025-09-11

1
min

61
words

FNIRS

Summary: BACKGROUND: Neurofeedback (NF) enables the self-regulation of brain activity through real-time feedback extracted from brain measures. Recently, the combination of several neuroimaging methods to characterize brain activity has led to growing interest in NF. The integration of various portable recor...

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The Emotional and Cognitive Effects of Synchronizing to Music During Acute Exercise: An fNIRS Study



William Forde
Thompson



2025-09-12



1
min



61
words

FNIRS

Summary: Synchronizing movements to music enhances exercise performance and enjoyment, yet its short-term effects on attention and cognition remain underexplored. This study examined the influence of synchronous music, asynchronous music, and a no-music control condition on emotional responses, perceived exe...



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Interbrain Synchrony Mitigates Extremism Within Echo Chambers



Simone Shamay-
Tsoory



2025-09-12



1
min



65
words

FNIRS

Summary: People tend to engage with content that aligns with their pre-existing attitudes, forming echo chambers that reinforce biases and may amplify extremism. Here, we investigate whether discussions within homogeneous groups drive attitudinal extremity and whether interbrain synchronized activity between...





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An Empirical Study on the Impact of Different Interaction Methods on User Emotional Experience in Cultural Digital Design

 Feng
Zou

 17 2025-09-13  1
min

 64
words

FNIRS


Summary: Traditional culture plays a vital role in shaping national identity and emotional belonging, making it imperative to explore innovative strategies for its digital preservation and engagement. This study investigates how interaction design in cultural digital games influences users' emotional experie...



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TopoTempNet: A High-Accuracy and Interpretable Decoding Method for fNIRS-Based Motor Imagery

 Zhejun
Kuang

 17 2025-09-13  1
min

 63
words

FNIRS

Summary: Functional near-infrared spectroscopy (fNIRS) offers a safe and portable signal source for brain-computer interface (BCI) applications, particularly in motor imagery (MI) decoding. However, its low sampling rate and hemodynamic delay pose challenges for temporal modeling and dynamic brain network an...


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Compact Colocated Bimodal EEG/fNIRS Multi-Distance Sensor

 Angélique
Rasclé

 2025-09-13

 1
min

 70
words

FNIRS


Summary: At present, it is a real challenge to measure brain signals outside of the lab with portable systems that are robust, comfortable and easy to use. We propose in this article a bimodal electroencephalography-functional near-infrared spectroscopy (EEG-fNIRS) sensor whose spatial geometry allows the ro...


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Do newborns detect prosodic violations in an unfamiliar language at birth?

 Judit
Gervain

 2025-09-14

 1
min

 65
words

FNIRS

Summary: Experience with language starts prenatally, as the intrauterine environment allows speech prosody to get through. Martinez-Alvarez and colleagues (2023) demonstrated that newborns detect utterance-level prosodic violations in the language they heard prenatally, French. It remains unknown, however, w...

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The sensory-motor overlap in motor imitation: evidence from motor imagery

 Shengjun
Wu

 17

2025-09-14



1
min



70
words

FNIRS

Summary: Motor imitation is crucial for acquiring motor skills and social cognition, yet the theoretical understanding of its underlying mechanism remains partial. The direct matching hypothesis suggests that the overlap between observed and executed motions is crucial for effective motor imitation. This stu...

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Your smiles inspired my smiles: the interpersonal neural coupling of positive emotion contagion during social interactions

 Yanmei
Wang

 17

2025-09-14



1
min



70
words

FNIRS


Summary: Emotional contagion refers a process that by which the emotions of a perceiver become more similar to those of others as a result of exposure to these emotions. The present study investigated the behavioral and interpersonal neural coupling mechanisms underlying positive emotional contagion. We recr...



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Abnormal Brain Activation Patterns in Patients With Post-Acute Sequelae of COVID-19 (PASC) During Recovery: A fNIRS Study

 Xiaoying Tang

 2025-09-14  1 min

 69 words

fNIRS

Summary: COVID-19 has increased the likelihood of cognitive impairment in patients with post-acute sequelae of COVID-19 (PASC). There is a lack of direct evidence regarding the working memory performance of mild patients during the recovery period. This study employed functional near-infrared spectroscopy (f...


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EEGOpt: A performance efficient Bayesian optimization framework for automated EEG signal classification

 Monisha Chakraborty

 2025-09-11  1 min

 34 words

BRAIN COMPUTER INTERFACE

Summary: CONCLUSION: EEGOpt is a scalable and interpretable framework that automatically identifies optimal signal processing and classification strategies adaptable to EEG datasets, making it a valuable tool for neuroscientific research, diagnostics, and brain-computer interface development.


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Stretchable Multilevel Mesh Brain Electrodes for Neuroplasticity in Glioma Patients Undergoing Surgery

Xue
Feng

2025-09-12

1
min

63
words

BRAIN COMPUTER INTERFACE

Summary: Brain disease surgical treatment usually leads to neurological dysfunction. Electroencephalogram (EEG)-based neuroplasticity study may facilitate patient nerve function recovery from injury, allowing a return to normal activities. Due to the limitations of wound infections and hair barrier effects, ...

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2D Vanadium Carbide/Oxide Heterostructure-Based Artificial Sensory Neuron for Multi-Color Near-Infrared Object Recognition

 Jiahong Wang

 17

2025-09-12



1 min



58 words

BRAIN COMPUTER INTERFACE

Summary: Near-infrared (NIR) photon detection and object recognition are crucial technologies for all-weather target identification in autonomous navigation, nighttime surveillance, and tactical reconnaissance. However, conventional NIR detection systems, which rely on photodetectors and von Neumann computin...

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Sequence action representations contextualize during early skill learning



Leonardo G
Cohen



2025-09-12



1
min



68
words

BRAIN COMPUTER INTERFACE

Summary: Activities of daily living rely on our ability to acquire new motor skills composed of precise action sequences. Here, we asked in humans if the millisecond-level neural representation of an action performed at different contextual sequence locations within a skill differentiates or remains stable d...



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Classification of Different Motor Imagery Tasks with the Same Limb Using Electroencephalographic Signals



Carlos Julio Tierra-
Criollo



2025-09-13



1
min



69
words

BRAIN COMPUTER INTERFACE

Summary: Stroke is a neurological condition that often results in long-term motor deficits. Given the high prevalence of motor impairments worldwide, there is a critical need to explore innovative neurorehabilitation strategies that aim to enhance the quality of life of patients. One promising approach invol...




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TopoTempNet: A High-Accuracy and Interpretable Decoding Method for fNIRS-Based Motor Imagery

 Zhejun
Kuang

 2025-09-13

 1
min

 63
words

BRAIN COMPUTER INTERFACE

Summary: Functional near-infrared spectroscopy (fNIRS) offers a safe and portable signal source for brain-computer interface (BCI) applications, particularly in motor imagery (MI) decoding. However, its low sampling rate and hemodynamic delay pose challenges for temporal modeling and dynamic brain network an...


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A new wide-scope, multi-biomarker wastewater-based epidemiology analytical method to monitor the health and well-being of inhabitants at a metropolitan scale

 Barbara Kasprzyk-Hordern

 2025-09-13

 1 min

 64 words

BRAIN COMPUTER INTERFACE

Summary: This manuscript establishes a new, comprehensive biomarker list and a multiresidue trace quantification method for community-wide health and well-being assessment at a metropolitan scale using wastewater-based epidemiology (WBE) and mass spectrometry pipelines. This method enables the quantification...

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Thalamocortical dysrhythmia-related sleep spindle desynchronization in patients with tinnitus



Yuanqing
Li



2025-09-13



1
min



68
words

BRAIN COMPUTER INTERFACE

Summary: Patients with tinnitus commonly suffer from sleep problems, and the underlying neural mechanisms remain unclear. Previous studies have focused primarily on the correlation between patients' sleep structure and tinnitus, lacking exploration into the links between sleep problems and the underlying pat...



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Neurodevelopmental deviations in schizophrenia: Evidences from multimodal connectome-based brain ages



Huafu
Chen



2025-09-13



1
min



21
words

BRAIN COMPUTER INTERFACE

Summary: CONCLUSION: These findings from a multimodal brain age perspective suggest that advanced brain age gaps exist early in youths with schizophrenia.



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MSAttNet: Multi-scale attention convolutional neural network for motor imagery classification



Jing
Jin



2025-09-14



1
min



16
words

BRAIN COMPUTER INTERFACE

Summary: CONCLUSION: MSAttNet effectively addresses the challenges of MI-EEG datasets, improving decoding performance by robust feature extraction.



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Monthly Updates [April]



2025-04-01



2
min



555
words

FMHY

Summary:

INFO

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The Internet Archive needs your help.

17

2025-04-21

1

min

181

words

FMHY

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

 **Read full article:**
<https://fmhy.net/posts/support-ia>

Monthly Updates [May]

17

2025-05-01

3

min

704

words

FMHY

Summary: <div class="info custom-block"><p class="custom-block-title">INFO</p><p>These update threads only contains major updates. If you're interested in seeing all minor changes you can follow our Commits Page on ...

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

Monthly Updates [June]

17

2025-06-01

3

min

761

words

FMHY

Summary:

INFO

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

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

Monthly Updates [July]

17

2025-07-01

3

min

749

words

FMHY

Summary:

INFO

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

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

Are meta-scientists ignoring philosophy of science?

 noreply@blogger.com (Daniel Lakens)



2025-07-04



8 min



1681 words

TWENTY PERCENT STATISTICIAN


Summary: <p>Are meta-scientists ignoring philosophy of science (PoS)? Are they re-inventing the wheel? A recent panel at the Metascience conference engaged with this question, and the first sentence of the abstract states “Critics argue t...



Read full article:

<http://daniellakens.blogspot.com/2025/07/are-meta-scientists-ignoring-philosophy.html>

Easily download files from the Open Science Framework with Papercheck

 noreply@blogger.com (Daniel Lakens)



2025-07-22



3 min



765 words

TWENTY PERCENT STATISTICIAN

Summary: <p>Researchers increasingly use the Open Science Framework (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>

Education: Legal Issues



Adriel
Carridice



2025-02-05



1
min



61
words

BRAIN

Summary: The safety concerns and standards shared in other sections provide an initial foundation for legal protections. However, calls for stricter consumer protection laws must accompany the proliferation of neurotech devices. Special privacy laws must be promulgated to ensure “cognitive privacy” (Nita Far...



Read full article:

<https://brain.ieee.org/publications/neuroethics-framework/education/education-legal-issues/education-legal-issues/>

From customer survey feedback to software improvements: Leveraging the full potential of data



Erik Bertram, Nina Hollender, Sebastian Juhl, Sandra Loop, Martin Schrepp



2025-09-15



1
min



137
words

ARXIV CS HC

Summary: arXiv:2509.10064v1 Announce Type: new Abstract: Converting customer survey feedback data into usable insights has always been a great challenge for large software enterprises. Despite the improvements on this field, a major obstacle often remains when drawing the right conclusions out of the data a...



Read full article:

<https://arxiv.org/abs/2509.10064>

Inclusive by design: Developing Barrier-Free Authentication for Blind and Low Vision Users through the ALIAS Project



Clara Toussaint (CeRCA), Benjamin Chateau (CeRCA), Pierre-Guillaume Gourio-Jewell (CeRCA),
Emilie Bonnefoy (CeRCA), Nicolas Louveton (CeRCA)



2025-09-15



1
min



214
words

ARXIV CS HC

Summary: arXiv:2509.10043v1 Announce Type: new Abstract: Authentication is the cornerstone of information security in our daily lives. However, disabled users such as Blind and Low-Vision (BLV) ones are left behind in digital services due to the lack of accessibility. According to the World Health Organizat...



Read full article:

<https://arxiv.org/abs/2509.10043>

A Framework for AI-Supported Mediation in Community-based Online Collaboration



Soobin Cho, Mark Zachry, David W.
McDonald



2025-09-15



1
min



150
words

ARXIV CS HC

Summary: arXiv:2509.10015v1 Announce Type: new Abstract: Online spaces involve diverse communities engaging in various forms of collaboration, which naturally give rise to discussions, some of which inevitably escalate into conflict or disputes. To address such situations, AI has primarily been used for mod...



Read full article:

<https://arxiv.org/abs/2509.10015>

Beyond the Silence: How Men Navigate Infertility Through Digital Communities and Data Sharing



Tawfiq Ammari, Zarah Khondoker, Yihan Wang, Nikki
Roda



2025-09-15



1
min



150
words

ARXIV CS HC

Summary: arXiv:2509.10003v1 Announce Type: new Abstract: Men experiencing infertility face unique challenges navigating Traditional Masculinity Ideologies that discourage emotional expression and help-seeking. This study examines how Reddit's r/maleinfertility community helps overcome these barriers through...



Read full article:

<https://arxiv.org/abs/2509.10003>

Immersive Invaders: Privacy Threats from Deceptive Design in Virtual Reality Games and Applications



Hilda Hadan, Michaela Valiquette, Lennart E. Nacke, Leah Zhang-
Kennedy



2025-09-15



1
min



151
words

ARXIV CS HC

Summary: arXiv:2509.09916v1 Announce Type: new Abstract: Virtual Reality (VR) technologies offer immersive experiences but collect substantial user data. While deceptive design is well-studied in 2D platforms, little is known about its manifestation in VR environments and its impact on user privacy. This re...



Read full article:

<https://arxiv.org/abs/2509.09916>

Seeing Identity in Data: Can Anthropographics Uncover Racial Homophily in Emotional Responses?



Poorna Talkad Sukumar, Maurizio Porfiri, Oded

Nov



2025-09-15



1

min



176

words

ARXIV CS HC

Summary: arXiv:2509.09910v1 Announce Type: new Abstract: Racial homophily refers to the tendency of individuals to associate with others of the same racial or ethnic background. A recent study found no evidence of racial homophily in responses to mass shooting data visualizations. To increase the likelihood...



Read full article:

<https://arxiv.org/abs/2509.09910>

Climate Data for Power Systems Applications: Lessons in Reusing Wildfire Smoke Data for Solar PV Studies



Arleth Salinas, Irtaza Sohail, Valerio Pascucci, Pantelis Stefanakis, Saud Amjad, Aashish Panta, Roland Schigas, Timothy Chun-Yiu Chui, Nicolas Duboc, Mostafa Farrokhbadi, Roland Stull



2025-09-15



1

min



189

words

ARXIV CS HC


Summary: arXiv:2509.09888v1 Announce Type: new Abstract: Data reuse is using data for a purpose distinct from its original intent. As data sharing becomes more prevalent in science, enabling effective data reuse is increasingly important. In this paper, we present a power systems case study of data repurpos...



Read full article:

<https://arxiv.org/abs/2509.09888>

Vibe Check: Understanding the Effects of LLM-Based Conversational Agents' Personality and Alignment on User Perceptions in Goal-Oriented Tasks

 Hasibur Rahman, Smit Desai



2025-09-15



1 min



155 words

ARXIV CS HC


Summary: arXiv:2509.09870v1 Announce Type: new Abstract: Large language models (LLMs) enable conversational agents (CAs) to express distinctive personalities, raising new questions about how such designs shape user perceptions. This study investigates how personality expression levels and user-agent persona...



Read full article:

<https://arxiv.org/abs/2509.09870>

Designing and Evaluating AI Margin Notes in Document Reader Software

 Nikhita Joshi, Daniel Vogel



2025-09-15



1 min



155 words

ARXIV CS HC


Summary: arXiv:2509.09840v1 Announce Type: new Abstract: AI capabilities for document reader software are usually presented in separate chat interfaces. We explore integrating AI into document comments, a concept we formalize as AI margin notes. Three design parameters characterize this approach: margin not...






Read full article:

<https://arxiv.org/abs/2509.09840>

Merging Bodies, Dividing Conflict: Body-Swapping in Mixed Reality Increases Closeness Yet Weakens the Joint Simon Effect

 Yuan He, Brendan Rooney, Rachel McDonnell

 2025-09-15  1 min


 167 words



ARXIV CS HC

Summary: arXiv:2509.09815v1 Announce Type: new Abstract: Mixed Reality (MR) presents novel opportunities to investigate how individuals perceive themselves and others during shared, augmented experiences within a common physical environment. Previous research has demonstrated that users can embody avatars i...

 **Read full article:**
<https://arxiv.org/abs/2509.09815>

Musculoskeletal simulation of limb movement biomechanics in *Drosophila melanogaster*

 Pembe Gizem 'Ozdil, Chuanfang Ning, Jasper S. Phelps, Sibor Wang-Chen, Guy Elisha, Alexander Blanke, Auke Ijspeert, Pavan Ramdya

 2025-09-15  1 min  240 words

ARXIV QBIO NC

Summary: arXiv:2509.06426v2 Announce Type: replace Abstract: Computational models are critical to advance our understanding of how neural, biomechanical, and physical systems interact to orchestrate animal behaviors. Despite the availability of near-complete reconstructions of the *Drosophila melanogaster* ce...

 **Read full article:**
<https://arxiv.org/abs/2509.06426>

Cognitive Effort in the Two-Step Task: An Active Inference Drift-Diffusion Model Approach



Alvaro Garrido Perez, Viktor Lemoine, Amrapali Pednekar, Yara Khaluf, Pieter Simoens

2025-09-15



1
min



239
words

ARXIV QBIO NC

Summary: arXiv:2508.04435v2 Announce Type: replace Abstract: High-level theories rooted in the Bayesian Brain Hypothesis often frame cognitive effort as the cost of resolving the conflict between habits and optimal policies. In parallel, evidence accumulator models (EAMs) provide a mechanistic account of ho...



Read full article:

<https://arxiv.org/abs/2508.04435>

Overground gait transitions are not sharp but involve gradually changing walk-run mixtures even over long distances



Nicholas S. Baker, Leroy Long, Manoj Srinivasan



2025-09-15



1
min



200
words

ARXIV QBIO NC

Summary: arXiv:2501.00720v3 Announce Type: replace Abstract: Humans typically walk at low speeds and run at higher speeds. Previous studies of transitions between walking and running were mostly on treadmills, but real-world locomotion allows more flexibility. Here, we study overground locomotion over long ...



Read full article:

<https://arxiv.org/abs/2501.00720>

Near-Hamiltonian dynamics and energy-like quantities of next-generation neural mass models



Daniele Andrean, Morten Gram
Pedersen



2025-09-15



1
min



142
words

ARXIV QBIO NC

Summary: arXiv:2509.10428v1 Announce Type: new Abstract: Neural mass models describe the mean-field dynamics of populations of neurons. In this work we illustrate how fundamental ideas of physics, such as energy and conserved quantities, can be explored for such models. We show that time-rescaling renders r...



Read full article:

<https://arxiv.org/abs/2509.10428>

The nature of alpha modulation through neurofeedback



Jacob Maaz (CRPN), Laurent Waroquier (PsyCL'E), Alexandra Dia (CRPN), V'eronique Paban (LNIA, CRPN), Arnaud Rey (CRPN)



2025-09-15



1
min



174
words

ARXIV QBIO NC

Summary: arXiv:2509.10046v1 Announce Type: new Abstract: Electroencephalographic neurofeedback (EEG-NF) has been proposed as a promising technique to modulate brain activity through real-time EEG-based feedback. Alpha neurofeedback in particular is believed to induce rapid self-regulation of brain rhythms, ...



Read full article:

<https://arxiv.org/abs/2509.10046>

Cerebellar Contributions to Action and Cognition: Prediction, Timescale, and Continuity



Jonathan Tsay, Richard
Ivry



2025-09-15



1
min



202
words

ARXIV QBIO NC

Summary: arXiv:2509.09818v1 Announce Type: new Abstract: The cerebellum is implicated in nearly every domain of human cognition, yet our understanding of how this subcortical structure contributes to cognition remains elusive. Efforts on this front have tended to fall into one of two camps. On one side are ...



Read full article:

<https://arxiv.org/abs/2509.09818>

DCHO: A Decomposition-Composition Framework for Predicting Higher-Order Brain Connectivity to Enhance Diverse Downstream Applications



Weibin Li, Wendu Li, Quanying
Liu



2025-09-15



1
min



182
words

ARXIV QBIO NC

Summary: arXiv:2509.09696v1 Announce Type: new Abstract: Higher-order brain connectivity (HOBC), which captures interactions among three or more brain regions, provides richer organizational information than traditional pairwise functional connectivity (FC). Recent studies have begun to infer latent HOBC fr...




Read full article:

<https://arxiv.org/abs/2509.09696>

Randomized controlled trial of theta burst stimulation modalities in severe post-stroke aphasia: examining the right hemisphere's role

 1
min

 24
words

NEUROSCIENCE JOURNAL

Summary: <p>Publication date: 15 October 2025</p><p>Source: Neuroscience, Volume 585</p><p>Author(s): Yanhong Dai, Hong Wang, Qun Fang, Jiajian Yan, Leyi Xu, Zhaowen Zhou, Liwei Mao, Zhuoming Chen</p>




Read full article:

https://www.sciencedirect.com/science/article/pii/S0306452225008371?dgcid=rss_sd_all

Exploring the interaction of reading and attention through connectivity with the frontal-eye-field

 1
min

 16
words

NEUROSCIENCE JOURNAL

Summary: <p>Publication date: 15 October 2025</p><p>Source: Neuroscience, Volume 585</p><p>Author(s): Shaylyn Kress, Josh Neudorf, Chelsea Ekstrand, Ron Borowsky</p>




Read full article:

https://www.sciencedirect.com/science/article/pii/S0306452225009212?dgcid=rss_sd_all

Effect of electro-acupuncture on motor dysfunction in middle cerebral artery occlusion/reperfusion rats through cortex-striatum somatostatin neural circuit

 1
min

 26
words

NEUROSCIENCE JOURNAL

Summary: <p>Publication date: 15 October 2025</p><p>Source: Neuroscience, Volume 585</p><p>Author(s): Yi Zheng, Wenju Wang, Sijia Xia, Tao Jiang, Rui Li, Minguang Yang, Weilin Liu, Lidian Chen, Jing Tao</p>




Read full article:

https://www.sciencedirect.com/science/article/pii/S0306452225009285?dgcid=rss_sd_all

10-Hz tACS counteracts PASAT-related suppression of alpha power: A pilot study

 1
min

 16
words

NEUROSCIENCE JOURNAL

Summary: <p>Publication date: 15 October 2025</p><p>Source: Neuroscience, Volume 585</p><p>Author(s): Anai Gonzalez-Ramirez, Jorge Gutierrez, Jörn Rickert, Elias Manjarrez</p>




Read full article:

https://www.sciencedirect.com/science/article/pii/S0306452225009200?dgcid=rss_sd_all


Cognitive prediction using regional connectivities and network biomarkers in Alzheimer's disease

 1
min

 20
words

NEUROSCIENCE JOURNAL


Summary: <p>Publication date: 15 October 2025</p><p>Source: Neuroscience, Volume 585</p><p>Author(s): Jinhua Sheng, Jialei Wang, Qiao Zhang, Ruilin Huang, Yan Lu, Tao Li</p>

 Read full article:

https://www.sciencedirect.com/science/article/pii/S0306452225009078?dgcid=rss_sd_all

SELENOPROTEIN T deficiency alters projection neuron migration during corticogenesis in mice

 1
min

 29
words


NEUROSCIENCE JOURNAL


Summary: <p>Publication date: 15 October 2025</p><p>Source: Neuroscience, Volume 585</p><p>Author(s): Emmanuelle Carpentier, Anthony Falluel-Morel, Lisa Brunet, Magalie Bénard, David Alexandre, David Godefroy, Ben Yamine Mallouki, Loubna Boukhzar, Arnaud Arabo, Youssef Anouar</p>

 Read full article:


https://www.sciencedirect.com/science/article/pii/S0306452225009364?dgcid=rss_sd_all

In vivo single-cell gene editing using RNA electroporation reveals sequential adaptation of cortical neurons to excitatory-inhibitory imbalance

 Kosche, G., Fratzl, A., Munz, M., Roska, B.

 2025-09-13

 1 min

 150 words

BIORXIV NEUROSCIENCE

Summary: The balance between excitatory and inhibitory neurotransmission is fundamental for normal brain function, yet the adaptation of individual neurons to disrupted excitatory-inhibitory balance is not well understood. We developed highly efficient, in vivo RNA electroporation-based single-cell gene edit...



Read full article:

<https://www.biorxiv.org/content/10.1101/2025.09.13.672380v1?rss=1>

Dual role of GABAB receptor in oligodendrocyte function and immune modulation in experimental multiple sclerosis

Bayon-Cordero, L., Ochoa-Bueno, B. I., Luengas-Escuza, I., Senovilla, R., Buendia, I., Zheng, C., Agirre, E., Castelo-Branco, G., Amo, L., Borrego, F., Garcia-Moreno, F., Kirchhoff, F., Bai, X., Matute, C., Sanchez-Gomez, M. V.



2025-09-13



1

min



243

words

BIORXIV NEUROSCIENCE


Summary: GABAB receptors (GABABR) mediate the actions of the inhibitory neurotransmitter GABA in the central nervous system, regulating key processes such as synaptic activity, interneuron communication and excitation-inhibition balance in the brain. Recent studies using the GABABR agonist baclofen have reve...





Read full article:

<https://www.biorxiv.org/content/10.1101/2025.09.09.675094v1?rss=1>

Lysosomal multi-omics reveals altered sphingolipid catabolism as driver of lysosomal dysfunction in the aging brain.

 Sarkar, C., Chen, Y., Nguyen, D. P., Weldemariam, M. M., Morel, Y., Tabari, A. A. M., Gorny, N., Pettyjohn-Robin, O., Hegdekar, N., Thapa, S., Kachi, S. A., Bustos, S., Zalesak-Kravec, S., Williams, C., Leahy, N., Chou, R. T., Kumar, S. D., McCracken, C., Blanpied, T. A., Karbowski, M. A., Jones, J. W., Kane, M. A., Cummings, M. A., Lipinski, M. M.

 2025-09-13  1 min  321 words

BIORXIV NEUROSCIENCE

Summary: Recent data indicate that lipid composition has profound influence on the brain function and that changes in lipid homeostasis affect brain aging and predisposition to neurodegenerative diseases. Lipids dynamically reside in multiple intracellular locations and their organellar distribution is impor...

 Read full article:

<https://www.biorxiv.org/content/10.1101/2025.09.10.675421v1?rss=1>

Beyond Locomotion: How Specialized Motor Rhythms Enable Vertebrate Escape from Capture



Farjami, S., Palyanov, A., Zhang, H.-Y., Saccomanno, V., Merrison-Hort, R., Ferrario, A., Borisyuk, R., Tabak, J., Li, W.-C.



2025-09-13



1
min



148
words

BIORXIV NEUROSCIENCE

Summary: Escape behaviors following capture are crucial for survival, yet their underlying neurobiological mechanisms remain poorly understood. We investigated how *Xenopus laevis* tadpoles use struggling movements to escape head restraint. High-speed video tracking revealed a stereotyped sequence of body flex...



Read full article:

<https://www.biorxiv.org/content/10.1101/2025.09.08.674955v1?rss=1>

Bridging feeling and motion: Insula–premotor dynamics in the processing of action vitality forms

Giuseppe Di CesareYury KoushPeter ZeidmanAlessandra SciuttiKarl FristonGiacomo

RizzolattiDepartment of Food and Drug, University of Parma, Parma 43124, ItalybItalian Institute of

Technology, Cognitive Architecture for Collaborative Technologies Unit, Genova 16152, ItalycVladimir

 Zelman Center for Neurobiology and Brain Rehabilitation, Skolkovo Institute of Science and

Technology, Moscow 121205, RussiadDepartment of Imaging Neuroscience, Queen Square Institute of

Neurology, University College London, London WC1N 3AR, United Kingdomelstituto di Neuroscienze,

Consiglio Nazionale delle Ricerche, Parma 43125, Italy

 2025-09-10  1 min  50 words

PNAS NEUROSCIENCE


Summary: Proceedings of the National Academy of Sciences, Volume 122, Issue 37, September 2025.
SignificanceHumans perform actions with different kinematic forms, communicating their attitudes to others. These action forms, known as vitality forms (VFs), are encoded in the insula (INS). Here, we invest...

 Read full article:


<https://www.pnas.org/doi/abs/10.1073/pnas.2514139122?af=R>

Stuttering: the nature of the speech disruptions—a multimodal study of articulation and phonation

 Denise
White

 2025-09-09

 1
min

 348
words


FRONTIERS HUMAN NEUROSCIENCE


Summary: Stuttering is a disorder characterized by transient disruptions in speech motor production. This article is focused on the characteristics of stuttering and the immediate vocal tract mechanisms resulting in stuttered speech disruptions. A range of observations from an initial series of studies on th...

 Read full article:


<https://www.frontiersin.org/articles/10.3389/fnhum.2025.1623308>

Towards stimulation-free automatic electrocorticographic speech mapping in neurosurgery patients

 Alexei Voskoboynikov, Magomed Aliverdiev, Yulia Nekrasova, Ilia Semenov, Anastasia Skalnaya, Mikhail Sinkin and Alexei Ossadtchi

 2025-08-31

 1
min

 263
words

JOURNAL NEURAL ENGINEERING

Summary: Objective. The precise mapping of speech-related functions is crucial for successful neurosurgical interventions in epilepsy and brain tumor cases. Traditional methods like electrocortical stimulation mapping (ESM) are effective but carry a significant risk of inducing seizures. Methods. To address ...

 Read full article:

<http://iopscience.iop.org/article/10.1088/1741-2552/adfc9c>

Instantaneous recognition method for lower limb continuous motion based on onset-window surface electromyography data

 Xiaohui Li, Hao Zhou, Xueyan Lyu, Xiaoyue Yu, Dezhi Yu, Wenzhuo Wang, Guanglin Li and Lin Wang

 2025-09-01  1 min  210 words

JOURNAL NEURAL ENGINEERING

Summary: Objective. Human–robot collaboration in lower-limb rehabilitation devices imposes stringent requirements on both the recognition accuracy of motion intention and real-time responsiveness. The precise recognition of lower limb motion based on surface electromyography (sEMG) has always been a primary ...

 **Read full article:**
<http://iopscience.iop.org/article/10.1088/1741-2552/adfab3>

Extracting robust single-trial somatosensory evoked potentials for non-invasive brain computer interfaces



Disha Gupta, Jodi Brangaccio, Helia Mojtabavi, Jonathan Wolpaw and N Jeremy Hill

2025-09-02



1
min



297
words

JOURNAL NEURAL ENGINEERING

Summary: Objective. Reliable extraction of single-trial somatosensory evoked potentials (SEPs) is essential for developing brain-computer interface (BCI) applications to support rehabilitation after brain injury. For real-time feedback, these responses must be extracted prospectively on every trial, with min...



Read full article:

<http://iopscience.iop.org/article/10.1088/1741-2552/adfd8a>

Unveiling functional heterogeneity in anatomical functional areas: a framework for fine-grained functional connectivity analysis of wide-field calcium imaging data



Yunhan Li, Yiwen Xu, Yaqin Liu and Chang'an A Zhan



2025-09-03



1
min



297
words

JOURNAL NEURAL ENGINEERING

Summary: Objective. Conventional functional connectivity (FC) analysis of wide-field calcium imaging (WFCI) data relies on the assumption of homogeneity within predefined anatomical functional areas (FAs), where the signal averaged within each FA serves as the foundation for inter-FA connectivity modeling. H...



Read full article:

<http://iopscience.iop.org/article/10.1088/1741-2552/adff39>

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



Maria Carla
Piastra



2024-06-14



1
min



64
words

OOSTENVELD ROBERT

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



Read full article:

<https://pubmed.ncbi.nlm.nih.gov/38873838/?>

[utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1BUB2BG5RbxOblm-hBbiJWEhGG43qIVrvGNHOTqBKva9wWrltM&fc=None&ff=20250915002355&v=2.18.0.post9+e462414](https://pubmed.ncbi.nlm.nih.gov/38873838/?utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1BUB2BG5RbxOblm-hBbiJWEhGG43qIVrvGNHOTqBKva9wWrltM&fc=None&ff=20250915002355&v=2.18.0.post9+e462414)

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



Julius
Welzel



2024-07-02



1
min



72
words

OOSTENVELD ROBERT

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






Read full article:


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

[utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1BUB2BG5RbxOblm-hBbiJWEhGG43qIVrvGNHOTqBKva9wWrltM&fc=None&ff=20250915002355&v=2.18.0.post9+e462414](https://pubmed.ncbi.nlm.nih.gov/38956071/?utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1BUB2BG5RbxOblm-hBbiJWEhGG43qIVrvGNHOTqBKva9wWrltM&fc=None&ff=20250915002355&v=2.18.0.post9+e462414)


One hundred years of EEG for brain and behaviour research

 Pedro Valdes-Sosa

 2024-08-22  1 min

 2 words


OOSTENVELD ROBERT



 Read full article:


[https://pubmed.ncbi.nlm.nih.gov/39174725/?](https://pubmed.ncbi.nlm.nih.gov/39174725/?utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1BUB2BG5RbxObIm-hBbiJWEhGG43qIVrvGNHOTqBKva9wWrltM&fc=None&ff=20250915002355&v=2.18.0.post9+e462414)

[utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1BUB2BG5RbxObIm-hBbiJWEhGG43qIVrvGNHOTqBKva9wWrltM&fc=None&ff=20250915002355&v=2.18.0.post9+e462414](https://pubmed.ncbi.nlm.nih.gov/39174725/?utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1BUB2BG5RbxObIm-hBbiJWEhGG43qIVrvGNHOTqBKva9wWrltM&fc=None&ff=20250915002355&v=2.18.0.post9+e462414)

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


 Richard J A van Wezel

 2024-09-04  1 min

 65 words

OOSTENVELD ROBERT

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


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

 Krzysztof J
Gorgolewski

 2024-09-23

 1
min

 82
words

OOSTENVELD ROBERT


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


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

 Fanny
Quandt

 2025-01-09

 1
min

 65
words

OOSTENVELD ROBERT


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


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

 Luca
Pollonini

 17 2025-01-27

 1
min

 70
words

OOSTENVELD ROBERT


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


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

 Lyuba
Zehl

 17 2025-06-26

 1
min

 67
words

OOSTENVELD ROBERT


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


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

 Tim M
Tierney

 2025-08-13

 1
min

 74
words

OOSTENVELD ROBERT


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


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Optimal configuration of on-scalp OPMs with fixed channel counts

 Robert
Oostenveld

 2025-08-13

 1
min

 69
words

OOSTENVELD ROBERT


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

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A Stereo Synchronization Method for Consumer-Grade Video Cameras to Measure Multi-Target 3D Displacement Using Image Processing in Shake Table Experiments

 Yuan-Sen
Yang



2025-09-13



1

min



63

words

LOW VISION

Summary: The use of consumer-grade cameras for stereo vision provides a cost-effective, non-contact method for measuring three-dimensional displacement in civil engineering experiments. However, obtaining accurate 3D coordinates requires accurate temporal alignment of several unsynchronized cameras, which is...



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Real-Time Driver Attention Detection in Complex Driving Environments via Binocular Depth Compensation and Multi-Source Temporal Bidirectional Long Short-Term Memory Network



Huajie
Liu



2025-09-13



1
min



62
words

LOW VISION

Summary: Driver distraction is a key factor contributing to traffic accidents. However, in existing computer vision-based methods for driver attention state recognition, monocular camera-based approaches often suffer from low accuracy, while multi-sensor data fusion techniques are compromised by poor real-ti...



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Tracking-Based Denoising: A Trilateral Filter-Based Denoiser for Real-World Surveillance Video in Extreme Low-Light Conditions



Chen

Lv



2025-09-13



1

min



75

words

LOW VISION

Summary: Video denoising in extremely low-light surveillance scenarios is a challenging task in computer vision, as it suffers from harsh noise and insufficient signal to reconstruct fine details. The denoising algorithm for these scenarios encounters challenges such as the lack of ground truth, and the nois...

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A Unified Preprocessing Pipeline for Noise-Resilient Crack Segmentation in Leaky Infrastructure Surfaces



Jeongho

Cho



2025-09-13



1

min



67


words


LOW VISION

Summary: Wet cracks caused by leakage often exhibit visual and structural distortions due to surface contamination, salt crystallization, and corrosion byproducts. These factors significantly degrade the performance of sensor- and vision-based crack detection systems. In moist environments, the initiation an...


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U-ResNet, a Novel Network Fusion Method for Image Classification and Segmentation

 Yaqing
Song

 2025-09-13

 1
min

 65
words

LOW VISION


Summary: Image classification and segmentation are important tasks in computer vision. ResNet and U-Net are representative networks for image classification and image segmentation, respectively. Although many scholars used to fuse these two networks, most integration focuses on image segmentation with U-Net,...


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Serum Vitamin D Levels as Predictors of Response to Intravitreal Anti-VEGF Therapy in Diabetic Macular Edema: A Clinical Correlation Study

 Ana Maria
Stoica

 2025-09-13

 1
min

 66
words

LOW VISION


Summary: Our study explored the role of serum 25-hydroxyvitamin D [25(OH)D] levels as an indicator of response to intravitreal anti-vascular endothelial growth factor (anti-VEGF) therapy in patients with diabetic macular edema (DME), highlighting functional and anatomical outcomes linked to systemic biomarkers...

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Visual Outcomes of a Non-Diffractive Extended Depth-of-Focus Intraocular Lens in Patients with Early-Stage Age-Related Macular Degeneration

 Celia Sánchez-Ramos



2025-09-13



1
min



66
words

LOW VISION

Summary: Background/Objectives: Age-related macular degeneration (AMD) is a leading cause of visual impairment in older adults and often coexists with cataracts. The indication of presbyopia-correcting intraocular lenses (IOLs) in these patients remains controversial. This study aimed to evaluate the clinica...




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Use of Mechanical Enhanced Colonoscopy to Improve Polyp Detection During Colorectal Cancer Screening: A Real-World Healthcare Database Analysis

 Seth A
Gross

 2025-09-13

 1
min

 71
words

LOW VISION


Summary: Introduction: High performance colonoscopy requires the monitoring of an individual's adenoma detection rate (ADR). The Endocuff (EndoCuff Vision, Olympus America Inc., Center Valley, PA, USA) is an endoscopic distal attachment device that increases surface area exposure during colonoscopy. While st...


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Metabolic alterations in diabetic patients: aqueous humor profiling for biomarker discovery

 Guna
Laganovska

 2025-09-13

 1
min

 64
words

LOW VISION


Summary: Diabetic retinopathy, a leading cause of vision loss in working-age populations, is a severe complication of diabetes mellitus. Metabolomics, a key approach in systems biology, offers insights into the complex pathophysiology of diabetes by analyzing low-molecular-weight compounds in biological cont...


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Evaluating the predictive potential of Th1 (IFN- γ +/CD4+/CD4+/CD4+ in rapidly progressive amyotrophic lateral sclerosis

 Hao Zhang

 2025-09-14

 1 min

 31 words

LOW VISION


Summary: CONCLUSIONS: Th1/CD4⁺ (with an optimal cutoff value of 16.21) was established as an independent risk factor for rapid progression in ALS. The machine learning model incorporating Th1/CD4⁺ demonstrated strong predictive performance.


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My Broken Heart

 Ashley C Rider

 2025-05-08

 1 min

 34 words

TACTILE ACUITY


Summary: AUDIENCE: The target audience for the key learning objectives of this Left-Ventricular Assist Device (LVAD) simulation are emergency medicine residents. Other team members such as attendings, nurses, pharmacists, and technicians could potentially be integrated.

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Distributions of orofacial two-point discrimination threshold: A cross-sectional study in healthy population and patients with pain-related temporomandibular disorders

 Xin
Xiong

 17 2025-05-15

 1
min

 70
words

TACTILE ACUITY


Summary: CONCLUSION: Pain-related TMDs patients had weaker orofacial tactile acuity, which was consistent in gender subgroups, except for the temporal region of males. Healthy males had weaker tactile acuity compared to females in TMJ and temporal regions. No significant gender effect on orofacial tactile ac...




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

 Thomas Hummel

 2025-05-28  1 min  70 words


TACTILE ACUITY

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

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

 Hiroyuki Kajimoto

 2025-06-17  1 min  75 words

TACTILE ACUITY


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

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

 Leah R
Bent

 2025-06-27

 1
min

 69
words

TACTILE ACUITY


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


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Directional vibro-tactile hazard warnings for drivers with vision impairments

 Alex R
Bowers

 2025-07-02

 1
min

 80
words

TACTILE ACUITY


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



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

 Cecilia
Guariglia

 2025-08-01  1
min

 64
words

TACTILE ACUITY

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



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

 Eric
Fjeldheim

 2025-08-24  1
min

 22
words

TACTILE ACUITY


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


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

 Paula Anne Newman-Casey


 2025-09-09

 1 min


 74 words


TACTILE ACUITY

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


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

 Sviatoslav N Bagriantsev


 2025-09-13

 1 min

 58 words

TACTILE ACUITY

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

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WAYVision: A hybrid deep learning approach for recognizing handwritten Kannada Braille using wavelet transformation and attention based YOLOv5



Shobha Rani

N



2025-08-25



1

min



64


words

BRAILLE

Summary: Handwritten Braille character recognition presents a significant challenge in the field of assistive technology, especially with the inclusion of various linguistic scripts such as Kannada. The data set is uniquely curated, combining ground-truth data from Kaggle and real-world samples collected fro...

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

 Joseph Paul
Nemargut



2025-08-25



1
min



62
words

BRaille

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




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

 Jianming
Xu



2025-08-25



1
min



62
words

BRaille

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





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


 Million
Phiri

 2025-08-26  1
min

 46
words

BRaille


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



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Explosion-powered eversible tactile displays

 Robert F
Shepherd

 2025-08-27  1
min

 64
words

BRaille


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


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

 Zhijun
Ma

 2025-08-28

 1
min

 57
words

[BRAILLE](#)


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


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

 Min
Zhang

 2025-08-28

 1
min

 64
words

[BRAILLE](#)

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

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



Hao
Lin



2025-09-01



1
min



72
words

BRAILLE

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



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



Ji
Liu



2025-09-02



1
min



56
words

BRAILLE

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



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

Önder
İşlek

17

2025-09-12



1
min



55
words

BRAILLE

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

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Effects of transcranial alternating current stimulation on Spike train correlation in two-compartment model neurons

Guosheng
Yi

17

2025-09-10



1
min



72
words

TDCS TACS TRNS

Summary: Correlated spiking has been widely found in large population of neurons and been linked to neural coding. Transcranial alternating current stimulation (tACS) is a promising non-invasive brain stimulation technique that can modulate the spiking activity of neurons. Despite its growing application, th...

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Personalized High-Definition Transcranial Direct Current Stimulation for the Treatment of Depression: A Randomized Clinical Trial

 Katherine
Narr

 17

2025-09-11



1

min



66

words

TDCS TACS TRNS


Summary: CONCLUSIONS AND RELEVANCE: In this randomized clinical trial of HD-tDCS in participants with moderate to severe depression, the 12-day HD-tDCS therapy was observed to significantly improve mood with a moderate effect size. Similar effect sizes in pharmacotherapy, psychotherapy, and conventional tDCS...

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Effect of theta-transcranial alternating current stimulation on working memory performance among healthy adults: A systematic review and meta-analysis

 Rui-Ke
Zhang

 17

2025-09-11



1

min



27

words

TDCS TACS TRNS

Summary: CONCLUSION: Theta-tACS enhances working memory in healthy adults, with effects modulated by the task type and protocol parameters, offering dual implications for cognitive enhancement and clinical interventions.

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Review of nonpharmacological interventions for delaying the effects of cerebral neuropathy caused by diabetes

Lun-De
Liao



2025-09-12



1
min



67
words

TDCS TACS TRNS

Summary: Diabetic peripheral neuropathy (DPN) is a debilitating complication of diabetes that affects nearly half of diabetic patients and manifests as chronic pain, sensory loss, and motor dysfunction. The limited efficacy of traditional pharmacological treatments, coupled with their side effects, has inten...



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Online HD-tRNS over the right temporoparietal junction modulates social inference but not motor coordination

Guillaume
Dumas



2025-09-12



1
min



68
words

TDCS TACS TRNS

Summary: Social interactions are fundamental to human cognition, with the right temporoparietal junction (rTPJ) playing a key role in integrating motor coordination and social inference. While transcranial random noise stimulation (tRNS) is a promising technique for modulating cortical excitability in real t...




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Neural Correlates of Borderline Personality Disorder (BPD) Based on Electroencephalogram (EEG)-A Mechanistic Review

 Donata Kurpas



2025-09-13



1 min



62 words

TDCS TACS TRNS


Summary: Borderline Personality Disorder (BPD) is marked by emotional dysregulation, instability in self-image and relationships, and high impulsivity. While functional magnetic resonance imaging (fMRI) studies have provided valuable insights into the disorder's neural correlates, electroencephalography (EEG...

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Burnout and the Brain-A Mechanistic Review of Magnetic Resonance Imaging (MRI) Studies

 Donata Kurpas



2025-09-13



1 min



64 words

TDCS TACS TRNS


Summary: Occupational burnout is ubiquitous yet still debated as a disease entity. Previous reviews surveyed multiple biomarkers but left their neural substrate unclear. We therefore asked: What, if any, reproducible magnetic-resonance signature characterises burnout? Following PRISMA principles adapted for ...

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From Immediate Impact to Enduring Change: A Transcriptomic Comparison of tDCS's Temporal Effects and Its Long-Term Equivalence with TMS

 Hanoch Kaphzan



2025-09-13



1 min



63 words

TDCS TACS TRNS

Summary: Transcranial Direct Current Stimulation (tDCS) and Transcranial Magnetic Stimulation (TMS) are neuromodulatory techniques with therapeutic potential for similar disorders; however, their molecular effects require further elucidation, and whether both strategies work in similar biological pathways is...



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General Innovations in Pain Management

 Alaa Abd-Elseyed



2025-09-13



1 min



74 words

TDCS TACS TRNS

Summary: Chronic pain management is constantly evolving, and our literature review aims to describe the general innovations happening within the field. The need for advancements in chronic pain is a necessity, as debilitating back pain and other forms of chronic pain are significant issues in the United States...





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Behavioral outcomes after tDCS treatment during immediate post-intervention and follow-up periods in children and adolescents diagnosed with attention-deficit/hyperactivity disorder: a systematic review and meta-analysis on randomized sham-controlled trials

 Kuo-Chuan
Hung

 2025-09-13

 1
min

 58
words

TDCS TACS TRNS


Summary: This meta-analysis aimed at elucidating the effectiveness of transcranial direct current stimulation (tDCS) in improving behavioral symptoms of attention deficit/hyperactivity disorder (ADHD) in children/adolescents during the immediate post-intervention/follow-up periods and identifying potential c...


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Neural dynamics of constraint relaxation and problem representation changes in single-trial insight problem solving: An fNIRS study

 Rieko
Osu

 2025-09-10

 1
min

 68
words

FNIRS

Summary: Insight problem solving involves overcoming an impasse when a solution seems unreachable, often experienced as an 'Aha!' moment. In such solving, shifting from an incorrect representation imposed by constraints to a correct representation through constraint relaxation is critical. Prior research com...

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Differential Cortical Hemodynamics During Standard and Reversed Visually Guided Navigation: An fNIRS-Based Investigation

 Hee
Cho

 17

2025-09-10

 1


min

 68

words

FNIRS

Summary: Visuospatial perception, which is based on the comprehension of objects and space, requires spatial attention to the surrounding environment. Stimulus-related elements that affect visuospatial tasks include object geometry, familiarity, complexity, and picture plane versus depth rotation. The dorsal...

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Intermittent theta burst stimulation enhances prefrontal activation and connectivity: evidence from fNIRS

 Xia
Bi

 17

2025-09-11

 1

min

 16

words

FNIRS


Summary: OBJECTIVE: To investigate the neuro-regulatory mechanisms of intermittent theta burst stimulation (iTBS) on prefrontal brain function.




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Investigating Hemodynamic Patterns During Beat Processing in Cochlear Implant Users: Insights from a Finger Tapping Study

 Raymond Lee Goldsworthy

 2025-09-11  1 min  46 words

FNIRS


Summary: INTRODUCTION: Individuals with cochlear implants often struggle with melody and timbre perception in music, leading to diminished music appreciation. While they demonstrate proficiency in recognizing beat and rhythm, it remains unclear whether beat information is processed similarly in their brains ...

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Evaluating the effects of multimodal EEG-fNIRS neurofeedback for motor imagery: An experimental platform and study protocol

 Pierre
Maurel

 17 2025-09-11

 1
min

 61
words

FNIRS

Summary: BACKGROUND: Neurofeedback (NF) enables the self-regulation of brain activity through real-time feedback extracted from brain measures. Recently, the combination of several neuroimaging methods to characterize brain activity has led to growing interest in NF. The integration of various portable recor...


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The Emotional and Cognitive Effects of Synchronizing to Music During Acute Exercise: An fNIRS Study

 William Forde
Thompson

 17 2025-09-12

 1
min

 61
words

FNIRS

Summary: Synchronizing movements to music enhances exercise performance and enjoyment, yet its short-term effects on attention and cognition remain underexplored. This study examined the influence of synchronous music, asynchronous music, and a no-music control condition on emotional responses, perceived exe...

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Interbrain Synchrony Mitigates Extremism Within Echo Chambers



Simone Shamay-Tsoory



2025-09-12



1 min



65 words

FNIRS

Summary: People tend to engage with content that aligns with their pre-existing attitudes, forming echo chambers that reinforce biases and may amplify extremism. Here, we investigate whether discussions within homogeneous groups drive attitudinal extremity and whether interbrain synchronized activity between...



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An Empirical Study on the Impact of Different Interaction Methods on User Emotional Experience in Cultural Digital Design



Feng Zou



2025-09-13



1 min



64 words

FNIRS

Summary: Traditional culture plays a vital role in shaping national identity and emotional belonging, making it imperative to explore innovative strategies for its digital preservation and engagement. This study investigates how interaction design in cultural digital games influences users' emotional experie...





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TopoTempNet: A High-Accuracy and Interpretable Decoding Method for fNIRS-Based Motor Imagery

 Zhejun Kuang

 2025-09-13

 1 min

 63 words

FNIRS


Summary: Functional near-infrared spectroscopy (fNIRS) offers a safe and portable signal source for brain-computer interface (BCI) applications, particularly in motor imagery (MI) decoding. However, its low sampling rate and hemodynamic delay pose challenges for temporal modeling and dynamic brain network an...


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Compact Colocated Bimodal EEG/fNIRS Multi-Distance Sensor

 Angélique Rascle

 2025-09-13

 1 min

 70 words

FNIRS

Summary: At present, it is a real challenge to measure brain signals outside of the lab with portable systems that are robust, comfortable and easy to use. We propose in this article a bimodal electroencephalography-functional near-infrared spectroscopy (EEG-fNIRS) sensor whose spatial geometry allows the ro...

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Medial preoptic CCKAR mediates anxiety and aggression induced by chronic emotional stress in male mice

Hong
Lian

 2025-09-11

 1
min

 65
words

BRAIN COMPUTER INTERFACE

Summary: Anxiety disorders frequently accompany aggression, with their co-occurrence predicting greater functional impairment and poor prognosis. Nevertheless, the underlying neural mechanisms remain elusive, primarily due to a lack of appropriate animal models. Here, we designed a chronic conspecific outsid...


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EEGOpt: A performance efficient Bayesian optimization framework for automated EEG signal classification

Monisha
Chakraborty

 2025-09-11

 1
min

 34
words

BRAIN COMPUTER INTERFACE

Summary: CONCLUSION: EEGOpt is a scalable and interpretable framework that automatically identifies optimal signal processing and classification strategies adaptable to EEG datasets, making it a valuable tool for neuroscientific research, diagnostics, and brain-computer interface development.


 Read full article:

[https://pubmed.ncbi.nlm.nih.gov/40934551/?](https://pubmed.ncbi.nlm.nih.gov/40934551/?utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1rSUu--tbw4049Wgf_RdKXdtNCvGW0IVBZFpHe7zaN4k4DwoD5&fc=None&ff=20250915002337&v=2.18.0.post9+e462414)


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Stretchable Multilevel Mesh Brain Electrodes for Neuroplasticity in Glioma Patients Undergoing Surgery

Xue
Feng

2025-09-12

1
min

63
words

BRAIN COMPUTER INTERFACE

Summary: Brain disease surgical treatment usually leads to neurological dysfunction. Electroencephalogram (EEG)-based neuroplasticity study may facilitate patient nerve function recovery from injury, allowing a return to normal activities. Due to the limitations of wound infections and hair barrier effects, ...

 **Read full article:**

[https://pubmed.ncbi.nlm.nih.gov/40936365/?](https://pubmed.ncbi.nlm.nih.gov/40936365/?utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1rSUu--tbw4049Wgf_RdKXdtNCvGW0IVBZFpHe7zaN4k4DwoD5&fc=None&ff=20250915002337&v=2.18.0.post9+e462414)

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[tbw4049Wgf_RdKXdtNCvGW0IVBZFpHe7zaN4k4DwoD5&fc=None&ff=20250915002337&v=2.18.0.post9+e462414](https://pubmed.ncbi.nlm.nih.gov/40936365/?utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1rSUu--tbw4049Wgf_RdKXdtNCvGW0IVBZFpHe7zaN4k4DwoD5&fc=None&ff=20250915002337&v=2.18.0.post9+e462414)

2D Vanadium Carbide/Oxide Heterostructure-Based Artificial Sensory Neuron for Multi-Color Near-Infrared Object Recognition

 Jiahong Wang

 17

2025-09-12



1 min



58 words

BRAIN COMPUTER INTERFACE

Summary: Near-infrared (NIR) photon detection and object recognition are crucial technologies for all-weather target identification in autonomous navigation, nighttime surveillance, and tactical reconnaissance. However, conventional NIR detection systems, which rely on photodetectors and von Neumann computin...

 **Read full article:**

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[tbw4049Wgf_RdKXdNCvGW0lVBZFpHe7zaN4k4DwoD5&fc=None&ff=20250915002337&v=2.18.0.post9+e462414](https://pubmed.ncbi.nlm.nih.gov/40937924/?utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1rSUu--tbw4049Wgf_RdKXdNCvGW0lVBZFpHe7zaN4k4DwoD5&fc=None&ff=20250915002337&v=2.18.0.post9+e462414)

Sequence action representations contextualize during early skill learning



Leonardo G
Cohen



2025-09-12



1
min



68
words

BRAIN COMPUTER INTERFACE

Summary: Activities of daily living rely on our ability to acquire new motor skills composed of precise action sequences. Here, we asked in humans if the millisecond-level neural representation of an action performed at different contextual sequence locations within a skill differentiates or remains stable d...



Read full article:

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[tbw4049Wgf_RdKXdtNCvGW0IVBZFpHe7zaN4k4DwoD5&fc=None&ff=20250915002337&v=2.18.0.post9+e462414](https://pubmed.ncbi.nlm.nih.gov/40938318/?utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1rSUu--tbw4049Wgf_RdKXdtNCvGW0IVBZFpHe7zaN4k4DwoD5&fc=None&ff=20250915002337&v=2.18.0.post9+e462414)

Classification of Different Motor Imagery Tasks with the Same Limb Using Electroencephalographic Signals



Carlos Julio Tierra-
Criollo



2025-09-13



1
min



69
words

BRAIN COMPUTER INTERFACE

Summary: Stroke is a neurological condition that often results in long-term motor deficits. Given the high prevalence of motor impairments worldwide, there is a critical need to explore innovative neurorehabilitation strategies that aim to enhance the quality of life of patients. One promising approach invol...




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[tbw4049Wgf_RdKXdtNCvGW0IVBZFpHe7zaN4k4DwoD5&fc=None&ff=20250915002337&v=2.18.0.post9+e462414](https://pubmed.ncbi.nlm.nih.gov/40942721/?utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1rSUu--tbw4049Wgf_RdKXdtNCvGW0IVBZFpHe7zaN4k4DwoD5&fc=None&ff=20250915002337&v=2.18.0.post9+e462414)

TopoTempNet: A High-Accuracy and Interpretable Decoding Method for fNIRS-Based Motor Imagery

 Zhejun
Kuang

 17

2025-09-13



1
min



63
words

BRAIN COMPUTER INTERFACE

Summary: Functional near-infrared spectroscopy (fNIRS) offers a safe and portable signal source for brain-computer interface (BCI) applications, particularly in motor imagery (MI) decoding. However, its low sampling rate and hemodynamic delay pose challenges for temporal modeling and dynamic brain network an...


 **Read full article:**


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[tbw4049Wgf_RdKXdtNCvGW0lVBZFpHe7zaN4k4DwoD5&fc=None&ff=20250915002337&v=2.18.0.post9+e462414](https://pubmed.ncbi.nlm.nih.gov/40942766/?utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1rSUu--tbw4049Wgf_RdKXdtNCvGW0lVBZFpHe7zaN4k4DwoD5&fc=None&ff=20250915002337&v=2.18.0.post9+e462414)

A new wide-scope, multi-biomarker wastewater-based epidemiology analytical method to monitor the health and well-being of inhabitants at a metropolitan scale

 Barbara Kasprzyk-Hordern


 2025-09-13

 1 min

 64 words

BRAIN COMPUTER INTERFACE

Summary: This manuscript establishes a new, comprehensive biomarker list and a multiresidue trace quantification method for community-wide health and well-being assessment at a metropolitan scale using wastewater-based epidemiology (WBE) and mass spectrometry pipelines. This method enables the quantification...

 **Read full article:**

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Thalamocortical dysrhythmia-related sleep spindle desynchronization in patients with tinnitus



Yuanqing
Li



2025-09-13



1
min



68
words

BRAIN COMPUTER INTERFACE

Summary: Patients with tinnitus commonly suffer from sleep problems, and the underlying neural mechanisms remain unclear. Previous studies have focused primarily on the correlation between patients' sleep structure and tinnitus, lacking exploration into the links between sleep problems and the underlying pat...



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[tbw4049Wgf_RdKXdtNCvGW0IVBZFpHe7zaN4k4DwoD5&fc=None&ff=20250915002337&v=2.18.0.post9+e462414](https://pubmed.ncbi.nlm.nih.gov/40945543/?utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1rSUu--tbw4049Wgf_RdKXdtNCvGW0IVBZFpHe7zaN4k4DwoD5&fc=None&ff=20250915002337&v=2.18.0.post9+e462414)

Neurodevelopmental deviations in schizophrenia: Evidences from multimodal connectome-based brain ages



Huafu
Chen



2025-09-13



1
min



21
words

BRAIN COMPUTER INTERFACE

Summary: CONCLUSION: These findings from a multimodal brain age perspective suggest that advanced brain age gaps exist early in youths with schizophrenia.



Read full article:

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Monthly Updates [August]

17

2025-08-01

4

min

858

words

FMHY

Summary:

INFO

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

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

Monthly Updates [Sept]

17

2025-08-31

2

min

569

words

FMHY


Summary:

INFO

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

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

Fight Chat Control


 2025-09-04  1 min  153 words

FMHY





Summary:

The EU (still) wants to scan your private messages and photos.

 The "Chat Control" proposal would mand...


 Read full article:
<https://fmhy.net/posts/FCC>

High-performance quantum computing framework with 34x speedup - Arrow SciCompute Engine

 /u/
 Pallasting  2025-09-15  1 min  122 words

REDDIT PYTHON

Summary: Just open-sourced Arrow SciCompute Engine - a quantum computing framework that's 34x faster than traditional Python approaches! Built with #RustLang + Apache Arrow, delivers massive speedups while keeping a Pythonic API. <https://github.com...>

 Read full article:
https://www.reddit.com/r/Python/comments/1nhb6hb/highperformance_quantum_computing_framework_with/

Which NPM package has the largest version number?

 2025-09-15  1 min  2 words




HACKER NEWS

Summary: [Comments](https://news.ycombinator.com/item?id=45245678)

 Read full article:

<https://adamhl.dev/blog/largest-number-in-npm-package/>

For Good First Issue – A repository of social impact and open source projects

 Brysonbw  2025-09-15  1 min  13 words

HACKER NEWS

Summary:

Article URL: <https://forgoodfirstissue.github.com/>

Comments URL: <https://news.ycombinator.com/item?id=45245313>



Points: 5

Comments: 1

 Read full article:

<https://forgoodfirstissue.github.com/>

Which NPM package has the largest version number?

 genshii  2025-09-15  1 min  13 words

HACKER NEWS

Summary:

Article URL: <https://adamhl.dev/blog/largest-number-in-npm-package/>

Comments URL: <https://news.ycombinator.com/item?id=45245678>





Points: 13

Commen...

 Read full article:

<https://adamhl.dev/blog/largest-number-in-npm-package/>

Decentralized YouTube alternative adds livestream scheduling in new release

 MilnerRoute  2025-09-15  1 min  13 words

HACKER NEWS

Summary:

Article URL: <https://news.itsfoss.com/peertube-7-3/>

Comments URL: <https://news.ycombinator.com/item?id=45245802>

Points: 8

Comments: 1

 Read full article:

<https://news.itsfoss.com/peertube-7-3/>

Education: Social and Cultural Issues



Adriel
Carridice



2025-02-05



1
min



61
words

BRAIN

Summary: Devices that therapeutically aid users with cognitive and learning disabilities/ differences should not be equally applied to a general population seeking learning advantages. It must not be assumed that therapies able to improve cognition for mental and cognitive disorders (such as executive control...



Read full article:

<https://brain.ieee.org/publications/neuroethics-framework/education/education-social-and-cultural-issues/education-social-and-cultural-issues/>

Education: Standards



Adriel
Carridice



2025-02-13



1
min



0
words

BRAIN



Read full article:

<https://brain.ieee.org/publications/neuroethics-framework/education/standards-education/education-standards/>

Education: Additional Resources



Adriel
Carridice



2025-02-13



1
min



61
words

BRAIN

Summary: Buckingham Shum, S. (2022). The UTS “EdTech Ethics” Deliberative Democracy Consultation: Rationale, Process and Outcomes. Connected Intelligence Centre, University of Technology Sydney, AUS. <https://cic.uts.edu.au/projects/edtech-ethics>
León Declaration on European neurotechnology (2023): a human-fo...



Read full article:

<https://brain.ieee.org/publications/neuroethics-framework/education/educational-and-training-resources-education/education-additional-resources/>

Education: References



Adriel
Carridice



2025-02-13



1
min



61
words

BRAIN

Summary: [1] OECD “Neurotechnology Toolkit To support policymakers in implementing the OECD Recommendation on Responsible Innovation in Neurotechnology,” 2024.: <https://www.oecd.org/content/dam/oecd/en/topics/policy-sub-issues/emerging-technologies/neurotech-toolkit.pdf>. [2] van Kesteren and Meeter, 2020 htt...



Read full article:

<https://brain.ieee.org/publications/neuroethics-framework/education/references/education-references/>

IEEE Brain Annual Flagship Workshop a Success






 ieeebrain  2025-03-03  1 min  61 words 

Summary: IEEE Brain once again hosted the IEEE Brain Discovery and Neurotechnology Workshop as a satellite event to the 2024 Society of Neuroscience Workshop (SfN). Approximately 180 attended the two-day event, which was held at the University of Illinois Chicago (UIC), October 3-4, 2024 (Figure 1). Groundbr...

 Read full article:

<https://brain.ieee.org/braininsight-articles/ieee-brain-annual-flagship-workshop-a-success/>

IEEE Brain Workshop on AI for Neurotechnology

 ieeebrain  2025-03-03  1 min  61 words 

Summary: The IEEE Brain Workshop on AI for Neurotechnology was held on June 30, 2024, at the Pacifico Yokohama Conference Center in Japan. This event was part of the World Congress on Computational Intelligence (WCCI 2024) and was conducted in association with the International Joint Conference on Neural Net...

 Read full article:

<https://brain.ieee.org/braininsight-articles/ieee-brain-workshop-on-ai-for-neurotechnology/>

Call for Papers: IEEE Brain Special Issue






 ieeebrain  17 2025-03-03  1 min  36 words 

Summary: In a unique interdisciplinary collaboration with the IEEE's Society on Social Implications of Technology (SSIT) and IEEE Brain, J-FLEX is joining forces to explore both the technology of the Internet-of-Medical-Things (IoMT) solutions and medical wearables/implantables.

 Read full article:

<https://brain.ieee.org/braininsight-articles/ieee-journal-on-flexible-electronics/>

IEEE Brain Joins the American Brain Coalition

 ieeebrain  17 2025-03-03  1 min  61 words 

Summary: IEEE Brain is pleased to announce its acceptance as a nonprofit member of the American Brain Coalition (ABC), a prestigious alliance of over 150 organizations dedicated to advancing brain research, advocacy, and improving treatments for individuals affected by brain conditions. The ABC Board has ent...

 Read full article:

<https://brain.ieee.org/braininsight-articles/ieee-brain-joins-the-american-brain-coalition-as-a-nonprofit-member/>

Call for Papers: IEEE Transactions on Human-Machine Systems



Adriel
Carridice



2025-06-18



1
min



61
words

BRAIN

Summary: Special Issue on Brain Discovery and Neurotechnology: Featured Research from 2024 IEEE Brain Discovery & Neurotechnology Workshop This special issue is motivated by the success of the IEEE Brain Discovery and Neurotechnology Workshop held in October 2024. This annual workshop is sponsore...



Read full article:

<https://brain.ieee.org/braininsight-articles/call-for-papers-ieee-transactions-on-human-machine-systems/>

The CHAT System: A Wearable Haptic System for Facilitating Tactile Communication



2025-03-07



1
min



196
words

TRANSACTIONS HAPTICS




Summary: Despite the richness of the human tactile capacity, remote communication practices often lack touch-based interactions. This leads to overtaxing our visual and auditory channels, a lack of connection and engagement, and inaccessibility for diverse sensory groups. In this paper, we learn from haptic ...



Read full article:

<http://ieeexplore.ieee.org/document/10916990>

The Snail: A Wearable Actuated Prop to Simulate Grasp of Rigid and Soft Objects in Virtual Reality

 2025-03-05  1 min  176 words




TRANSACTIONS HAPTICS

Summary: The Snail is a wearable haptic interface that enables users to experience force feedback when grasping objects in Virtual Reality. It consists of a 3D-printed prop attached to the tip of the thumb that can rotate thanks to a small actuator. The prop is shaped like a snail to display different graspi...

 Read full article:


<http://ieeexplore.ieee.org/document/10912761>

Closed-Loop Manual Control With Tactile or Visual Feedback Under Wireless Link Impairments

 2025-02-20  1 min  218 words




TRANSACTIONS HAPTICS

Summary: The emergence of low-latency wireless connectivity has opened significant new possibilities for closed-loop human-machine interaction (HMI) systems. However, data transmission, particularly over wireless links, suffers from impairments, such as random latency fluctuations and packet loss, affecting ...

 Read full article:

<http://ieeexplore.ieee.org/document/10897855>

Measurement of Airborne Ultrasound Focus on Skin Surface Using Thermal Imaging

 2025-02-26  1 min  182 words

TRANSACTIONS HAPTICS

Summary: In recent years, tactile presentation technology using airborne ultrasound has attracted attention. To achieve an ideal tactile presentation using ultrasound, the acoustic field on the user's skin surface must be determined, particularly the location of the focal point. Previous studies have suggest...

 Read full article:

<http://ieeexplore.ieee.org/document/10906472>

TexSenseGAN: A User-Guided System for Optimizing Texture-Related Vibrotactile Feedback Using Generative Adversarial Network

 2025-02-17  1 min  197 words

TRANSACTIONS HAPTICS

Summary: Vibration rendering is essential for creating realistic tactile experiences in human-virtual object interactions, such as in video game controllers and VR devices. By dynamically adjusting vibration parameters based on user actions, these systems can convey spatial features and contribute to texture...

 Read full article:

<http://ieeexplore.ieee.org/document/10891204>

Neural responses to binocular in-phase and anti-phase stimuli



Richard, B., Baker, D.
H.



2025-09-13



1
min



182
words

BIORXIV NEUROSCIENCE

Summary: Binocular vision fuses similar inputs from the two eyes into a single percept, whereas incompatible inputs can produce rivalry, lustre, or diplopia. We measured neural responses to binocular stimuli with different phase relationships to test predictions from contemporary binocular combination models...



Read full article:

<https://www.biorxiv.org/content/10.1101/2025.09.08.674974v1?rss=1>

Glucagon-like Peptide-1 receptor agonists as emerging therapeutics in bipolar disorder: a narrative review of preclinical and clinical evidence



2025-09-13



1
min



0
words

NATURE NEUROSCIENCE SUBJECTS



Read full article:

<https://www.nature.com/articles/s41380-025-03261-0>

In vivo Pirt-Marina voltage sensor imaging detects primary sensory neuron–specific voltage dynamics and neuronal plasticity changes

Yan ZhangHyeonwi SonJohn ShannonhouseRuben GomezEungyung KimChih-Hsuan AiMan-Kyo

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Antonio, San Antonio, TX 78229



2025-09-12



1

min



48

words

PNAS NEUROSCIENCE

Summary: Proceedings of the National Academy of Sciences, Volume 122, Issue 37, September 2025. **Significance** This is a significant contribution to the field of sensory neurobiology by characterizing a mouse line for voltage imaging in primary sensory neurons following nociceptive and pruriceptive stimuli...



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<https://www.pnas.org/doi/abs/10.1073/pnas.2416712122?af=R>

Reconstructing high-resolution visual perceptual images from human intracranial electrocorticography signals



Yongjie Deng, Xiaolong Wu, Xin Gao, Weizhong Li and Dingguo Zhang



2025-09-04



1 min



167 words

JOURNAL NEURAL ENGINEERING

Summary: Objectives. Reconstruction of visual perception from brain signals has emerged as a promising research topic. Electrocorticography (ECoG) is a kind of high-quality intracranial signal with good spatiotemporal resolution that offers some new opportunities. However, according to our knowledge, there a...



Read full article:

<http://iopscience.iop.org/article/10.1088/1741-2552/ae0070>

NaviNIBS: a comprehensive and open-source software toolbox for neuronavigated noninvasive brain stimulation



Christopher C Cline, Lily Forman, Winn Hartford, Jade Truong, Sara Parmigiani and Corey J Keller



2025-09-04



1 min



137 words

JOURNAL NEURAL ENGINEERING

Summary: Objective. Image-guided positioning, or neuronavigation, is critical for precise targeting of transcranial magnetic stimulation (TMS) and other noninvasive brain stimulation. However, existing commercial systems have limitations in flexibility and extensibility for research applications. Approach. W...



Read full article:

<http://iopscience.iop.org/article/10.1088/1741-2552/adfab2>

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



Maria Carla
Piastra



2024-06-14



1
min



64
words

OOSTENVELD ROBERT

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



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



Julius
Welzel



2024-07-02



1
min



72
words

OOSTENVELD ROBERT

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






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One hundred years of EEG for brain and behaviour research

 Pedro Valdes-Sosa

 2024-08-22  1 min

 2 words

OOSTENVELD ROBERT



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


 Richard J A van Wezel

 2024-09-04  1 min

 65 words

OOSTENVELD ROBERT


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


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

 Krzysztof J
Gorgolewski


 2024-09-23

 1
min

 82
words

OOSTENVELD ROBERT


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


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

 Fanny
Quandt

 2025-01-09

 1
min

 65
words

OOSTENVELD ROBERT


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

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

 Luca
Pollonini

 17


2025-01-27

 1
min

 70
words

OOSTENVELD ROBERT


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

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

 Lyuba
Zehl

 17

2025-06-26

 1
min

 67
words

OOSTENVELD ROBERT


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


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

 Tim M
Tierney

 2025-08-13

 1
min

 74
words

OOSTENVELD ROBERT


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


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Optimal configuration of on-scalp OPMs with fixed channel counts

 Robert
Oostenveld

 2025-08-13

 1
min

 69
words

OOSTENVELD ROBERT


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

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A Stereo Synchronization Method for Consumer-Grade Video Cameras to Measure Multi-Target 3D Displacement Using Image Processing in Shake Table Experiments

 Yuan-Sen
Yang



2025-09-13



1

min



63

words

LOW VISION

Summary: The use of consumer-grade cameras for stereo vision provides a cost-effective, non-contact method for measuring three-dimensional displacement in civil engineering experiments. However, obtaining accurate 3D coordinates requires accurate temporal alignment of several unsynchronized cameras, which is...



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Real-Time Driver Attention Detection in Complex Driving Environments via Binocular Depth Compensation and Multi-Source Temporal Bidirectional Long Short-Term Memory Network



Huajie
Liu



2025-09-13



1
min



62
words

LOW VISION

Summary: Driver distraction is a key factor contributing to traffic accidents. However, in existing computer vision-based methods for driver attention state recognition, monocular camera-based approaches often suffer from low accuracy, while multi-sensor data fusion techniques are compromised by poor real-ti...



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Tracking-Based Denoising: A Trilateral Filter-Based Denoiser for Real-World Surveillance Video in Extreme Low-Light Conditions



Chen

Lv



2025-09-13



1

min



75

words

LOW VISION

Summary: Video denoising in extremely low-light surveillance scenarios is a challenging task in computer vision, as it suffers from harsh noise and insufficient signal to reconstruct fine details. The denoising algorithm for these scenarios encounters challenges such as the lack of ground truth, and the nois...

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A Unified Preprocessing Pipeline for Noise-Resilient Crack Segmentation in Leaky Infrastructure Surfaces



Jeongho

Cho



2025-09-13



1

min



67


words


LOW VISION

Summary: Wet cracks caused by leakage often exhibit visual and structural distortions due to surface contamination, salt crystallization, and corrosion byproducts. These factors significantly degrade the performance of sensor- and vision-based crack detection systems. In moist environments, the initiation an...


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U-ResNet, a Novel Network Fusion Method for Image Classification and Segmentation

 Yaqing
Song

 2025-09-13

 1
min

 65
words

LOW VISION


Summary: Image classification and segmentation are important tasks in computer vision. ResNet and U-Net are representative networks for image classification and image segmentation, respectively. Although many scholars used to fuse these two networks, most integration focuses on image segmentation with U-Net,...


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Serum Vitamin D Levels as Predictors of Response to Intravitreal Anti-VEGF Therapy in Diabetic Macular Edema: A Clinical Correlation Study

 Ana Maria
Stoica

 2025-09-13

 1
min

 66
words

LOW VISION


Summary: Our study explored the role of serum 25-hydroxyvitamin D [25(OH)D] levels as an indicator of response to intravitreal anti-vascular endothelial growth factor (anti-VEGF) therapy in patients with diabetic macular edema (DME), highlighting functional and anatomical outcomes linked to systemic biomarkers...

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Visual Outcomes of a Non-Diffractive Extended Depth-of-Focus Intraocular Lens in Patients with Early-Stage Age-Related Macular Degeneration

 Celia Sánchez-Ramos



2025-09-13



1
min



66
words

LOW VISION

Summary: Background/Objectives: Age-related macular degeneration (AMD) is a leading cause of visual impairment in older adults and often coexists with cataracts. The indication of presbyopia-correcting intraocular lenses (IOLs) in these patients remains controversial. This study aimed to evaluate the clinica...




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Use of Mechanical Enhanced Colonoscopy to Improve Polyp Detection During Colorectal Cancer Screening: A Real-World Healthcare Database Analysis

 Seth A
Gross

 2025-09-13

 1
min

 71
words

LOW VISION


Summary: Introduction: High performance colonoscopy requires the monitoring of an individual's adenoma detection rate (ADR). The Endocuff (EndoCuff Vision, Olympus America Inc., Center Valley, PA, USA) is an endoscopic distal attachment device that increases surface area exposure during colonoscopy. While st...


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Metabolic alterations in diabetic patients: aqueous humor profiling for biomarker discovery

 Guna
Laganovska

 2025-09-13

 1
min

 64
words

LOW VISION


Summary: Diabetic retinopathy, a leading cause of vision loss in working-age populations, is a severe complication of diabetes mellitus. Metabolomics, a key approach in systems biology, offers insights into the complex pathophysiology of diabetes by analyzing low-molecular-weight compounds in biological cont...


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Evaluating the predictive potential of Th1 (IFN- γ +/CD4+/CD4+/CD4+ in rapidly progressive amyotrophic lateral sclerosis

 Hao Zhang

 2025-09-14

 1 min

 31 words

LOW VISION


Summary: CONCLUSIONS: Th1/CD4⁺ (with an optimal cutoff value of 16.21) was established as an independent risk factor for rapid progression in ALS. The machine learning model incorporating Th1/CD4⁺ demonstrated strong predictive performance.


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My Broken Heart

 Ashley C Rider

 2025-05-08

 1 min

 34 words

TACTILE ACUITY


Summary: AUDIENCE: The target audience for the key learning objectives of this Left-Ventricular Assist Device (LVAD) simulation are emergency medicine residents. Other team members such as attendings, nurses, pharmacists, and technicians could potentially be integrated.


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Distributions of orofacial two-point discrimination threshold: A cross-sectional study in healthy population and patients with pain-related temporomandibular disorders

 Xin
Xiong

 17 2025-05-15

 1
min

 70
words

TACTILE ACUITY

Summary: CONCLUSION: Pain-related TMDs patients had weaker orofacial tactile acuity, which was consistent in gender subgroups, except for the temporal region of males. Healthy males had weaker tactile acuity compared to females in TMJ and temporal regions. No significant gender effect on orofacial tactile ac...



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

 Thomas Hummel

 2025-05-28  1 min  70 words


TACTILE ACUITY

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

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

 Hiroyuki Kajimoto

 2025-06-17  1 min  75 words


TACTILE ACUITY


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

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

 Leah R
Bent

 2025-06-27

 1
min

 69
words

TACTILE ACUITY


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


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Directional vibro-tactile hazard warnings for drivers with vision impairments

 Alex R
Bowers

 2025-07-02

 1
min

 80
words

TACTILE ACUITY


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



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

 Cecilia
Guariglia

 2025-08-01  1
min

 64
words

TACTILE ACUITY

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



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

 Eric
Fjeldheim

 2025-08-24  1
min

 22
words

TACTILE ACUITY


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


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

 Paula Anne Newman-Casey

 2025-09-09

 1 min

 74 words


TACTILE ACUITY


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

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

 Sviatoslav N Bagriantsev


 2025-09-13

 1 min

 58 words

TACTILE ACUITY

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

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WAYVision: A hybrid deep learning approach for recognizing handwritten Kannada Braille using wavelet transformation and attention based YOLOv5



Shobha Rani

N



2025-08-25



1

min



64


words

BRAILLE

Summary: Handwritten Braille character recognition presents a significant challenge in the field of assistive technology, especially with the inclusion of various linguistic scripts such as Kannada. The data set is uniquely curated, combining ground-truth data from Kaggle and real-world samples collected fro...

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

 Joseph Paul
Nemargut



2025-08-25



1
min



62
words

BRAILLE


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

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

 Jianming
Xu



2025-08-25



1
min



62
words

BRAILLE

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

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

 Million
Phiri



2025-08-26



1
min



46
words

BRaille

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




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Explosion-powered eversible tactile displays

 Robert F
Shepherd



2025-08-27



1
min



64
words

BRaille

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





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

 Zhijun
Ma

 2025-08-28

 1
min

 57
words

[BRAILLE](#)


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


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

 Min
Zhang

 2025-08-28

 1
min

 64
words

[BRAILLE](#)

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

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



Hao
Lin



2025-09-01



1
min



72
words

BRAILLE

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



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



Ji
Liu



2025-09-02



1
min



56
words

BRAILLE

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



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

Önder
İşlek

17

2025-09-12



1
min



55
words

BRAILLE

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

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Effects of transcranial alternating current stimulation on Spike train correlation in two-compartment model neurons

Guosheng
Yi

17

2025-09-10



1
min



72
words

TDCS TACS TRNS


Summary: Correlated spiking has been widely found in large population of neurons and been linked to neural coding. Transcranial alternating current stimulation (tACS) is a promising non-invasive brain stimulation technique that can modulate the spiking activity of neurons. Despite its growing application, th...

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Personalized High-Definition Transcranial Direct Current Stimulation for the Treatment of Depression: A Randomized Clinical Trial

 Katherine
Narr

 17

2025-09-11



1
min



66
words

TDCS TACS TRNS


Summary: CONCLUSIONS AND RELEVANCE: In this randomized clinical trial of HD-tDCS in participants with moderate to severe depression, the 12-day HD-tDCS therapy was observed to significantly improve mood with a moderate effect size. Similar effect sizes in pharmacotherapy, psychotherapy, and conventional tDCS...

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Effect of theta-transcranial alternating current stimulation on working memory performance among healthy adults: A systematic review and meta-analysis

 Rui-Ke
Zhang

 17

2025-09-11



1
min



27
words

TDCS TACS TRNS

Summary: CONCLUSION: Theta-tACS enhances working memory in healthy adults, with effects modulated by the task type and protocol parameters, offering dual implications for cognitive enhancement and clinical interventions.

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Review of nonpharmacological interventions for delaying the effects of cerebral neuropathy caused by diabetes

Lun-De
Liao



2025-09-12



1
min



67
words

TDCS TACS TRNS

Summary: Diabetic peripheral neuropathy (DPN) is a debilitating complication of diabetes that affects nearly half of diabetic patients and manifests as chronic pain, sensory loss, and motor dysfunction. The limited efficacy of traditional pharmacological treatments, coupled with their side effects, has inten...



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Online HD-tRNS over the right temporoparietal junction modulates social inference but not motor coordination

Guillaume
Dumas



2025-09-12



1
min



68
words

TDCS TACS TRNS

Summary: Social interactions are fundamental to human cognition, with the right temporoparietal junction (rTPJ) playing a key role in integrating motor coordination and social inference. While transcranial random noise stimulation (tRNS) is a promising technique for modulating cortical excitability in real t...




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Neural Correlates of Borderline Personality Disorder (BPD) Based on Electroencephalogram (EEG)-A Mechanistic Review

 Donata Kurpas



2025-09-13



1 min



62 words

TDCS TACS TRNS


Summary: Borderline Personality Disorder (BPD) is marked by emotional dysregulation, instability in self-image and relationships, and high impulsivity. While functional magnetic resonance imaging (fMRI) studies have provided valuable insights into the disorder's neural correlates, electroencephalography (EEG...

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Burnout and the Brain-A Mechanistic Review of Magnetic Resonance Imaging (MRI) Studies

 Donata Kurpas



2025-09-13



1 min



64 words

TDCS TACS TRNS


Summary: Occupational burnout is ubiquitous yet still debated as a disease entity. Previous reviews surveyed multiple biomarkers but left their neural substrate unclear. We therefore asked: What, if any, reproducible magnetic-resonance signature characterises burnout? Following PRISMA principles adapted for ...


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From Immediate Impact to Enduring Change: A Transcriptomic Comparison of tDCS's Temporal Effects and Its Long-Term Equivalence with TMS

 Hanoch Kaphzan


 2025-09-13

 1 min

 63 words

TDCS TACS TRNS

Summary: Transcranial Direct Current Stimulation (tDCS) and Transcranial Magnetic Stimulation (TMS) are neuromodulatory techniques with therapeutic potential for similar disorders; however, their molecular effects require further elucidation, and whether both strategies work in similar biological pathways is...


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General Innovations in Pain Management

 Alaa Abd-Elseyed

 2025-09-13

 1 min

 74 words

TDCS TACS TRNS


Summary: Chronic pain management is constantly evolving, and our literature review aims to describe the general innovations happening within the field. The need for advancements in chronic pain is a necessity, as debilitating back pain and other forms of chronic pain are significant issues in the United States...


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Behavioral outcomes after tDCS treatment during immediate post-intervention and follow-up periods in children and adolescents diagnosed with attention-deficit/hyperactivity disorder: a systematic review and meta-analysis on randomized sham-controlled trials

 Kuo-Chuan
Hung

 2025-09-13

 1
min

 58
words

TDCS TACS TRNS


Summary: This meta-analysis aimed at elucidating the effectiveness of transcranial direct current stimulation (tDCS) in improving behavioral symptoms of attention deficit/hyperactivity disorder (ADHD) in children/adolescents during the immediate post-intervention/follow-up periods and identifying potential c...


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Neural dynamics of constraint relaxation and problem representation changes in single-trial insight problem solving: An fNIRS study

 Rieko
Osu

 2025-09-10

 1
min

 68
words

fNIRS

Summary: Insight problem solving involves overcoming an impasse when a solution seems unreachable, often experienced as an 'Aha!' moment. In such solving, shifting from an incorrect representation imposed by constraints to a correct representation through constraint relaxation is critical. Prior research com...

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Differential Cortical Hemodynamics During Standard and Reversed Visually Guided Navigation: An fNIRS-Based Investigation

 Hee
Cho

 17

2025-09-10

 1


min

 68

words

FNIRS

Summary: Visuospatial perception, which is based on the comprehension of objects and space, requires spatial attention to the surrounding environment. Stimulus-related elements that affect visuospatial tasks include object geometry, familiarity, complexity, and picture plane versus depth rotation. The dorsal...

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Intermittent theta burst stimulation enhances prefrontal activation and connectivity: evidence from fNIRS

 Xia
Bi

 17

2025-09-11

 1

min

 16

words

FNIRS


Summary: OBJECTIVE: To investigate the neuro-regulatory mechanisms of intermittent theta burst stimulation (iTBS) on prefrontal brain function.




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Investigating Hemodynamic Patterns During Beat Processing in Cochlear Implant Users: Insights from a Finger Tapping Study

 Raymond Lee Goldsworthy

 2025-09-11  1 min  46 words

FNIRS


Summary: INTRODUCTION: Individuals with cochlear implants often struggle with melody and timbre perception in music, leading to diminished music appreciation. While they demonstrate proficiency in recognizing beat and rhythm, it remains unclear whether beat information is processed similarly in their brains ...

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Evaluating the effects of multimodal EEG-fNIRS neurofeedback for motor imagery: An experimental platform and study protocol

 Pierre
Maurel

 2025-09-11

 1
min

 61
words

FNIRS

Summary: BACKGROUND: Neurofeedback (NF) enables the self-regulation of brain activity through real-time feedback extracted from brain measures. Recently, the combination of several neuroimaging methods to characterize brain activity has led to growing interest in NF. The integration of various portable recor...


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The Emotional and Cognitive Effects of Synchronizing to Music During Acute Exercise: An fNIRS Study

 William Forde
Thompson

 2025-09-12

 1
min

 61
words

FNIRS

Summary: Synchronizing movements to music enhances exercise performance and enjoyment, yet its short-term effects on attention and cognition remain underexplored. This study examined the influence of synchronous music, asynchronous music, and a no-music control condition on emotional responses, perceived exe...

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Interbrain Synchrony Mitigates Extremism Within Echo Chambers



Simone Shamay-Tsoory



2025-09-12



1 min



65 words

FNIRS

Summary: People tend to engage with content that aligns with their pre-existing attitudes, forming echo chambers that reinforce biases and may amplify extremism. Here, we investigate whether discussions within homogeneous groups drive attitudinal extremity and whether interbrain synchronized activity between...



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An Empirical Study on the Impact of Different Interaction Methods on User Emotional Experience in Cultural Digital Design



Feng Zou



2025-09-13



1 min



64 words

FNIRS

Summary: Traditional culture plays a vital role in shaping national identity and emotional belonging, making it imperative to explore innovative strategies for its digital preservation and engagement. This study investigates how interaction design in cultural digital games influences users' emotional experie...





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TopoTempNet: A High-Accuracy and Interpretable Decoding Method for fNIRS-Based Motor Imagery

 Zhejun Kuang

 2025-09-13

 1 min

 63 words

FNIRS


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Compact Colocated Bimodal EEG/fNIRS Multi-Distance Sensor

 Angélique Rascle

 2025-09-13

 1 min

 70 words

FNIRS

Summary: At present, it is a real challenge to measure brain signals outside of the lab with portable systems that are robust, comfortable and easy to use. We propose in this article a bimodal electroencephalography-functional near-infrared spectroscopy (EEG-fNIRS) sensor whose spatial geometry allows the ro...


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Medial preoptic CCKAR mediates anxiety and aggression induced by chronic emotional stress in male mice

Hong
Lian


 2025-09-11

 1
min

 65
words

BRAIN COMPUTER INTERFACE

Summary: Anxiety disorders frequently accompany aggression, with their co-occurrence predicting greater functional impairment and poor prognosis. Nevertheless, the underlying neural mechanisms remain elusive, primarily due to a lack of appropriate animal models. Here, we designed a chronic conspecific outsid...


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EEGOpt: A performance efficient Bayesian optimization framework for automated EEG signal classification

Monisha
Chakraborty

 2025-09-11

 1
min

 34
words

BRAIN COMPUTER INTERFACE

Summary: CONCLUSION: EEGOpt is a scalable and interpretable framework that automatically identifies optimal signal processing and classification strategies adaptable to EEG datasets, making it a valuable tool for neuroscientific research, diagnostics, and brain-computer interface development.


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Stretchable Multilevel Mesh Brain Electrodes for Neuroplasticity in Glioma Patients Undergoing Surgery

Xue
Feng


2025-09-12

1
min

63
words

BRAIN COMPUTER INTERFACE

Summary: Brain disease surgical treatment usually leads to neurological dysfunction. Electroencephalogram (EEG)-based neuroplasticity study may facilitate patient nerve function recovery from injury, allowing a return to normal activities. Due to the limitations of wound infections and hair barrier effects, ...

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2D Vanadium Carbide/Oxide Heterostructure-Based Artificial Sensory Neuron for Multi-Color Near-Infrared Object Recognition

 Jiahong Wang

 17

2025-09-12



1

min



58

words

BRAIN COMPUTER INTERFACE

Summary: Near-infrared (NIR) photon detection and object recognition are crucial technologies for all-weather target identification in autonomous navigation, nighttime surveillance, and tactical reconnaissance. However, conventional NIR detection systems, which rely on photodetectors and von Neumann computin...



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Sequence action representations contextualize during early skill learning



Leonardo G
Cohen



2025-09-12



1
min



68
words

BRAIN COMPUTER INTERFACE

Summary: Activities of daily living rely on our ability to acquire new motor skills composed of precise action sequences. Here, we asked in humans if the millisecond-level neural representation of an action performed at different contextual sequence locations within a skill differentiates or remains stable d...



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Classification of Different Motor Imagery Tasks with the Same Limb Using Electroencephalographic Signals



Carlos Julio Tierra-
Criollo



2025-09-13



1
min



69
words

BRAIN COMPUTER INTERFACE

Summary: Stroke is a neurological condition that often results in long-term motor deficits. Given the high prevalence of motor impairments worldwide, there is a critical need to explore innovative neurorehabilitation strategies that aim to enhance the quality of life of patients. One promising approach invol...




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TopoTempNet: A High-Accuracy and Interpretable Decoding Method for fNIRS-Based Motor Imagery

 Zhejun
Kuang

 17

2025-09-13



1
min



63
words

BRAIN COMPUTER INTERFACE

Summary: Functional near-infrared spectroscopy (fNIRS) offers a safe and portable signal source for brain-computer interface (BCI) applications, particularly in motor imagery (MI) decoding. However, its low sampling rate and hemodynamic delay pose challenges for temporal modeling and dynamic brain network an...


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A new wide-scope, multi-biomarker wastewater-based epidemiology analytical method to monitor the health and well-being of inhabitants at a metropolitan scale

 Barbara Kasprzyk-Hordern

 2025-09-13  1 min  64 words

BRAIN COMPUTER INTERFACE

Summary: This manuscript establishes a new, comprehensive biomarker list and a multiresidue trace quantification method for community-wide health and well-being assessment at a metropolitan scale using wastewater-based epidemiology (WBE) and mass spectrometry pipelines. This method enables the quantification...

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Thalamocortical dysrhythmia-related sleep spindle desynchronization in patients with tinnitus



Yuanqing
Li



2025-09-13



1
min



68
words

BRAIN COMPUTER INTERFACE

Summary: Patients with tinnitus commonly suffer from sleep problems, and the underlying neural mechanisms remain unclear. Previous studies have focused primarily on the correlation between patients' sleep structure and tinnitus, lacking exploration into the links between sleep problems and the underlying pat...



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Neurodevelopmental deviations in schizophrenia: Evidences from multimodal connectome-based brain ages



Huafu
Chen



2025-09-13



1
min



21
words

BRAIN COMPUTER INTERFACE

Summary: CONCLUSION: These findings from a multimodal brain age perspective suggest that advanced brain age gaps exist early in youths with schizophrenia.






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Why We're Here


 2025-09-11  1 min  352 words

FMHY




Summary:

People always want to know what the point of life is. Why are they on earth? What are we doing here? Whats our purpose? *Whats the point?*

For most of my life, I didn't really have any answer, but as I got older, I realized, things weren't about me. I took a step back, and recognize...

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<https://fmhy.net/posts/WWH>

Analyzing the memory ordering models of the Apple M1


 2025-09-11  1 min  2 words

HACKER NEWS

Summary: [Comments](https://news.ycombinator.com/item?id=45216327)

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<https://www.sciencedirect.com/science/article/pii/S1383762124000390>

Not all browsers perform revocation checking

 2025-09-15  1 min  2 words

HACKER NEWS


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Enhancing Human Navigation Ability Using Force-Feedback From a Lower-Limb Exoskeleton

 2025-01-27  1 min  200 words

TRANSACTIONS HAPTICS



Summary: Humans operating in dynamic environments with limited visibility are susceptible to collisions with moving objects, occupational hazards, and/or other agents, which can result in personal injuries or fatalities. Most existing research has focused on using vibrotactile cues to address this challenge....



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Human-in-the-Loop Optimization of Perceived Realism of Multi-Modal Haptic Rendering Under Conflicting Sensory Cues

 2025-01-30  1 min  234 words

TRANSACTIONS HAPTICS

Summary: During haptic rendering, a visual display and a haptic interface are commonly utilized together to elicit multi-sensory perception of a virtual object, through a combination and integration of force-related and movement-related cues. In this study, we explore visual-haptic cue integration during mul...

 Read full article:

<http://ieeexplore.ieee.org/document/10858441>

The Impact of Stimulation Parameters on Reaction Times Following Transcutaneous Electrical Stimulation in the Lower Leg

 2025-01-06  1 min  197 words


TRANSACTIONS HAPTICS

Summary: The growing need for human-machine interfaces (HMIs) underscores the importance of sensory feedback, with electrical stimulation offering efficient interaction in various applications. While its sensory effects are extensively studied, investigations into the reaction time (RT) following transcutane...


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 2025-06-24  1 min  1 words

TRANSACTIONS HAPTICS

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Front Cover

 2025-06-24  1 min  1 words

TRANSACTIONS HAPTICS

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A Receive-Only Frequency Translation System With Automatic Phase Correction for Simultaneous Multi-Nuclear MRI/MRS

 2025-03-05  1 min  242 words



TRANSACTIONS BIOMEDICAL ENGINEERING

Summary: Objective: Receive-only frequency translation enables MRI scanners with X-nuclear capabilities to perform simultaneous/interleaved multi-nuclear experiments. Mixing only on the receive side avoids modifying the transmit path, which often has narrow-band components. However, phase incoherence is intr...

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Deep Learning-Based Saturation Compensation for High Dynamic Range Multispectral Fluorescence Lifetime Imaging

 2025-03-05  1 min  156 words

TRANSACTIONS BIOMEDICAL ENGINEERING

Summary: In multispectral fluorescence lifetime imaging (FLIm), achieving consistent imaging quality across all spectral channels is crucial for accurately identifying a wide range of fluorophores. However, these essential measurements are frequently compromised by saturation artifacts due to the inherently ...

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mmWave Radar for Sit-to-Stand Analysis: A Comparative Study With Wearables and Kinect

 2025-03-05  1 min  194 words

TRANSACTIONS BIOMEDICAL ENGINEERING


Summary: This study investigates a novel approach for analyzing Sit-to-Stand (STS) movements using millimeter-wave (mmWave) radar technology, aiming to develop a non-contact, privacy-preserving, and all-day operational solution for healthcare applications. A 60 GHz mmWave radar system was employed to collect...

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The interplay between sleep and neural respiratory drive in COPD: contribution of semi-automated analysis of long duration recordings

 1
min

 24
words

NEUROIMAGE


Summary: <p>Publication date: 15 October 2025</p><p>Source: Neurolmage, Volume 320</p><p>Author(s): Léo Grassion, Maxime Patout, Nicolas Wattiez, Stefania Redolfi, Isabelle Arnulf, Thomas Similowski, Thomas Andrillon, Jésus Gonzalez-Bermejo</p>

 Read full article:

https://www.sciencedirect.com/science/article/pii/S1053811925004483?dgcid=rss_sd_all

Imprints of extreme prematurity on functional brain networks in school-aged children and adolescents

 1
min

 26
words


NEUROIMAGE



Summary: <p>Publication date: 15 October 2025</p><p>Source: Neurolmage, Volume 320</p><p>Author(s): Maksym Tokariev, Virve Vuontela, Anton Tokariev, Piia Lönnberg, Sture Andersson, Helena Mäenpää, Marjo Metsäranta, Aulikki Lano, Synnöve Carlson</p>


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Ventral Tegmental Area Dopamine Neural Activity Switches Simultaneously with Rule Representations in the Medial Prefrontal Cortex and Hippocampus

 Ding, M., Tomsick, P. L., Young, R. A., Jadhav, S. P.

 2025-09-10  1 min

 250 words

JOURNAL NEUROSCIENCE CURRENT

Summary: Multiple brain regions need to coordinate activity to support cognitive flexibility and behavioral adaptation. Neural activity in both the hippocampus (HPC) and medial prefrontal cortex (mPFC) is known to represent the spatial context and is sensitive to reward and rule alterations. Midbrain dopa...

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Erratum: Pena et al., "Novel Verbal Instructions Recruit Abstract Neural Patterns of Time-Variable Information Dimensionality"

 2025-09-10  1 min  0 words

JOURNAL NEUROSCIENCE CURRENT


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<http://www.jneurosci.org/cgi/content/short/45/37/e1569252025?rss=1>

ACC Reward Location Information Is Carried by Hippocampal Theta Synchrony and Suppressed in a Type 2 Diabetes Model



Bhasin, G., Flores, E., Crew, L. A., Wirt, R. A., Ortiz, A. A., Kinney, J. W., Hyman, J. M.

 2025-09-10



1
min



255
words

JOURNAL NEUROSCIENCE CURRENT

Summary: <p>The anterior cingulate cortex (ACC) is important for higher-order cognitive functions, emotional responses, and monitoring internal states. ACC dysfunction has been implicated in an array of psychiatric and neurodegenerative disorders which have a bidirectional relationship with the metabolic dis...




Read full article:

<http://www.jneurosci.org/cgi/content/short/45/37/e1546242025?rss=1>


High Beta Power in the Ventrolateral Prefrontal Cortex Indexes Human Approach Behavior: A Case Study

Provenza, N. R., Rajesh, S. V., Reyes, G., Katlowitz, K. A., Pugalenth, L. S., Bechtold, R. A., Diab, N., Reddy, S., Allam, A. K., Gandhi, A. D., Kabotyanski, K. E., Mansourian, K. A., Bentley, J. H., Altman, J. R., Hinduja, S., Giridharan, N., Banks, G. P., Hasen, M., Shofty, B., Heilbronner, S. R., Cohn, J. F., Borton, D. A., Storch, E. A., Herron, J. A., Hayden, B. Y., Phillips, M. L., Goodman, W. K., Sheth, S. A.

 2025-09-10  1 min  233 words

JOURNAL NEUROSCIENCE CURRENT

Summary: <p>Deep brain stimulation (DBS) of the ventral capsule and ventral striatum (VC/VS) is an effective therapy for treatment-resistant obsessive–compulsive disorder (trOCD). DBS initiation often produces acute improvements in mood and energy. These acute behavioral changes, which we refer to as "...

 Read full article:

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Orbitofrontal-Hippocampal State Coding Dynamics during Reversal Learning

 Sanchez, A. N., Ford, C. F., Balewski, Z. Z., Wallis, J. D.

 2025-09-10  1 min  173 words


JOURNAL NEUROSCIENCE CURRENT

Summary: <p>To build an understanding of our world, we make inferences about the connections between our actions, experiences, and the environment. This process, state inference, requires an agent to guess the current state of the world given a set of observations. During value-based decision-making, a growi...

 Read full article:


<http://www.jneurosci.org/cgi/content/short/45/37/e1228242025?rss=1>

Computational Properties of the Prefrontal Cortex

 Narayanan, N. S., Hyman, J. M., Seamans, J., Rich, E. L.

 2025-09-10

 1 min

 0 words


JOURNAL NEUROSCIENCE CURRENT

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Spatiotemporal Patterns in Cortical Development: Age, Puberty, and Individual Variability from 9 to 13 Years of Age

 Bottenhorn, K. L., Corbett, J. D., Ahmadi, H., Herting, M. M.

 2025-09-10

 1 min

 236 words

JOURNAL NEUROSCIENCE CURRENT

Summary: <p>Human and nonhuman primate studies suggest that timing and tempo of cortical development varies neuroanatomically along a sensorimotor-to-association (S–A) axis. Prior human studies have reported a principal S–A axis across various modalities but largely rely on cross-sectional sample...

 Read full article:

<http://www.jneurosci.org/cgi/content/short/45/37/e1002242025?rss=1>

Organization of Brainwide Inputs to Discrete Lateral Septum Projection Populations



Isaac, J., Karkare, S. C., Balasubramanian, H., Murugan, M.



2025-09-10



1 min



249 words

JOURNAL NEUROSCIENCE CURRENT

Summary: <p>The lateral septum (LS) is anatomically positioned to play a critical role in directing information from the hippocampus and cortex to downstream subcortical structures, such as the hypothalamus. Early anatomical tracing studies investigated the organization of hippocampal inputs to the LS and it...



Read full article:

<http://www.jneurosci.org/cgi/content/short/45/37/e0797252025?rss=1>

Prediction Error-Related Memory Enhancement Depends on the Neural State Surrounding the Prediction Error Event



Loock, K., Heinbockel, H., Kalbe, F., Schwabe, L.



2025-09-10



1 min



246 words

JOURNAL NEUROSCIENCE CURRENT


Summary: <p>Prediction errors (PEs) can enhance memory for preceding events. While such PE-related memory enhancements are critical for understanding adaptive memory, their underlying mechanisms are not fully understood. Using electroencephalography (EEG) and neuro-navigated transcranial magnetic stimulation...




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Retinoid-X-Receptor as a Mediator of Poststroke Recovery by Reversing Age-Associated Phenotypes of Microglia/Hematogenous Macrophages


 Ting, S.-M., Zhao, X., Sun, G., Ricote, M., Aronowski, J.

 2025-09-10  1 min

 217 words

JOURNAL NEUROSCIENCE CURRENT



Summary: <p>After stroke, microglia and hematogenous macrophages, together referred to as M, clear dead cells and cellular debris in the infarcted brain through phagocytosis as an essential part of the recovery process. However, the phagocytic capability of M declines with age. Furthermore, aged M become ove...


 Read full article:

<http://www.jneurosci.org/cgi/content/short/45/37/e0248252025?rss=1>

Neural signatures of prioritization and facilitation in retrieving repeated items in visual working memory

 Dipanjan Roy

 2025-09-10  1 min

 283 words


FRONTIERS HUMAN NEUROSCIENCE


Summary: Visual working memory (VWM) is a limited-capacity system where working memory items compete for retrieval. Some items are maintained in the working memory in the "region of direct access," which holds information readily available for processing, while other items are in a passive or activated long-...

 Read full article:


<https://www.frontiersin.org/articles/10.3389/fnhum.2025.1642615>

Correction: Determining the depth of meditation through frontal alpha asymmetry

 N. K.
Manjunath

 2025-09-12

 1
min

 0
words


FRONTIERS HUMAN NEUROSCIENCE

 Read full article:


<https://www.frontiersin.org/articles/10.3389/fnhum.2025.1695594>

Dynamic graph neural networks for UAV-based group activity recognition in structured team sports

 Hui
Liu


 2025-09-08

 1
min

 278
words

FRONTIERS NEUROBOTICS


Summary: Introduction Understanding group actions in real-world settings is essential for the advancement of applications in surveillance, robotics, and autonomous systems. Group activity recognition, particularly in sports scenarios, presents unique challenges due to dynamic interactions, occlusions, and var...

 Read full article:


<https://www.frontiersin.org/articles/10.3389/fnbot.2025.1631998>

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

 Yixin
Wang

 2025-09-10

 1
min

 189
words


FRONTIERS NEUROBOTICS


Summary: Although deep learning methods have made significant strides in single image sand dust removal, the heterogeneous uncertainty induced by dusty environments poses a considerable challenge. In response, our research presents a novel framework known as the Hierarchical Interactive Uncertainty-aware Net...

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

Psychosocial factors associated with speech perception in older adult cochlear implant users: a scoping review

 Jane
Opie


 2025-09-10

 1
min

 236
words

FRONTIERS NEUROSCIENCE

Summary: BackgroundThe population of older adults (OAs) is significantly increasing, and with that is the reality of OAs having hearing loss (HL). Although there is no hearing screening for adults, some OAs do consult their audiologist or otologist and receive a cochlear implant (CI). There are several studi...

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<https://www.frontiersin.org/articles/10.3389/fnins.2025.1636354>

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



Maria Carla
Piastra



2024-06-14



1
min



64
words

OOSTENVELD ROBERT

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



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



Julius
Welzel



2024-07-02



1
min



72
words

OOSTENVELD ROBERT

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






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One hundred years of EEG for brain and behaviour research

 Pedro Valdes-Sosa

 2024-08-22  1 min

 2 words


OOSTENVELD ROBERT



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

 Richard J A van Wezel

 2024-09-04  1 min

 65 words

OOSTENVELD ROBERT

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


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

 Krzysztof J
Gorgolewski

 2024-09-23

 1
min

 82
words

OOSTENVELD ROBERT


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


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

 Fanny
Quandt

 2025-01-09

 1
min

 65
words

OOSTENVELD ROBERT


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

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

 Luca
Pollonini

 17

2025-01-27



1
min



70
words

OOSTENVELD ROBERT


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

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

 Lyuba
Zehl

 17

2025-06-26



1
min



67
words

OOSTENVELD ROBERT


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


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

 Tim M
Tierney

 17 2025-08-13

 1
min

 74
words

OOSTENVELD ROBERT


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


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Optimal configuration of on-scalp OPMs with fixed channel counts

 Robert
Oostenveld

 17 2025-08-13

 1
min

 69
words

OOSTENVELD ROBERT


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

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A Stereo Synchronization Method for Consumer-Grade Video Cameras to Measure Multi-Target 3D Displacement Using Image Processing in Shake Table Experiments

 Yuan-Sen
Yang



2025-09-13



1

min



63

words

LOW VISION

Summary: The use of consumer-grade cameras for stereo vision provides a cost-effective, non-contact method for measuring three-dimensional displacement in civil engineering experiments. However, obtaining accurate 3D coordinates requires accurate temporal alignment of several unsynchronized cameras, which is...



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Real-Time Driver Attention Detection in Complex Driving Environments via Binocular Depth Compensation and Multi-Source Temporal Bidirectional Long Short-Term Memory Network



Huajie
Liu



2025-09-13



1
min



62
words

LOW VISION

Summary: Driver distraction is a key factor contributing to traffic accidents. However, in existing computer vision-based methods for driver attention state recognition, monocular camera-based approaches often suffer from low accuracy, while multi-sensor data fusion techniques are compromised by poor real-ti...



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Tracking-Based Denoising: A Trilateral Filter-Based Denoiser for Real-World Surveillance Video in Extreme Low-Light Conditions



Chen

Lv



17

2025-09-13



1

min



75

words

LOW VISION

Summary: Video denoising in extremely low-light surveillance scenarios is a challenging task in computer vision, as it suffers from harsh noise and insufficient signal to reconstruct fine details. The denoising algorithm for these scenarios encounters challenges such as the lack of ground truth, and the nois...

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A Unified Preprocessing Pipeline for Noise-Resilient Crack Segmentation in Leaky Infrastructure Surfaces



Jeongho

Cho



17

2025-09-13



1

min



67


words


LOW VISION

Summary: Wet cracks caused by leakage often exhibit visual and structural distortions due to surface contamination, salt crystallization, and corrosion byproducts. These factors significantly degrade the performance of sensor- and vision-based crack detection systems. In moist environments, the initiation an...


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U-ResNet, a Novel Network Fusion Method for Image Classification and Segmentation

 Yaqing
Song

 2025-09-13

 1
min

 65
words

LOW VISION


Summary: Image classification and segmentation are important tasks in computer vision. ResNet and U-Net are representative networks for image classification and image segmentation, respectively. Although many scholars used to fuse these two networks, most integration focuses on image segmentation with U-Net,...


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Serum Vitamin D Levels as Predictors of Response to Intravitreal Anti-VEGF Therapy in Diabetic Macular Edema: A Clinical Correlation Study

 Ana Maria
Stoica

 2025-09-13

 1
min

 66
words

LOW VISION


Summary: Our study explored the role of serum 25-hydroxyvitamin D [25(OH)D] levels as an indicator of response to intravitreal anti-vascular endothelial growth factor (anti-VEGF) therapy in patients with diabetic macular edema (DME), highlighting functional and anatomical outcomes linked to systemic biomarkers...

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Visual Outcomes of a Non-Diffractive Extended Depth-of-Focus Intraocular Lens in Patients with Early-Stage Age-Related Macular Degeneration

 Celia Sánchez-Ramos



2025-09-13



1
min



66
words

LOW VISION

Summary: Background/Objectives: Age-related macular degeneration (AMD) is a leading cause of visual impairment in older adults and often coexists with cataracts. The indication of presbyopia-correcting intraocular lenses (IOLs) in these patients remains controversial. This study aimed to evaluate the clinica...




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Use of Mechanical Enhanced Colonoscopy to Improve Polyp Detection During Colorectal Cancer Screening: A Real-World Healthcare Database Analysis

 Seth A
Gross

 2025-09-13

 1
min

 71
words

LOW VISION


Summary: Introduction: High performance colonoscopy requires the monitoring of an individual's adenoma detection rate (ADR). The Endocuff (EndoCuff Vision, Olympus America Inc., Center Valley, PA, USA) is an endoscopic distal attachment device that increases surface area exposure during colonoscopy. While st...

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Metabolic alterations in diabetic patients: aqueous humor profiling for biomarker discovery

 Guna
Laganovska

 2025-09-13

 1
min

 64
words

LOW VISION


Summary: Diabetic retinopathy, a leading cause of vision loss in working-age populations, is a severe complication of diabetes mellitus. Metabolomics, a key approach in systems biology, offers insights into the complex pathophysiology of diabetes by analyzing low-molecular-weight compounds in biological cont...


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Evaluating the predictive potential of Th1 (IFN- γ +/CD4+/CD4+/CD4+ in rapidly progressive amyotrophic lateral sclerosis

 Hao Zhang

 2025-09-14

 1 min

 31 words

LOW VISION


Summary: CONCLUSIONS: Th1/CD4⁽⁺⁾ (with an optimal cutoff value of 16.21) was established as an independent risk factor for rapid progression in ALS. The machine learning model incorporating Th1/CD4⁽⁺⁾ demonstrated strong predictive performance.


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My Broken Heart

 Ashley C Rider

 2025-05-08

 1 min

 34 words

TACTILE ACUITY


Summary: AUDIENCE: The target audience for the key learning objectives of this Left-Ventricular Assist Device (LVAD) simulation are emergency medicine residents. Other team members such as attendings, nurses, pharmacists, and technicians could potentially be integrated.


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Distributions of orofacial two-point discrimination threshold: A cross-sectional study in healthy population and patients with pain-related temporomandibular disorders

 Xin
Xiong

 2025-05-15

 1
min

 70
words

TACTILE ACUITY


Summary: CONCLUSION: Pain-related TMDs patients had weaker orofacial tactile acuity, which was consistent in gender subgroups, except for the temporal region of males. Healthy males had weaker tactile acuity compared to females in TMJ and temporal regions. No significant gender effect on orofacial tactile ac...




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

 Thomas Hummel

 2025-05-28  1 min  70 words


TACTILE ACUITY

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

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

 Hiroyuki Kajimoto

 2025-06-17  1 min  75 words

TACTILE ACUITY


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

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

 Leah R
Bent

 2025-06-27

 1
min

 69
words

TACTILE ACUITY


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


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Directional vibro-tactile hazard warnings for drivers with vision impairments

 Alex R
Bowers

 2025-07-02

 1
min

 80
words

TACTILE ACUITY


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


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

 Cecilia
Guariglia

 2025-08-01  1
min

 64
words

TACTILE ACUITY

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



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

 Eric
Fjeldheim

 2025-08-24  1
min

 22
words

TACTILE ACUITY


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


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

 Paula Anne Newman-Casey

 2025-09-09

 1 min

 74 words


TACTILE ACUITY


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

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

 Sviatoslav N Bagriantsev

 2025-09-13

 1 min

 58 words

TACTILE ACUITY

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

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WAYVision: A hybrid deep learning approach for recognizing handwritten Kannada Braille using wavelet transformation and attention based YOLOv5



Shobha Rani

N



2025-08-25



1

min



64


words

BRAILLE

Summary: Handwritten Braille character recognition presents a significant challenge in the field of assistive technology, especially with the inclusion of various linguistic scripts such as Kannada. The data set is uniquely curated, combining ground-truth data from Kaggle and real-world samples collected fro...

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

 Joseph Paul
Nemargut



2025-08-25



1

min



62

words

BRaille

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




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

 Jianming
Xu



2025-08-25



1

min



62

words

BRaille

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



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

 Million
Phiri



2025-08-26



1
min



46
words

BRAILLE

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




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Explosion-powered eversible tactile displays

 Robert F
Shepherd



2025-08-27



1
min



64
words

BRAILLE

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





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

 Zhijun
Ma

 2025-08-28

 1
min

 57
words

[BRAILLE](#)


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


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

 Min
Zhang

 2025-08-28

 1
min

 64
words

[BRAILLE](#)

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

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



Hao
Lin



2025-09-01



1
min



72
words

BRAILLE

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



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



Ji
Liu



2025-09-02



1
min



56
words

BRAILLE

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



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

Önder
İşlek

17

2025-09-12



1
min



55
words

BRAILLE

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

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Effects of transcranial alternating current stimulation on Spike train correlation in two-compartment model neurons

Guosheng
Yi

17

2025-09-10



1
min



72
words

TDCS TACS TRNS


Summary: Correlated spiking has been widely found in large population of neurons and been linked to neural coding. Transcranial alternating current stimulation (tACS) is a promising non-invasive brain stimulation technique that can modulate the spiking activity of neurons. Despite its growing application, th...


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Personalized High-Definition Transcranial Direct Current Stimulation for the Treatment of Depression: A Randomized Clinical Trial

 Katherine
Narr

 2025-09-11

 1
min

 66
words

TDCS TACS TRNS


Summary: CONCLUSIONS AND RELEVANCE: In this randomized clinical trial of HD-tDCS in participants with moderate to severe depression, the 12-day HD-tDCS therapy was observed to significantly improve mood with a moderate effect size. Similar effect sizes in pharmacotherapy, psychotherapy, and conventional tDCS...


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Effect of theta-transcranial alternating current stimulation on working memory performance among healthy adults: A systematic review and meta-analysis

 Rui-Ke
Zhang

 2025-09-11

 1
min

 27
words

TDCS TACS TRNS

Summary: CONCLUSION: Theta-tACS enhances working memory in healthy adults, with effects modulated by the task type and protocol parameters, offering dual implications for cognitive enhancement and clinical interventions.


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Review of nonpharmacological interventions for delaying the effects of cerebral neuropathy caused by diabetes

 Lun-De
Liao

 2025-09-12

 1
min

 67
words

TDCS TACS TRNS

Summary: Diabetic peripheral neuropathy (DPN) is a debilitating complication of diabetes that affects nearly half of diabetic patients and manifests as chronic pain, sensory loss, and motor dysfunction. The limited efficacy of traditional pharmacological treatments, coupled with their side effects, has inten...


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Online HD-tRNS over the right temporoparietal junction modulates social inference but not motor coordination

 Guillaume
Dumas

 2025-09-12

 1
min

 68
words

TDCS TACS TRNS


Summary: Social interactions are fundamental to human cognition, with the right temporoparietal junction (rTPJ) playing a key role in integrating motor coordination and social inference. While transcranial random noise stimulation (tRNS) is a promising technique for modulating cortical excitability in real t...

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Neural Correlates of Borderline Personality Disorder (BPD) Based on Electroencephalogram (EEG)-A Mechanistic Review

 Donata Kurpas



2025-09-13



1 min



62 words

TDCS TACS TRNS


Summary: Borderline Personality Disorder (BPD) is marked by emotional dysregulation, instability in self-image and relationships, and high impulsivity. While functional magnetic resonance imaging (fMRI) studies have provided valuable insights into the disorder's neural correlates, electroencephalography (EEG...

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Burnout and the Brain-A Mechanistic Review of Magnetic Resonance Imaging (MRI) Studies

 Donata Kurpas



2025-09-13



1 min



64 words

TDCS TACS TRNS


Summary: Occupational burnout is ubiquitous yet still debated as a disease entity. Previous reviews surveyed multiple biomarkers but left their neural substrate unclear. We therefore asked: What, if any, reproducible magnetic-resonance signature characterises burnout? Following PRISMA principles adapted for ...

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From Immediate Impact to Enduring Change: A Transcriptomic Comparison of tDCS's Temporal Effects and Its Long-Term Equivalence with TMS

 Hanoch
Kaphzan



2025-09-13



1
min



63
words

TDCS TACS TRNS

Summary: Transcranial Direct Current Stimulation (tDCS) and Transcranial Magnetic Stimulation (TMS) are neuromodulatory techniques with therapeutic potential for similar disorders; however, their molecular effects require further elucidation, and whether both strategies work in similar biological pathways is...



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General Innovations in Pain Management

 Alaa Abd-
Elsayed



2025-09-13



1
min



74
words

TDCS TACS TRNS

Summary: Chronic pain management is constantly evolving, and our literature review aims to describe the general innovations happening within the field. The need for advancements in chronic pain is a necessity, as debilitating back pain and other forms of chronic pain are significant issues in the United States...





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Behavioral outcomes after tDCS treatment during immediate post-intervention and follow-up periods in children and adolescents diagnosed with attention-deficit/hyperactivity disorder: a systematic review and meta-analysis on randomized sham-controlled trials

 Kuo-Chuan
Hung

 2025-09-13

 1
min

 58
words

TDCS TACS TRNS

Summary: This meta-analysis aimed at elucidating the effectiveness of transcranial direct current stimulation (tDCS) in improving behavioral symptoms of attention deficit/hyperactivity disorder (ADHD) in children/adolescents during the immediate post-intervention/follow-up periods and identifying potential c...

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Neural dynamics of constraint relaxation and problem representation changes in single-trial insight problem solving: An fNIRS study

 Rieko
Osu



2025-09-10



1
min



68
words

FNIRS

Summary: Insight problem solving involves overcoming an impasse when a solution seems unreachable, often experienced as an 'Aha!' moment. In such solving, shifting from an incorrect representation imposed by constraints to a correct representation through constraint relaxation is critical. Prior research com...



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Differential Cortical Hemodynamics During Standard and Reversed Visually Guided Navigation: An fNIRS-Based Investigation

 Hee
Cho

 17

2025-09-10

 1


min

 68

words

FNIRS

Summary: Visuospatial perception, which is based on the comprehension of objects and space, requires spatial attention to the surrounding environment. Stimulus-related elements that affect visuospatial tasks include object geometry, familiarity, complexity, and picture plane versus depth rotation. The dorsal...

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Intermittent theta burst stimulation enhances prefrontal activation and connectivity: evidence from fNIRS

 Xia
Bi

 17

2025-09-11

 1

min

 16

words

FNIRS


Summary: OBJECTIVE: To investigate the neuro-regulatory mechanisms of intermittent theta burst stimulation (iTBS) on prefrontal brain function.


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Investigating Hemodynamic Patterns During Beat Processing in Cochlear Implant Users: Insights from a Finger Tapping Study

 Raymond Lee
Goldsworthy

 2025-09-11

 1
min

 46
words

FNIRS

Summary: INTRODUCTION: Individuals with cochlear implants often struggle with melody and timbre perception in music, leading to diminished music appreciation. While they demonstrate proficiency in recognizing beat and rhythm, it remains unclear whether beat information is processed similarly in their brains ...


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Evaluating the effects of multimodal EEG-fNIRS neurofeedback for motor imagery: An experimental platform and study protocol

 Pierre
Maurel

 17 2025-09-11

 1
min

 61
words

FNIRS

Summary: BACKGROUND: Neurofeedback (NF) enables the self-regulation of brain activity through real-time feedback extracted from brain measures. Recently, the combination of several neuroimaging methods to characterize brain activity has led to growing interest in NF. The integration of various portable recor...


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The Emotional and Cognitive Effects of Synchronizing to Music During Acute Exercise: An fNIRS Study

 William Forde
Thompson

 17 2025-09-12

 1
min

 61
words

FNIRS

Summary: Synchronizing movements to music enhances exercise performance and enjoyment, yet its short-term effects on attention and cognition remain underexplored. This study examined the influence of synchronous music, asynchronous music, and a no-music control condition on emotional responses, perceived exe...

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Interbrain Synchrony Mitigates Extremism Within Echo Chambers



Simone Shamay-Tsoory



2025-09-12



1 min



65 words

FNIRS

Summary: People tend to engage with content that aligns with their pre-existing attitudes, forming echo chambers that reinforce biases and may amplify extremism. Here, we investigate whether discussions within homogeneous groups drive attitudinal extremity and whether interbrain synchronized activity between...



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An Empirical Study on the Impact of Different Interaction Methods on User Emotional Experience in Cultural Digital Design



Feng Zou



2025-09-13



1 min



64 words

FNIRS

Summary: Traditional culture plays a vital role in shaping national identity and emotional belonging, making it imperative to explore innovative strategies for its digital preservation and engagement. This study investigates how interaction design in cultural digital games influences users' emotional experie...





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TopoTempNet: A High-Accuracy and Interpretable Decoding Method for fNIRS-Based Motor Imagery

 Zhejun
Kuang

 2025-09-13

 1
min

 63
words

FNIRS


Summary: Functional near-infrared spectroscopy (fNIRS) offers a safe and portable signal source for brain-computer interface (BCI) applications, particularly in motor imagery (MI) decoding. However, its low sampling rate and hemodynamic delay pose challenges for temporal modeling and dynamic brain network an...


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Compact Colocated Bimodal EEG/fNIRS Multi-Distance Sensor

 Angélique
Rasclé

 2025-09-13

 1
min

 70
words

FNIRS

Summary: At present, it is a real challenge to measure brain signals outside of the lab with portable systems that are robust, comfortable and easy to use. We propose in this article a bimodal electroencephalography-functional near-infrared spectroscopy (EEG-fNIRS) sensor whose spatial geometry allows the ro...


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Medial preoptic CCKAR mediates anxiety and aggression induced by chronic emotional stress in male mice

Hong
Lian

 2025-09-11

 1
min

 65
words

BRAIN COMPUTER INTERFACE

Summary: Anxiety disorders frequently accompany aggression, with their co-occurrence predicting greater functional impairment and poor prognosis. Nevertheless, the underlying neural mechanisms remain elusive, primarily due to a lack of appropriate animal models. Here, we designed a chronic conspecific outsid...


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EEGOpt: A performance efficient Bayesian optimization framework for automated EEG signal classification

Monisha
Chakraborty

 2025-09-11

 1
min

 34
words

BRAIN COMPUTER INTERFACE

Summary: CONCLUSION: EEGOpt is a scalable and interpretable framework that automatically identifies optimal signal processing and classification strategies adaptable to EEG datasets, making it a valuable tool for neuroscientific research, diagnostics, and brain-computer interface development.


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Stretchable Multilevel Mesh Brain Electrodes for Neuroplasticity in Glioma Patients Undergoing Surgery

Xue
Feng

2025-09-12

1
min

63
words

BRAIN COMPUTER INTERFACE

Summary: Brain disease surgical treatment usually leads to neurological dysfunction. Electroencephalogram (EEG)-based neuroplasticity study may facilitate patient nerve function recovery from injury, allowing a return to normal activities. Due to the limitations of wound infections and hair barrier effects, ...

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2D Vanadium Carbide/Oxide Heterostructure-Based Artificial Sensory Neuron for Multi-Color Near-Infrared Object Recognition

 Jiahong Wang

 17

2025-09-12



1

min



58

words

BRAIN COMPUTER INTERFACE

Summary: Near-infrared (NIR) photon detection and object recognition are crucial technologies for all-weather target identification in autonomous navigation, nighttime surveillance, and tactical reconnaissance. However, conventional NIR detection systems, which rely on photodetectors and von Neumann computin...



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Sequence action representations contextualize during early skill learning



Leonardo G
Cohen



2025-09-12



1
min



68
words

BRAIN COMPUTER INTERFACE

Summary: Activities of daily living rely on our ability to acquire new motor skills composed of precise action sequences. Here, we asked in humans if the millisecond-level neural representation of an action performed at different contextual sequence locations within a skill differentiates or remains stable d...



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Classification of Different Motor Imagery Tasks with the Same Limb Using Electroencephalographic Signals



Carlos Julio Tierra-
Criollo



2025-09-13



1
min



69
words

BRAIN COMPUTER INTERFACE

Summary: Stroke is a neurological condition that often results in long-term motor deficits. Given the high prevalence of motor impairments worldwide, there is a critical need to explore innovative neurorehabilitation strategies that aim to enhance the quality of life of patients. One promising approach invol...




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TopoTempNet: A High-Accuracy and Interpretable Decoding Method for fNIRS-Based Motor Imagery

 Zhejun
Kuang

 17

2025-09-13



1
min



63
words

BRAIN COMPUTER INTERFACE

Summary: Functional near-infrared spectroscopy (fNIRS) offers a safe and portable signal source for brain-computer interface (BCI) applications, particularly in motor imagery (MI) decoding. However, its low sampling rate and hemodynamic delay pose challenges for temporal modeling and dynamic brain network an...


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A new wide-scope, multi-biomarker wastewater-based epidemiology analytical method to monitor the health and well-being of inhabitants at a metropolitan scale

 Barbara Kasprzyk-Hordern

 2025-09-13

 1 min

 64 words

BRAIN COMPUTER INTERFACE

Summary: This manuscript establishes a new, comprehensive biomarker list and a multiresidue trace quantification method for community-wide health and well-being assessment at a metropolitan scale using wastewater-based epidemiology (WBE) and mass spectrometry pipelines. This method enables the quantification...

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Thalamocortical dysrhythmia-related sleep spindle desynchronization in patients with tinnitus



Yuanqing
Li



2025-09-13



1
min



68
words

BRAIN COMPUTER INTERFACE

Summary: Patients with tinnitus commonly suffer from sleep problems, and the underlying neural mechanisms remain unclear. Previous studies have focused primarily on the correlation between patients' sleep structure and tinnitus, lacking exploration into the links between sleep problems and the underlying pat...



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[tbw4049Wgf_RdKXdtNCvGW0IVBZFpHe7zaN4k4DwoD5&fc=None&ff=20250914230735&v=2.18.0.post9+e462414](https://pubmed.ncbi.nlm.nih.gov/40945543/?utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1rSUu--tbw4049Wgf_RdKXdtNCvGW0IVBZFpHe7zaN4k4DwoD5&fc=None&ff=20250914230735&v=2.18.0.post9+e462414)

Neurodevelopmental deviations in schizophrenia: Evidences from multimodal connectome-based brain ages



Huafu
Chen



2025-09-13



1
min



21
words

BRAIN COMPUTER INTERFACE

Summary: CONCLUSION: These findings from a multimodal brain age perspective suggest that advanced brain age gaps exist early in youths with schizophrenia.






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[tbw4049Wgf_RdKXdtNCvGW0IVBZFpHe7zaN4k4DwoD5&fc=None&ff=20250914230735&v=2.18.0.post9+e462414](https://pubmed.ncbi.nlm.nih.gov/40945816/?utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1rSUu--tbw4049Wgf_RdKXdtNCvGW0IVBZFpHe7zaN4k4DwoD5&fc=None&ff=20250914230735&v=2.18.0.post9+e462414)

Which colours dominate movie posters and why?

 2025-09-12  1 min  2 words

HACKER NEWS




Summary: [Comments](https://news.ycombinator.com/item?id=45225903)



Read full article:

<https://stephenfollows.com/p/which-colours-dominate-movie-posters-and-why>

Show HN: Dagger.js – A buildless, runtime-only JavaScript micro-framework

 2025-09-15  1 min  2 words

HACKER NEWS

Summary: [Comments](https://news.ycombinator.com/item?id=45245138)



Read full article:

<https://daggerjs.org>

AMD Turin PSP binaries analysis from open-source firmware perspective



pietrushnic



2025-09-14



1

min



13

words

HACKER NEWS

Summary:

Article URL: <https://blog.3mdeb.com/2025/2025-09-11-gigabyte-mz33-ar1-blob-analysis/>

Comments URL: <https://news.ycombinator.com/item?id=45243439>



Read full article:

<https://blog.3mdeb.com/2025/2025-09-11-gigabyte-mz33-ar1-blob-analysis/>

Show HN: Dagger.js – A buildless, runtime-only JavaScript micro-framework



TonyPeakman



2025-09-15



1

min



40

words

HACKER NEWS

Summary: TL;DR: dagger.js is a buildless, runtime-only micro-framework that plays nicely with native Web Components. It uses HTML-first directives (e.g. +click, +load) so you can ship a page by dropping a single



<https://github.com/dagger8224/dagger.js>



Read full article:

<https://daggerjs.org>

Camera Seismocardiogram Based Monitoring of Left Ventricular Ejection Time

 2025-03-18  1 min  216 words


TRANSACTIONS BIOMEDICAL ENGINEERING

Summary: Left Ventricular Ejection Time (LVET), reflecting the duration from the onset to the end of blood ejection by the left ventricle during each heartbeat, is a critical parameter for measuring cardiac pumping efficiency. Continuous and regular monitoring of LVET is particularly crucial in assessing car...

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Biophysical Modeling of Capacitive Electro-Quasistatic Human Body Powering

 2025-03-04  1 min  245 words


TRANSACTIONS BIOMEDICAL ENGINEERING

Summary: The increasing demand for wearables necessitates efficient energy harvesting and wireless power transfer solutions. Capacitive Electro-Quasistatic Human Body Powering (EQS-HBP) is a promising technology for wirelessly powering on-body devices, offering enhanced received power (P_{rx}) with full-bo...

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<http://ieeexplore.ieee.org/document/10909585>

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 2025-08-21  1 min  1 words




TRANSACTIONS BIOMEDICAL ENGINEERING



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<http://ieeexplore.ieee.org/document/11133578>

IEEE Transactions on Biomedical Engineering Handling Editors Information

 2025-08-21  1 min  1 words



TRANSACTIONS BIOMEDICAL ENGINEERING



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IEEE Transactions on Biomedical Engineering Information for Authors

 2025-08-21  1 min  1 words


TRANSACTIONS BIOMEDICAL ENGINEERING



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 2025-08-21  1 min  1 words

TRANSACTIONS BIOMEDICAL ENGINEERING

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A Survey of Few-Shot Learning for Biomedical Time Series

 2024-11-06  1 min  176 words




REVIEWS BIOMEDICAL ENGINEERING

Summary: Advancements in wearable sensor technologies and the digitization of medical records have contributed to the unprecedented ubiquity of biomedical time series data. Data-driven models have tremendous potential to assist clinical diagnosis and improve patient care by improving long-term monitoring cap...

 Read full article:


<http://ieeexplore.ieee.org/document/10745649>

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

 2024-11-12  1 min  214 words

REVIEWS BIOMEDICAL ENGINEERING

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

 Read full article:

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

 2024-10-22  1 min  151 words




REVIEWS BIOMEDICAL ENGINEERING

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

 Read full article:

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

Artificial General Intelligence for Medical Imaging Analysis

 2024-11-07  1 min  159 words

REVIEWS BIOMEDICAL ENGINEERING

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

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Exhaled Breath Analysis: From Laboratory Test to Wearable Sensing

 2024-10-16  1 min  182 words




REVIEWS BIOMEDICAL ENGINEERING

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

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

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

 2024-11-29  1 min  200 words

REVIEWS BIOMEDICAL ENGINEERING

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


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

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

 2025-01-28  1 min  1 words

REVIEWS BIOMEDICAL ENGINEERING

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IEEE Engineering in Medicine and Biology Society

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REVIEWS BIOMEDICAL ENGINEERING

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

 2025-09-08  1 min  220 words

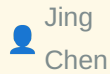
COGNITIVE NEUROSCIENCE

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

 Read full article:

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

Diminished reactivity effect of confidence rating on perceptual decision-making in depression



Jing

Chen



2025-09-10

1
min164
words

FRONTIERS NEUROSCIENCE

Summary: IntroductionRetrospective confidence ratings (CRs) after decision-making reactively lead to prolonged response times (RTs) and improved decision accuracy, a phenomenon known as the reactivity effect. This effect reflects an individual's metacognitive control processes. Little is known if depressive ...



Read full article:

<https://www.frontiersin.org/articles/10.3389/fnins.2025.1638734>

The speech reception threshold can be estimated using EEG electrodes in and around the ear



Heidi B Borges, Johannes Zaar, Emina Alickovic, Christian B Christensen and Preben

Kidmose



2025-09-09

1
min276
words

JOURNAL NEURAL ENGINEERING

Summary: Objective. Previous studies have demonstrated that the speech reception threshold (SRT) can be estimated using scalp electroencephalography (EEG), referred to as SRTneuro. The present study assesses the feasibility of using ear-EEG, which allows for discreet measurement of neural activity from in an...



Read full article:

<http://iopscience.iop.org/article/10.1088/1741-2552/ae00f3>

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



Maria Carla
Piastra



2024-06-14



1
min



64
words

OOSTENVELD ROBERT

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



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



Julius
Welzel



2024-07-02



1
min



72
words

OOSTENVELD ROBERT

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






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One hundred years of EEG for brain and behaviour research

 Pedro Valdes-Sosa

 2024-08-22  1 min

 2 words

OOSTENVELD ROBERT



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


 Richard J A van Wezel

 2024-09-04  1 min

 65 words

OOSTENVELD ROBERT

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


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

 Krzysztof J
Gorgolewski

 2024-09-23

 1
min

 82
words

OOSTENVELD ROBERT


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


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

 Fanny
Quandt

 2025-01-09

 1
min

 65
words

OOSTENVELD ROBERT


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


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

 Luca
Pollonini

 17 2025-01-27

 1
min

 70
words

OOSTENVELD ROBERT


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


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

 Lyuba
Zehl

 17 2025-06-26

 1
min

 67
words

OOSTENVELD ROBERT


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


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

 Tim M
Tierney

 2025-08-13

 1
min

 74
words

OOSTENVELD ROBERT


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


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Optimal configuration of on-scalp OPMs with fixed channel counts

 Robert
Oostenveld

 2025-08-13

 1
min

 69
words

OOSTENVELD ROBERT


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

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A Stereo Synchronization Method for Consumer-Grade Video Cameras to Measure Multi-Target 3D Displacement Using Image Processing in Shake Table Experiments

 Yuan-Sen
Yang



2025-09-13



1
min



63
words

LOW VISION

Summary: The use of consumer-grade cameras for stereo vision provides a cost-effective, non-contact method for measuring three-dimensional displacement in civil engineering experiments. However, obtaining accurate 3D coordinates requires accurate temporal alignment of several unsynchronized cameras, which is...





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Real-Time Driver Attention Detection in Complex Driving Environments via Binocular Depth Compensation and Multi-Source Temporal Bidirectional Long Short-Term Memory Network

 Huajie
Liu

 2025-09-13

 1
min

 62
words

LOW VISION

Summary: Driver distraction is a key factor contributing to traffic accidents. However, in existing computer vision-based methods for driver attention state recognition, monocular camera-based approaches often suffer from low accuracy, while multi-sensor data fusion techniques are compromised by poor real-ti...

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Tracking-Based Denoising: A Trilateral Filter-Based Denoiser for Real-World Surveillance Video in Extreme Low-Light Conditions



Chen

Lv



17

2025-09-13



1

min



75

words

LOW VISION

Summary: Video denoising in extremely low-light surveillance scenarios is a challenging task in computer vision, as it suffers from harsh noise and insufficient signal to reconstruct fine details. The denoising algorithm for these scenarios encounters challenges such as the lack of ground truth, and the nois...

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A Unified Preprocessing Pipeline for Noise-Resilient Crack Segmentation in Leaky Infrastructure Surfaces



Jeongho

Cho



17

2025-09-13



1

min



67


words


LOW VISION

Summary: Wet cracks caused by leakage often exhibit visual and structural distortions due to surface contamination, salt crystallization, and corrosion byproducts. These factors significantly degrade the performance of sensor- and vision-based crack detection systems. In moist environments, the initiation an...


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U-ResNet, a Novel Network Fusion Method for Image Classification and Segmentation

 Yaqing
Song

 2025-09-13

 1
min

 65
words

LOW VISION


Summary: Image classification and segmentation are important tasks in computer vision. ResNet and U-Net are representative networks for image classification and image segmentation, respectively. Although many scholars used to fuse these two networks, most integration focuses on image segmentation with U-Net,...


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Serum Vitamin D Levels as Predictors of Response to Intravitreal Anti-VEGF Therapy in Diabetic Macular Edema: A Clinical Correlation Study

 Ana Maria
Stoica

 2025-09-13

 1
min

 66
words

LOW VISION


Summary: Our study explored the role of serum 25-hydroxyvitamin D [25(OH)D] levels as an indicator of response to intravitreal anti-vascular endothelial growth factor (anti-VEGF) therapy in patients with diabetic macular edema (DME), highlighting functional and anatomical outcomes linked to systemic biomarkers...


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Visual Outcomes of a Non-Diffractive Extended Depth-of-Focus Intraocular Lens in Patients with Early-Stage Age-Related Macular Degeneration

 Celia Sánchez-Ramos

 2025-09-13

 1 min

 66 words

LOW VISION

Summary: Background/Objectives: Age-related macular degeneration (AMD) is a leading cause of visual impairment in older adults and often coexists with cataracts. The indication of presbyopia-correcting intraocular lenses (IOLs) in these patients remains controversial. This study aimed to evaluate the clinica...

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Use of Mechanical Enhanced Colonoscopy to Improve Polyp Detection During Colorectal Cancer Screening: A Real-World Healthcare Database Analysis

 Seth A
Gross



2025-09-13



1
min



71
words

LOW VISION

Summary: Introduction: High performance colonoscopy requires the monitoring of an individual's adenoma detection rate (ADR). The Endocuff (EndoCuff Vision, Olympus America Inc., Center Valley, PA, USA) is an endoscopic distal attachment device that increases surface area exposure during colonoscopy. While st...




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Metabolic alterations in diabetic patients: aqueous humor profiling for biomarker discovery

 Guna
Laganovska



2025-09-13



1
min



64
words

LOW VISION

Summary: Diabetic retinopathy, a leading cause of vision loss in working-age populations, is a severe complication of diabetes mellitus. Metabolomics, a key approach in systems biology, offers insights into the complex pathophysiology of diabetes by analyzing low-molecular-weight compounds in biological cont...





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Evaluating the predictive potential of Th1 (IFN- γ)/CD4⁺/CD4⁺ in rapidly progressive amyotrophic lateral sclerosis

 Hao Zhang

 2025-09-14

 1 min

 31 words

LOW VISION


Summary: CONCLUSIONS: Th1/CD4⁺ (with an optimal cutoff value of 16.21) was established as an independent risk factor for rapid progression in ALS. The machine learning model incorporating Th1/CD4⁺ demonstrated strong predictive performance.


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My Broken Heart

 Ashley C Rider

 2025-05-08

 1 min

 34 words

TACTILE ACUITY


Summary: AUDIENCE: The target audience for the key learning objectives of this Left-Ventricular Assist Device (LVAD) simulation are emergency medicine residents. Other team members such as attendings, nurses, pharmacists, and technicians could potentially be integrated.


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Distributions of orofacial two-point discrimination threshold: A cross-sectional study in healthy population and patients with pain-related temporomandibular disorders

 Xin
Xiong

 17 2025-05-15

 1
min

 70
words

TACTILE ACUITY

Summary: CONCLUSION: Pain-related TMDs patients had weaker orofacial tactile acuity, which was consistent in gender subgroups, except for the temporal region of males. Healthy males had weaker tactile acuity compared to females in TMJ and temporal regions. No significant gender effect on orofacial tactile ac...



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

 Thomas Hummel

 2025-05-28  1 min  70 words


TACTILE ACUITY

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

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

 Hiroyuki Kajimoto

 2025-06-17  1 min  75 words

TACTILE ACUITY

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

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

 Leah R
Bent



2025-06-27



1
min



69
words

TACTILE ACUITY

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




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Directional vibro-tactile hazard warnings for drivers with vision impairments

 Alex R
Bowers



2025-07-02



1
min



80
words

TACTILE ACUITY

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






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

 Cecilia
Guariglia

 2025-08-01  1
min

 64
words

TACTILE ACUITY

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



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

 Eric
Fjeldheim

 2025-08-24  1
min

 22
words

TACTILE ACUITY


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


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

 Paula Anne Newman-Casey

 2025-09-09

 1 min

 74 words


TACTILE ACUITY


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

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

 Sviatoslav N Bagriantsev

 2025-09-13

 1 min

 58 words

TACTILE ACUITY

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

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WAYVision: A hybrid deep learning approach for recognizing handwritten Kannada Braille using wavelet transformation and attention based YOLOv5



Shobha Rani

N



2025-08-25



1

min



64


words

BRAILLE

Summary: Handwritten Braille character recognition presents a significant challenge in the field of assistive technology, especially with the inclusion of various linguistic scripts such as Kannada. The data set is uniquely curated, combining ground-truth data from Kaggle and real-world samples collected fro...

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

 Joseph Paul
Nemargut



2025-08-25



1

min



62

words

BRaille

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




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

 Jianming
Xu



2025-08-25



1

min



62

words

BRaille

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



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

 Million
Phiri



2025-08-26



1
min



46
words

BRAILLE

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




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Explosion-powered eversible tactile displays

 Robert F
Shepherd



2025-08-27



1
min



64
words

BRAILLE

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





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

 Zhijun
Ma

 2025-08-28

 1
min

 57
words

[BRAILLE](#)


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


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

 Min
Zhang

 2025-08-28

 1
min

 64
words

[BRAILLE](#)

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

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



Hao
Lin



2025-09-01



1
min



72
words

BRAILLE

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



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



Ji
Liu



2025-09-02



1
min



56
words

BRAILLE

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



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

Önder
İşlek

17 2025-09-12

1
min

55
words

BRAILLE

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

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Effects of transcranial alternating current stimulation on Spike train correlation in two-compartment model neurons

Guosheng
Yi

17 2025-09-10

1
min

72
words

TDCS TACS TRNS


Summary: Correlated spiking has been widely found in large population of neurons and been linked to neural coding. Transcranial alternating current stimulation (tACS) is a promising non-invasive brain stimulation technique that can modulate the spiking activity of neurons. Despite its growing application, th...


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Personalized High-Definition Transcranial Direct Current Stimulation for the Treatment of Depression: A Randomized Clinical Trial

 Katherine
Narr

 2025-09-11

 1
min

 66
words

TDCS TACS TRNS


Summary: CONCLUSIONS AND RELEVANCE: In this randomized clinical trial of HD-tDCS in participants with moderate to severe depression, the 12-day HD-tDCS therapy was observed to significantly improve mood with a moderate effect size. Similar effect sizes in pharmacotherapy, psychotherapy, and conventional tDCS...


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Effect of theta-transcranial alternating current stimulation on working memory performance among healthy adults: A systematic review and meta-analysis

 Rui-Ke
Zhang

 2025-09-11

 1
min

 27
words

TDCS TACS TRNS

Summary: CONCLUSION: Theta-tACS enhances working memory in healthy adults, with effects modulated by the task type and protocol parameters, offering dual implications for cognitive enhancement and clinical interventions.


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Review of nonpharmacological interventions for delaying the effects of cerebral neuropathy caused by diabetes

Lun-De
Liao


 2025-09-12

 1
min

 67
words

TDCS TACS TRNS

Summary: Diabetic peripheral neuropathy (DPN) is a debilitating complication of diabetes that affects nearly half of diabetic patients and manifests as chronic pain, sensory loss, and motor dysfunction. The limited efficacy of traditional pharmacological treatments, coupled with their side effects, has inten...

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Online HD-tRNS over the right temporoparietal junction modulates social inference but not motor coordination

Guillaume
Dumas

 2025-09-12

 1
min

 68
words

TDCS TACS TRNS


Summary: Social interactions are fundamental to human cognition, with the right temporoparietal junction (rTPJ) playing a key role in integrating motor coordination and social inference. While transcranial random noise stimulation (tRNS) is a promising technique for modulating cortical excitability in real t...


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Neural Correlates of Borderline Personality Disorder (BPD) Based on Electroencephalogram (EEG)-A Mechanistic Review

 Donata Kurpas

 2025-09-13

 1 min

 62 words

TDCS TACS TRNS


Summary: Borderline Personality Disorder (BPD) is marked by emotional dysregulation, instability in self-image and relationships, and high impulsivity. While functional magnetic resonance imaging (fMRI) studies have provided valuable insights into the disorder's neural correlates, electroencephalography (EEG...


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Burnout and the Brain-A Mechanistic Review of Magnetic Resonance Imaging (MRI) Studies

 Donata Kurpas

 2025-09-13

 1 min

 64 words

TDCS TACS TRNS


Summary: Occupational burnout is ubiquitous yet still debated as a disease entity. Previous reviews surveyed multiple biomarkers but left their neural substrate unclear. We therefore asked: What, if any, reproducible magnetic-resonance signature characterises burnout? Following PRISMA principles adapted for ...

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From Immediate Impact to Enduring Change: A Transcriptomic Comparison of tDCS's Temporal Effects and Its Long-Term Equivalence with TMS

 Hanoch
Kaphzan



2025-09-13



1
min



63
words

TDCS TACS TRNS

Summary: Transcranial Direct Current Stimulation (tDCS) and Transcranial Magnetic Stimulation (TMS) are neuromodulatory techniques with therapeutic potential for similar disorders; however, their molecular effects require further elucidation, and whether both strategies work in similar biological pathways is...



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General Innovations in Pain Management

 Alaa Abd-
Elsayed



2025-09-13



1
min



74
words

TDCS TACS TRNS

Summary: Chronic pain management is constantly evolving, and our literature review aims to describe the general innovations happening within the field. The need for advancements in chronic pain is a necessity, as debilitating back pain and other forms of chronic pain are significant issues in the United States...





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Behavioral outcomes after tDCS treatment during immediate post-intervention and follow-up periods in children and adolescents diagnosed with attention-deficit/hyperactivity disorder: a systematic review and meta-analysis on randomized sham-controlled trials

 Kuo-Chuan
Hung

 2025-09-13

 1
min

 58
words

TDCS TACS TRNS

Summary: This meta-analysis aimed at elucidating the effectiveness of transcranial direct current stimulation (tDCS) in improving behavioral symptoms of attention deficit/hyperactivity disorder (ADHD) in children/adolescents during the immediate post-intervention/follow-up periods and identifying potential c...


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Neural dynamics of constraint relaxation and problem representation changes in single-trial insight problem solving: An fNIRS study

 Rieko
Osu

 2025-09-10

 1
min

 68
words

FNIRS

Summary: Insight problem solving involves overcoming an impasse when a solution seems unreachable, often experienced as an 'Aha!' moment. In such solving, shifting from an incorrect representation imposed by constraints to a correct representation through constraint relaxation is critical. Prior research com...


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Differential Cortical Hemodynamics During Standard and Reversed Visually Guided Navigation: An fNIRS-Based Investigation

 Hee
Cho

 17 2025-09-10

 1
min

 68
words

FNIRS

Summary: Visuospatial perception, which is based on the comprehension of objects and space, requires spatial attention to the surrounding environment. Stimulus-related elements that affect visuospatial tasks include object geometry, familiarity, complexity, and picture plane versus depth rotation. The dorsal...


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Intermittent theta burst stimulation enhances prefrontal activation and connectivity: evidence from fNIRS

 Xia
Bi

 17 2025-09-11

 1
min

 16
words

FNIRS


Summary: OBJECTIVE: To investigate the neuro-regulatory mechanisms of intermittent theta burst stimulation (iTBS) on prefrontal brain function.

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Investigating Hemodynamic Patterns During Beat Processing in Cochlear Implant Users: Insights from a Finger Tapping Study

 Raymond Lee
Goldsworthy



2025-09-11



1
min



46
words

FNIRS

Summary: INTRODUCTION: Individuals with cochlear implants often struggle with melody and timbre perception in music, leading to diminished music appreciation. While they demonstrate proficiency in recognizing beat and rhythm, it remains unclear whether beat information is processed similarly in their brains ...




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Evaluating the effects of multimodal EEG-fNIRS neurofeedback for motor imagery: An experimental platform and study protocol

 Pierre
Maurel

 17 2025-09-11

 1
min

 61
words

FNIRS

Summary: BACKGROUND: Neurofeedback (NF) enables the self-regulation of brain activity through real-time feedback extracted from brain measures. Recently, the combination of several neuroimaging methods to characterize brain activity has led to growing interest in NF. The integration of various portable recor...


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The Emotional and Cognitive Effects of Synchronizing to Music During Acute Exercise: An fNIRS Study

 William Forde
Thompson

 17 2025-09-12

 1
min

 61
words

FNIRS

Summary: Synchronizing movements to music enhances exercise performance and enjoyment, yet its short-term effects on attention and cognition remain underexplored. This study examined the influence of synchronous music, asynchronous music, and a no-music control condition on emotional responses, perceived exe...

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Interbrain Synchrony Mitigates Extremism Within Echo Chambers



Simone Shamay-Tsoory



2025-09-12



1 min



65 words

FNIRS

Summary: People tend to engage with content that aligns with their pre-existing attitudes, forming echo chambers that reinforce biases and may amplify extremism. Here, we investigate whether discussions within homogeneous groups drive attitudinal extremity and whether interbrain synchronized activity between...



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An Empirical Study on the Impact of Different Interaction Methods on User Emotional Experience in Cultural Digital Design



Feng Zou



2025-09-13



1 min



64 words

FNIRS

Summary: Traditional culture plays a vital role in shaping national identity and emotional belonging, making it imperative to explore innovative strategies for its digital preservation and engagement. This study investigates how interaction design in cultural digital games influences users' emotional experie...





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TopoTempNet: A High-Accuracy and Interpretable Decoding Method for fNIRS-Based Motor Imagery

 Zhejun
Kuang

 17 2025-09-13

 1
min

 63
words

FNIRS


Summary: Functional near-infrared spectroscopy (fNIRS) offers a safe and portable signal source for brain-computer interface (BCI) applications, particularly in motor imagery (MI) decoding. However, its low sampling rate and hemodynamic delay pose challenges for temporal modeling and dynamic brain network an...


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Compact Colocated Bimodal EEG/fNIRS Multi-Distance Sensor

 Angélique
Rasclé

 17 2025-09-13

 1
min

 70
words

FNIRS


Summary: At present, it is a real challenge to measure brain signals outside of the lab with portable systems that are robust, comfortable and easy to use. We propose in this article a bimodal electroencephalography-functional near-infrared spectroscopy (EEG-fNIRS) sensor whose spatial geometry allows the ro...

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Medial preoptic CCKAR mediates anxiety and aggression induced by chronic emotional stress in male mice

 Hong
Lian

 2025-09-11  1
min

 65
words

BRAIN COMPUTER INTERFACE

Summary: Anxiety disorders frequently accompany aggression, with their co-occurrence predicting greater functional impairment and poor prognosis. Nevertheless, the underlying neural mechanisms remain elusive, primarily due to a lack of appropriate animal models. Here, we designed a chronic conspecific outsid...


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EEGOpt: A performance efficient Bayesian optimization framework for automated EEG signal classification

 Monisha
Chakraborty

 2025-09-11  1
min

 34
words

BRAIN COMPUTER INTERFACE

Summary: CONCLUSION: EEGOpt is a scalable and interpretable framework that automatically identifies optimal signal processing and classification strategies adaptable to EEG datasets, making it a valuable tool for neuroscientific research, diagnostics, and brain-computer interface development.


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Stretchable Multilevel Mesh Brain Electrodes for Neuroplasticity in Glioma Patients Undergoing Surgery

Xue
Feng

2025-09-12

1
min

63
words

BRAIN COMPUTER INTERFACE

Summary: Brain disease surgical treatment usually leads to neurological dysfunction. Electroencephalogram (EEG)-based neuroplasticity study may facilitate patient nerve function recovery from injury, allowing a return to normal activities. Due to the limitations of wound infections and hair barrier effects, ...

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2D Vanadium Carbide/Oxide Heterostructure-Based Artificial Sensory Neuron for Multi-Color Near-Infrared Object Recognition

 Jiahong Wang

 17

2025-09-12



1 min



58 words

BRAIN COMPUTER INTERFACE

Summary: Near-infrared (NIR) photon detection and object recognition are crucial technologies for all-weather target identification in autonomous navigation, nighttime surveillance, and tactical reconnaissance. However, conventional NIR detection systems, which rely on photodetectors and von Neumann computin...

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Sequence action representations contextualize during early skill learning



Leonardo G
Cohen



2025-09-12



1
min



68
words

BRAIN COMPUTER INTERFACE

Summary: Activities of daily living rely on our ability to acquire new motor skills composed of precise action sequences. Here, we asked in humans if the millisecond-level neural representation of an action performed at different contextual sequence locations within a skill differentiates or remains stable d...



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Classification of Different Motor Imagery Tasks with the Same Limb Using Electroencephalographic Signals



Carlos Julio Tierra-
Criollo



2025-09-13



1
min



69
words

BRAIN COMPUTER INTERFACE

Summary: Stroke is a neurological condition that often results in long-term motor deficits. Given the high prevalence of motor impairments worldwide, there is a critical need to explore innovative neurorehabilitation strategies that aim to enhance the quality of life of patients. One promising approach invol...




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TopoTempNet: A High-Accuracy and Interpretable Decoding Method for fNIRS-Based Motor Imagery

 Zhejun
Kuang

 17

2025-09-13



1
min



63
words

BRAIN COMPUTER INTERFACE

Summary: Functional near-infrared spectroscopy (fNIRS) offers a safe and portable signal source for brain-computer interface (BCI) applications, particularly in motor imagery (MI) decoding. However, its low sampling rate and hemodynamic delay pose challenges for temporal modeling and dynamic brain network an...




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A new wide-scope, multi-biomarker wastewater-based epidemiology analytical method to monitor the health and well-being of inhabitants at a metropolitan scale

 Barbara Kasprzyk-Hordern

 2025-09-13

 1 min

 64 words

BRAIN COMPUTER INTERFACE

Summary: This manuscript establishes a new, comprehensive biomarker list and a multiresidue trace quantification method for community-wide health and well-being assessment at a metropolitan scale using wastewater-based epidemiology (WBE) and mass spectrometry pipelines. This method enables the quantification...

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Thalamocortical dysrhythmia-related sleep spindle desynchronization in patients with tinnitus



Yuanqing
Li



2025-09-13



1
min



68
words

BRAIN COMPUTER INTERFACE

Summary: Patients with tinnitus commonly suffer from sleep problems, and the underlying neural mechanisms remain unclear. Previous studies have focused primarily on the correlation between patients' sleep structure and tinnitus, lacking exploration into the links between sleep problems and the underlying pat...



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Neurodevelopmental deviations in schizophrenia: Evidences from multimodal connectome-based brain ages



Huafu
Chen



2025-09-13



1
min



21
words

BRAIN COMPUTER INTERFACE

Summary: CONCLUSION: These findings from a multimodal brain age perspective suggest that advanced brain age gaps exist early in youths with schizophrenia.





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Monday Daily Thread: Project ideas!


 /u/
AutoModerator

 2025-09-15

 1
min

 244
words


REDDIT PYTHON

Summary: <!-- SC_OFF --><div class="md"><h1>Weekly Thread: Project Ideas <p>Welcome to our weekly Project Ideas thread! Whether you're a newbie looking for a first project or an expert seeking a new challenge, this is the place for you.</p> <h2>How it Works:</h2> Suggest a Project</st...


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 1
min

 2
words




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Gentoo AI Policy

 simonpure  2025-09-14  1 min  13 words

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 kristianp  2025-09-15  1 min  13 words

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Rebutting 33 False Claims About Solar, Wind, and Electric Vehicles



toomuchtodo



2025-09-15



1

min



13

words

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2025-09-15



1

min



13

words

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Object Ownership Processing in Peripersonal Space: An Electroencephalographic Study

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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...

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