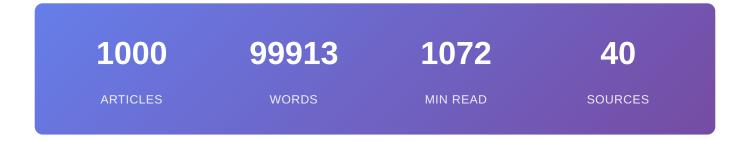


Daily Briefing - October 18, 2025

Your Daily Tech & Programming Digest

Saturday, October 18, 2025



Today's Top Stories

Processing Mandarin Chinese classifiers as a lexicosyntactic feature during noun phrase production

min



BRAIN RESEARCH

Summary: Publication date: 1 December 2025Source: Brain Research, Volume 1868Author(s): Jin Wang, Jurriaan Witteman, Niels O. Schiller



https://www.sciencedirect.com/science/article/pii/S000689932500558X?dgcid=rss_sd_all

Neuroanatomical correlates of auditory and visual statistical learning: Cortical and subcortical volume predictors

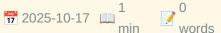
NEUROSCIENCE JOURNAL

Summary: Publication date: 10 November 2025Source: Neuroscience, Volume 587Author(s): Praveen Prem, Sukhmani Kaur Saggu, Adwoa Boadu, Sarah Saju, Kelly Nisbet, Jacqueline Cummine

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https://www.sciencedirect.com/science/article/pii/S0306452225009650?dgcid=rss_sd_all

Blood tests are now approved for Alzheimer's: how accurate are they?







NATURE NEUROSCIENCE SUBJECTS

https://www.nature.com/articles/d41586-025-03394-w

The effect of development on cortical auditory evoked potentials in normal hearing listeners and cochlear implant users

Bruce 1 257
Gantz min words

FRONTIERS HUMAN NEUROSCIENCE

Summary: IntroductionCortical auditory evoked potentials (CAEPs), such as the P1-N1-P2 complex (onset response) and the acoustic change complex (ACC), provide insight into sound detection and discrimination. While their developmental trajectories are well documented in normal-hearing (NH) listeners, less is ...

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



1 62 min 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









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











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

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



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

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









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

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

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



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

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



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

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





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

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









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

Read full article:

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



Divya 1 73
Singh min words



BRAILLE

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

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Online Regulation of Task Difficulty based on Neuro- and **Motor-feedback to improve engagement in Visual-motor Task**



1 36 min words







Summary: CONCLUSION: Our findings suggest that the proposed NMF system can enable online neural activity regulation in visual-motor tasks and achieve enhanced integration between cognitive and sensorimotor areas, with the potential to improve the rehabilitation training outcomes.

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Effect of lower limb mirror visual feedback on cortical activation in healthy subjects: a self-controlled randomized trail

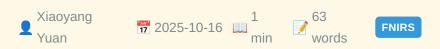


Summary: CONCLUSION: LLMVF increases neural activity in the sensory and motor related areas, indicating that LLMVF can promote more activation of brain functional areas, which verifies the top-down positive effect of LLMVF.

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TSFNet: Temporal-Spatial Fusion Network for Hybrid Brain-Computer Interface



Summary: Unimodal brain-computer interfaces (BCIs) often suffer from inherent limitations due to the characteristic of using single modalities. While hybrid BCIs combining electroencephalography (EEG) and functional near-infrared spectroscopy (fNIRS) offer complementary advantages, effectively integrating th...

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Diagnostic Efficacy of Olfactory Function Test Using Functional Near-Infrared Spectroscopy with Machine Learning in Healthy Adults: A Prospective Diagnostic-Accuracy (Feasibility/Validation) Study in Healthy Adults with Algorithm Development



Summary: Background/Objectives: The YSK olfactory function (YOF) test is a culturally adapted psychophysical tool that assesses threshold, discrimination, and identification. This study evaluated whether functional near-infrared spectroscopy (fNIRS) synchronized with routine YOF testing, combined with machin...

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Enhanced Activation in the Dorsolateral Prefrontal Cortex and Inferior Parietal Lobule During Recovery from Body Dissatisfaction



Summary: Previous studies have examined the neural mechanisms of body dissatisfaction. This study aimed to investigate the neural basis of recovery from body dissatisfaction. Sixty-seven young women participated in this study, engaging in a fat talk-a conversation known to induce body dissatisfaction-followe...

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Immediate modulation effects of Tongue Tri-needle on brain functional networks in infratentorial stroke patients with dysphagia: a randomized controlled trial



Yan
Chen

1
2025-10-17
min

59
words



Summary: CONCLUSION: Infratentorial stroke patients with dysphagia exhibit disrupted functional connectivity within the fronto-temporo-sensorimotor network, which is associated with clinical impairment. Tongue Tri-needle multi-stage, selective reconfiguration of brain functional networks, particularly by mod...

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Riemannian geometry boosts functional near-infrared spectroscopy-based brain-state classification accuracy



1 37 min words





FNIRS

Summary: CONCLUSION: To our knowledge, we are the first to demonstrate that the proposed Riemannian-geometry-based classification approach is both powerful and viable for fNIRS data, substantially increasing the accuracy in binary and multi-class classification of brain activation patterns.

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Sensitive and specific fNIRS-based approach for awareness detection in disorders of consciousness: proof of principle in healthy adults







Summary: CONCLUSION: This individualized diagnostic approach may have the potential to significantly enhance diagnostic accuracy for DoCs. It provides a noninvasive, efficient, and objective assessment, potentially reducing the rate of misdiagnosis rates. The practicality and minimal technical requirements o...

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Neural and Behavioral Dynamics of Dyadic Rhythm Coordination across Limb Pairings











Summary: Interpersonal motor synchronization relies on precise neural coordination, yet its underlying brain mechanisms remain incompletely understood. Guided by mutual prediction theory, we investigated how temporal structure and effector-specific constraints shape dyadic coordination. Using functional near...

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Motor imagery in individuals with congenital aphantasia

Magdalena Szubielska

1 71 min words

FNIRS

Summary: Individuals who experience aphantasia have an inability to create sensory mental images, what lead to a range of cognitive and behavioral differences compared to the general population. However, little is known about how this phenomenon affects the creation of motor imagery. Our study aims to check ...

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Advances in flexible high-density microelectrode arrays for brain-computer interfaces



Woon-Hong
Yeo

1
2025-10-16
min

61
BRAIN COMPUTER INTERFACE



Summary: Recent advances in flexible high-density microelectrode arrays (FHD-MEA) have revolutionized brain-computer interfaces (BCIs) by providing high spatial resolution, mechanical compliance, and long-term biocompatibility. This technology enables stable neural recording and precise stimulation, addressi...

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Neural mechanism of the sexually dimorphic winner effect in mice



Summary: The "winner effect," where prior victories increase the likelihood of future wins, profoundly shapes social hierarchy dynamics and competitive motivation. Although human literature suggests a less pronounced winner effect in females, the neural mechanisms underlying these sex differences remain uncl...

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Artificial intelligence and computer-aided diagnosis in diagnostic decisions: 5 questions for medical informatics and human-computer interface research









BRAIN COMPUTER INTERFACE

Summary: OBJECTIVES: Artificial intelligence (AI) has the potential to transform medical informatics by supporting clinical decision-making, reducing diagnostic errors, and improving workflows and efficiency. However, successful integration of AI-based decision support systems depends on careful consideratio...

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Diffusion trajectory of atypical morphological development in autism spectrum disorder

Xujun 1 68
Duan min words

BRAIN COMPUTER INTERFACE

Summary: Brain development from childhood through adolescence is crucial for understanding autism spectrum disorder (ASD). Yet how functional networks regulate developmental changes in brain morphology remains unclear. Here, we analyzed gray matter volume (GMV) and functional connectivity (FC) in 301 individ...

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A Moratorium on Implantable Non-Medical Neurotech Until **Effects on the Mind are Properly Understood**

2025-10-17 min 67 words



BRAIN COMPUTER INTERFACE

Summary: The development of non-medical consumer neurotechnology is gaining momentum. As companies chart the course for future implanted and invasive braincomputer interfaces (BCIs) in non-medical populations, the time has come for concrete steps toward their regulation. We propose three measures: First, a ...

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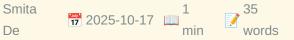
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Simple Prostatectomy is an Effective Option for BPH Patients With Hypocontractile Bladders









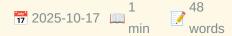
BRAIN COMPUTER INTERFACE

Summary: CONCLUSIONS: This is one of the first studies assessing outcomes of SP in patients with hypocontractile bladders. SP is an effective surgical option for patients with impaired detrusor function including those who are catheter dependent.

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Electromagnetic Stimulation to Reduce Disability After Ischemic Stroke: The EMAGINE Randomized Clinical Trial





BRAIN COMPUTER INTERFACE

Summary: CONCLUSION AND RELEVANCE: This trial found that ENTF therapy is safe. Although the difference between groups was not statistically significant, ENTF therapy may reduce global disability in patients with severe baseline disability after ischemic stroke. These results warrant confirmation in a higher ...

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A different bimodal: case series of patients with a cochlear implant and a contralateral bone conduction implant









BRAIN COMPUTER INTERFACE

Summary: CONCLUSION: The synergy of electrical and vibratory auditory stimulation observed in this case series provided subjective functional benefits and measurable speech perception benefits for some patients, while others experienced minimal or no measurable benefit and ceased usage.

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Progress in the combined application of Brain-Computer Interface and non-invasive brain stimulation for post-stroke motor recovery



Summary: Stroke remains one of the leading causes of disability and death among adults globally. Both Brain-Computer Interface (BCI) and Non-invasive Brain Stimulation (NIBS) have shown significant potential in facilitating motor recovery in stroke patients. The combination of BCI and NIBS enhances brain fun...

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Modulation of brain oscillations by continuous theta burst stimulation in patients with insomnia

Jiahui 1 66 min words

BRAIN COMPUTER INTERFACE

Summary: Continuous theta burst stimulation (cTBS) induces long-lasting depression of cortical excitability in motor cortex. In the present study, we explored the modulation of cTBS on resting state electroencephalogram (rsEEG) during wakefulness and subsequent sleep in patients with insomnia disorder. Forty...

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I was tired of writing CREATE TABLE statements for my Pydantic models, so I built PydSQL to automate

1 390 MainWild1290 min words

REDDIT PYTHON

Summary: <!-- SC_OFF --><div class="md">Hey, I'd like to share a project I built to streamline a common task in my workflow. I've structured this post to follow the showcase rules. What My Project Does: PydSQL is a lightweight, no dependencies besides...

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A Force/Torque Taxonomy for Classifying States During **Physical Co-Manipulation**

1 149 min words

TRANSACTIONS HAPTICS

Summary: Achieving seamless human-robot collaboration requires a deeper understanding of how agents manage and communicate forces during shared tasks. Force interactions during collaborative manipulation are inherently complex, especially when considering how they evolve over time. To address this complexity...

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Haptic Relocation Away From the Fingertip: Where, Why, and How



TRANSACTIONS HAPTICS

Summary: Tactile haptic devices are often designed to render meaningful, complex, and realistic touch-based information on users' skin. While fingertips and hands are the most preferred body locations to render haptic feedback, recent trends allow such feedback to be extended to alternative body locations (e...

Read full article:

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Tactile-Thermal Interactions: Cooperation and Competition

1 198 TRANSACTIONS HAPTICS words

Summary: This review focuses on the interactions between the cutaneous senses, and in particular touch and temperature, as these are the most relevant for developing skin-based display technologies for use in virtual reality (VR) and for designing multimodal haptic devices. A broad spectrum of research is re...

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Twenty Years of World Haptics: Retrospective and Future Directions



http://ieeexplore.ieee.org/document/11174044

Effects of theta burst stimulation on the interoceptive brain network and cardiac interoception

BRAIN RESEARCH

Summary: Publication date: 1 December 2025Source: Brain Research, Volume 1868Author(s): Lisa Lai, Til Ole Bergmann, Claus Vögele, Jonathan Cimino, Damien Salles, Marian Van der Meulen, Tabea Schmidt, André Schulz</ p>



https://www.sciencedirect.com/science/article/pii/S0006899325005591?dgcid=rss_sd_all

A deep learning framework for real-time prediction of the behavioral state transition during predation





BRAIN RESEARCH

Summary: Publication date: 1 December 2025Source: Brain Research, Volume 1868Author(s): Guifeng Zhai, Jincheng Wang, Qiaoqian Wei, Qiyue Deng, Xue Liu, Zhiyi Chen, Yi Zhou



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Astrocyte response in Alzheimer's disease: Good or bad?

BRAIN RESEARCH

Summary: Publication date: 1 December 2025Source: Brain Research, Volume 1868Author(s): Alaa Ismail, Hayder M. Al-kuraishy, Ali I. Al-Gareeb, Ali K. Albuhadily, Asmaa S.A. Yassen, Athanasios Alexiou, Marios Papadakis, Gaber El-Saber Batiha

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



NEUROSCIENCE JOURNAL

Summary: Publication date: 10 November 2025Source: Neuroscience, Volume 587Author(s): Amy Miller, Richard Allen, Rumana Chowdhury, Melanie Burke

https://www.sciencedirect.com/science/article/pii/S0306452225009923?dgcid=rss sd all

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

Jianming 1 62
Xu min words

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

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



1 46 min words



BRAILLE

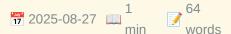
Summary: CONCLUSION: Sensory disability status influenced women's contraceptive behaviour in South Africa. Current family planning interventions should target women with sensory disabilities by prioritising accessible communication methods (e.g., braille, sign language), disability awareness training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

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Explosion-powered eversible tactile displays







BRAILLE

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

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











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

Read full article:

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

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







BRAILLE

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

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

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









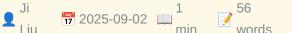
Summary: It has been argued in previous research that several competing pressures guide the directions of language evolution (economy vs. redundancy; arbitrariness vs. systematicity). For sign languages, however, the effects of competing pressures on their change of lexical systems remain largely unclear.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

Read full article:

https://pubmed.ncbi.nlm.nih.gov/40889233/?

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











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

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











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

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

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



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

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

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





BRAILLE

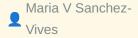
Summary: This study evaluated the effectiveness of an audiosensory performance method in enhancing oral health knowledge and status among visually impaired children aged 6-12 years in the National Capital Region (NCR), Delhi. An interventional study design was used, involving 251 participants equally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

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Cortical modulation by exogenous electric fields is consistent with electric dipoles







TDCS TACS TRNS

Summary: Cortical activity can be modulated by endogenous and exogenous electric fields (EFs). Recent experimental and computational data suggested that endogenous EFmediated effects are compatible with electric dipoles, which contribute to the synchronization of neighboring cortical columns. Consistently, ...

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A deep learning approach to artifact removal in Transcranial **Electrical Stimulation: From shallow methods to deep neural** networks and state space models

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Summary: Transcranial Electrical Stimulation (tES) is a non-invasive neuromodulation technique that generates artifacts in simultaneous EEG recordings, hindering brain activity analysis. This study analyzes Machine Learning (ML) methods for tES noise artifact removal across three stimulation types: tDCS, tAC...

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Diffusion trajectory of atypical morphological development in autism spectrum disorder



1 68 TDCS TACS TRNS



Summary: Brain development from childhood through adolescence is crucial for understanding autism spectrum disorder (ASD). Yet how functional networks regulate developmental changes in brain morphology remains unclear. Here, we analyzed gray matter volume (GMV) and functional connectivity (FC) in 301 individ...

Read full article:

https://pubmed.ncbi.nlm.nih.gov/41102402/?

Primary stabbing headache in a tertiary headache centre

1 2025-10-16 min 58

TDCS TACS TRNS

Summary: INTRODUCTION: Primary stabbing headache (PSH) is a short-lasting head pain occurring spontaneously in the absence of underlying structural causes. Although it is a frequent disorder, with a reported lifetime prevalence of 35.2% in the general population, its pathophysiological underpinnings remain i...

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

Flood

1 63 min words



TDCS TACS TRNS

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

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High-intensity transcranial alternating current stimulation combined with pharmacotherapy for adolescent major depressive disorder: a prospective case report study

Summary: CONCLUSIONS: The combination of HI-tACS and pharmacotherapy demonstrated potential early effects in this small cohort of adolescents with MDD, particularly during the initial phase of treatment. These preliminary findings warrant further investigation through large-scale randomized controlled trials...

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Non-invasive brain stimulation for suicidal ideation: a systematic review and metanalysis of the current literature









TDCS TACS TRNS

Summary: Data suggests that the available therapeutic tools are still insufficient to deal with suicidality. Non-Invasive Brain Stimulation techniques (NIBS) have entered the recognized guidelines for therapies in psychiatry due to the advantages related to safety and tolerability. The purpose of this review...

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Active and sham transcranial direct-current stimulation (tDCS) plus core stability on the knee kinematic and performance of the lower limb of the soccer players with dynamic knee valgus; two armed randomized clinical trial





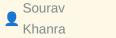


TDCS TACS TRNS

Summary: Dynamic knee valgus (DKV) is a prevalent risk factor for anterior cruciate ligament (ACL) injuries in soccer players, particularly during noncontact mechanisms. Transcranial direct-current stimulation (tDCS) and core stability exercises have shown promise in enhancing motor control and biomechanical...

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Effect of Precision-based HD-tDCS Over Conventional HDtDCS in Young-onset Mania: Protocol for an Active **Comparison fMRI and TMS Study**







TDCS TACS TRNS

Summary: CONCLUSIONS: This study protocol aims to explore the effect of novel precision-based HD-tDCS in young-onset mania compared to conventional HD-tDCS, thereby allowing for the examination of precision neuromodulation in young-onset mania.

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Progress in the combined application of Brain-Computer Interface and non-invasive brain stimulation for post-stroke motor recovery









TDCS TACS TRNS

Summary: Stroke remains one of the leading causes of disability and death among adults globally. Both Brain-Computer Interface (BCI) and Non-invasive Brain Stimulation (NIBS) have shown significant potential in facilitating motor recovery in stroke patients. The combination of BCI and NIBS enhances brain fun...

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Online Regulation of Task Difficulty based on Neuro- and Motor-feedback to improve engagement in Visual-motor Task





Summary: CONCLUSION: Our findings suggest that the proposed NMF system can enable online neural activity regulation in visual-motor tasks and achieve enhanced integration between cognitive and sensorimotor areas, with the potential to improve the rehabilitation training outcomes.

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Effect of lower limb mirror visual feedback on cortical activation in healthy subjects: a self-controlled randomized trail



Li 1 31 words







Summary: CONCLUSION: LLMVF increases neural activity in the sensory and motor related areas, indicating that LLMVF can promote more activation of brain functional areas, which verifies the top-down positive effect of LLMVF.

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TSFNet: Temporal-Spatial Fusion Network for Hybrid Brain-Computer Interface



Summary: Unimodal brain-computer interfaces (BCIs) often suffer from inherent limitations due to the characteristic of using single modalities. While hybrid BCIs combining electroencephalography (EEG) and functional near-infrared spectroscopy (fNIRS) offer complementary advantages, effectively integrating th...

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Diagnostic Efficacy of Olfactory Function Test Using Functional Near-Infrared Spectroscopy with Machine Learning in Healthy Adults: A Prospective Diagnostic-Accuracy (Feasibility/Validation) Study in Healthy Adults with Algorithm Development



Summary: Background/Objectives: The YSK olfactory function (YOF) test is a culturally adapted psychophysical tool that assesses threshold, discrimination, and identification. This study evaluated whether functional near-infrared spectroscopy (fNIRS) synchronized with routine YOF testing, combined with machin...

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Enhanced Activation in the Dorsolateral Prefrontal Cortex and Inferior Parietal Lobule During Recovery from Body Dissatisfaction

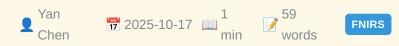


Summary: Previous studies have examined the neural mechanisms of body dissatisfaction. This study aimed to investigate the neural basis of recovery from body dissatisfaction. Sixty-seven young women participated in this study, engaging in a fat talk-a conversation known to induce body dissatisfaction-followe...

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Immediate modulation effects of Tongue Tri-needle on brain functional networks in infratentorial stroke patients with dysphagia: a randomized controlled trial



Summary: CONCLUSION: Infratentorial stroke patients with dysphagia exhibit disrupted functional connectivity within the fronto-temporo-sensorimotor network, which is associated with clinical impairment. Tongue Tri-needle multi-stage, selective reconfiguration of brain functional networks, particularly by mod...

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Riemannian geometry boosts functional near-infrared spectroscopy-based brain-state classification accuracy



Summary: CONCLUSION: To our knowledge, we are the first to demonstrate that the proposed Riemannian-geometry-based classification approach is both powerful and viable for fNIRS data, substantially increasing the accuracy in binary and multi-class classification of brain activation patterns.

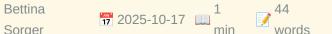
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Sensitive and specific fNIRS-based approach for awareness detection in disorders of consciousness: proof of principle in healthy adults









Summary: CONCLUSION: This individualized diagnostic approach may have the potential to significantly enhance diagnostic accuracy for DoCs. It provides a noninvasive, efficient, and objective assessment, potentially reducing the rate of misdiagnosis rates. The practicality and minimal technical requirements o...

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Neural and Behavioral Dynamics of Dyadic Rhythm Coordination across Limb Pairings











Summary: Interpersonal motor synchronization relies on precise neural coordination, yet its underlying brain mechanisms remain incompletely understood. Guided by mutual prediction theory, we investigated how temporal structure and effector-specific constraints shape dyadic coordination. Using functional near...

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Motor imagery in individuals with congenital aphantasia

Magdalena Szubielska

1 71 min words

FNIRS

Summary: Individuals who experience aphantasia have an inability to create sensory mental images, what lead to a range of cognitive and behavioral differences compared to the general population. However, little is known about how this phenomenon affects the creation of motor imagery. Our study aims to check ...

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Advances in flexible high-density microelectrode arrays for brain-computer interfaces



Woon-Hong
Yeo

1
2025-10-16
min

61
BRAIN COMPUTER INTERFACE



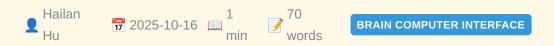
Summary: Recent advances in flexible high-density microelectrode arrays (FHD-MEA) have revolutionized brain-computer interfaces (BCIs) by providing high spatial resolution, mechanical compliance, and long-term biocompatibility. This technology enables stable neural recording and precise stimulation, addressi...

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Neural mechanism of the sexually dimorphic winner effect in mice



Summary: The "winner effect," where prior victories increase the likelihood of future wins, profoundly shapes social hierarchy dynamics and competitive motivation. Although human literature suggests a less pronounced winner effect in females, the neural mechanisms underlying these sex differences remain uncl...

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Artificial intelligence and computer-aided diagnosis in diagnostic decisions: 5 questions for medical informatics and human-computer interface research









BRAIN COMPUTER INTERFACE

Summary: OBJECTIVES: Artificial intelligence (AI) has the potential to transform medical informatics by supporting clinical decision-making, reducing diagnostic errors, and improving workflows and efficiency. However, successful integration of AI-based decision support systems depends on careful consideratio...

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Diffusion trajectory of atypical morphological development in autism spectrum disorder

Xujun 1 68
Duan min words

BRAIN COMPUTER INTERFACE

Summary: Brain development from childhood through adolescence is crucial for understanding autism spectrum disorder (ASD). Yet how functional networks regulate developmental changes in brain morphology remains unclear. Here, we analyzed gray matter volume (GMV) and functional connectivity (FC) in 301 individ...

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A Moratorium on Implantable Non-Medical Neurotech Until **Effects on the Mind are Properly Understood**

2025-10-17 min 67 words





BRAIN COMPUTER INTERFACE

Summary: The development of non-medical consumer neurotechnology is gaining momentum. As companies chart the course for future implanted and invasive braincomputer interfaces (BCIs) in non-medical populations, the time has come for concrete steps toward their regulation. We propose three measures: First, a ...

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Simple Prostatectomy is an Effective Option for BPH Patients With Hypocontractile Bladders









BRAIN COMPUTER INTERFACE

Summary: CONCLUSIONS: This is one of the first studies assessing outcomes of SP in patients with hypocontractile bladders. SP is an effective surgical option for patients with impaired detrusor function including those who are catheter dependent.

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Electromagnetic Stimulation to Reduce Disability After Ischemic Stroke: The EMAGINE Randomized Clinical Trial





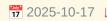
BRAIN COMPUTER INTERFACE

Summary: CONCLUSION AND RELEVANCE: This trial found that ENTF therapy is safe. Although the difference between groups was not statistically significant, ENTF therapy may reduce global disability in patients with severe baseline disability after ischemic stroke. These results warrant confirmation in a higher ...

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A different bimodal: case series of patients with a cochlear implant and a contralateral bone conduction implant









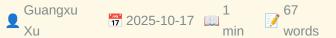
BRAIN COMPUTER INTERFACE

Summary: CONCLUSION: The synergy of electrical and vibratory auditory stimulation observed in this case series provided subjective functional benefits and measurable speech perception benefits for some patients, while others experienced minimal or no measurable benefit and ceased usage.

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Progress in the combined application of Brain-Computer Interface and non-invasive brain stimulation for post-stroke motor recovery







BRAIN COMPUTER INTERFACE

Summary: Stroke remains one of the leading causes of disability and death among adults globally. Both Brain-Computer Interface (BCI) and Non-invasive Brain Stimulation (NIBS) have shown significant potential in facilitating motor recovery in stroke patients. The combination of BCI and NIBS enhances brain fun...

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Modulation of brain oscillations by continuous theta burst stimulation in patients with insomnia

Jiahui 1 66 Deng min words

BRAIN COMPUTER INTERFACE

Summary: Continuous theta burst stimulation (cTBS) induces long-lasting depression of cortical excitability in motor cortex. In the present study, we explored the modulation of cTBS on resting state electroencephalogram (rsEEG) during wakefulness and subsequent sleep in patients with insomnia disorder. Forty...

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





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.



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...



http://doi.org/10.1037/bne0000622

Monthly Updates [April]



Summary: <div class="info custom-block">INFO These update threads only contains major updates. If you're interested in seeing all minor changes you can follow our Commits Page on ...



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

The Internet Archive needs your help.



Summary: A coalition of major record labels has filed a lawsuit against the Internet Archive—demanding \$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....



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

Monthly Updates [May]



Summary: <div class="info custom-block">INFO These update threads only contains major updates. If you're interested in seeing all minor changes you can follow our Commits Page on ...



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

Monthly Updates [June]







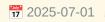


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https://fmhy.net/posts/june-2025

Monthly Updates [July]









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



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

Monthly Updates [August]



Summary: <div class="info custom-block">INFO These update threads only contains major updates. If you're interested in seeing all minor changes you can follow our Commits Page on ...

⊗ Read full article:

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

Monthly Updates [Sept]



Summary: <div class="info custom-block">INFO These update threads only contains major updates. If you're interested in seeing all minor changes you can follow our Commits Page on ...

Read full article:

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











FMHY

Summary: <h3 id="the-eu-still-wants-to-scan-your-private-messages-and-photos" tabindex="-1">The EU (still) wants to scan your private messages and photos. </h3> The "Chat Control" proposal would mand...



Read full article:

https://fmhy.net/posts/FCC

BBC Gaza documentary serious breach of rules



nsoonhui 7 2025-10-18 min 13 words





HACKER NEWS

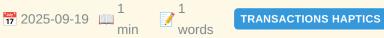
Summary: Article URL: https://www.bbc.com/news/articles/ c629j5m2n01o">https://www.bbc.com/news/articles/c629j5m2n01o Comments URL: https:// news.ycombinator.com/item?id=45625351 Points: 10 # Comments:

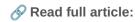


https://www.bbc.com/news/articles/c629j5m2n01o



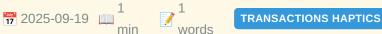






http://ieeexplore.ieee.org/document/11174043

Front Cover









http://ieeexplore.ieee.org/document/11174042

An Exploration of the Electrocorticogram Signatures Evoked by Ultrasound Thalamus Stimulation Under Isoflurane **Anesthesia in Rats**





TRANSACTIONS BIOMEDICAL ENGINEERING words

Summary: Objective: The transcranial ultrasound stimulation (TUS) on the thalamus can indirectly induce cortical response. Studies have shown that general anesthetic induced unconsciousness is related to interruption of thalamocortical connectivity. However, the neural mechanism of how anesthesia levels infl...

http://ieeexplore.ieee.org/document/10945385

MR-guided graph learning of ¹⁸F-florbetapir PET enables accurate and interpretable Alzheimer's disease staging



NEUROIMAGE

Summary: Publication date: 1 November 2025Source: NeuroImage, Volume 321Author(s): Xinyi Chen, Lijuan Chen, Weiheng Yao, Qiankun Zuo, Ye Li, Dong Liang, Shuqiang Wang, Meiyun Wang, Tao Sun

https://www.sciencedirect.com/science/article/pii/S1053811925005130?dgcid=rss_sd_all

Scale-dependent brain age with cosmological higher-order statistics from structural magnetic resonance imaging



NEUROIMAGE

Summary: Publication date: 1 November 2025Source: NeuroImage, Volume 321Author(s): Aurelio Carnero Rosell, Niels Janssen, Antonella Maselli, Ernesto Pereda, Marc Huertas-Company, Francisco-Shu Kitaura

https://www.sciencedirect.com/science/article/pii/S1053811925005038?dgcid=rss_sd_all

Astrocytic Ca²⁺ prevents synaptic depotentiation by limiting repetitive activity in dendrites during motor learning

● Wen-Biao 1 40 Gan min words

NATURE NEUROSCIENCE

Summary: Nature Neuroscience, Published online: 13 October 2025; www.nature.com/articles/s41593-025-02072-4">doi:10.1038/s41593-025-02072-4</ p>Lai et al. show a function of astrocytic Ca2+ in preventing synaptic depotentiation by reducing repetitive dendritic activity in the motor cor...

⊗ Read full article:

https://www.nature.com/articles/s41593-025-02072-4

Medicine on the menu: When illness informs appetite

Ji Heon HanWilliam W. JaaDepartment of Neuroscience, The Herbert Wertheim UF Scripps Institute

for Biomedical Innovation & Technology, Jupiter, FL 33458bProgram in Integrative Biology and Neuroscience, Department of Biological Sciences, Florida Atlantic University, Jupiter, FL 33458

1 2025-10-13 min 15 PNAS NEUROSCIENCE words





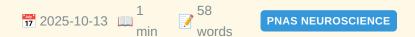
Summary: Proceedings of the National Academy of Sciences, Volume 122, Issue 42, October 2025.

https://www.pnas.org/doi/abs/10.1073/pnas.2524005122?af=R

Sex differences in healthy brain aging are unlikely to explain higher Alzheimer's disease prevalence in women

Anne RavndalAnders M. FjellDidac Vidal-PiñeiroØystein SørensenEmilie S. FalchJulia KropiunigPablo

F. GarridoJames M. RoeJosé-Luis Alatorre-WarrenMarkus H. SneveDavid Bartrés-FazAlvaro Pascual-LeoneAndreas M. BrandmaierSandra DüzelSimone KühnUlman LindenbergerLars NybergLeiv Otto WatneRichard N. HensonKristine B. WalhovdHåkon GrydelandaCenter for Lifespan Changes in Brain and Cognition, Department of Psychology, University of Oslo, Oslo 0317, NorwaybComputational Radiology and Artificial Intelligence, Department of Radiology and Nuclear Medicine, Oslo University Hospital, Oslo 0372, NorwaycDepartment of Medicine, Faculty of Medicine and Health Sciences and Neurosciences Institute, University of Barcelona, Barcelona 08036, SpaindInstitut Guttmann, Institut Universitari de Neurorehabilitació adscrit a la Universidad Autónoma de Barcelona, Badalona 08916, SpaineFundació de Recerca Clínic Barcelona, Institut d'Investigacions Biomèdiques August Pi i Sunyer, Barcelona 08036, SpainfHinda and Arthur Marcus Institute for Aging Research and Deanna and Sidney Wolk Center for Memory Health, Hebrew SeniorLife, Boston, MA 02131gDepartment of Neurology, Harvard Medical School, Boston, MA 02115hCenter for Lifespan Psychology, Max Planck Institute for Human Development, Berlin 14195, GermanyiDepartment of Psychology, MSB Medical School Berlin, Berlin 14197, GermanyiMax Planck University College London Centre for Computational Psychiatry and Ageing Research, Berlin 14195, GermanykMax Planck University College London Centre for Computational Psychiatry and Ageing Research, London WC1B 5EH, United KingdomlDepartment of Psychiatry and Psychotherapy, University Clinic Hamburg-Eppendorf, Hamburg 20251, GermanymCenter for Environmental Neuroscience, Max Planck Institute for Human Development, Berlin 14195, GermanynUmeå Center for Functional Brain Imaging, Umeå University, Umeå 901 87, SwedenoDepartment of Medical and Translational Biology, Umeå University, Umeå 901 87, SwedenpDepartment of Diagnostics and Intervention, Umeå University, Umeå 901 87, SwedenqOslo Delirium Research Group, Institute of Clinical Medicine, Campus Ahus, University of Oslo, Oslo 0318, Norwayr Department of Geriatric Medicine, Akershus University Hospital, Lørenskog 1478, NorwaysMedical Research Council Cognition and Brain Sciences Unit, Department of Psychiatry, University of Cambridge, Cambridge CB2 7EF, United Kingdom



Summary: Proceedings of the National Academy of Sciences, Volume 122, Issue 42, October 2025.

Str />As Alzheimer's disease (AD) is diagnosed more frequently in women, understanding the role of sex has become a key priority in AD research. However, despite aging being the primary risk factor for AD, it remain...

Read full article:

https://www.pnas.org/doi/abs/10.1073/pnas.2510486122?af=R

Functional organization of the primary motor cortex in psychosis and the potential role of intereffector regions in psychomotor slowing

Sebastian WaltherFlorian WüthrichAnastasia PavlidouNiluja NadesalingamStephan HeckersMelanie G. NuofferVictoria ChapellierKatharina StegmayerLydia V. MaderthanerAlexandra KyrouSofie von KänelStephanie LefebvreaUniversity Hospital of Psychiatry and Psychotherapy Bern, Translational Research Center, University of Bern, 3000 Bern, SwitzerlandbTranslational Imaging Center, Swiss Institute for Translational and Entrepreneurial Medicine, 3000 Bern, SwitzerlandcDepartment of

■ Psychiatry, Psychosomatics, and Psychotherapy, Center of Mental Health, University Hospital of Würzburg, 97080 Würzburg, GermanydDepartment of Psychiatry and Behavioral Science, Vanderbilt University, Nashville, TN 37232eGraduate School for Health Sciences, University of Bern, 3000 Bern, SwitzerlandfUniversity Hospital Inselspital Bern, Department for Neurology, Psychosomatic Medicine, 3000 Bern, SwitzerlandgDepartment of Consultation-Liaison Psychiatry and Psychosomatic Medicine, University Hospital Zurich, University of Zurich, 8091 Zurich, Switzerland



Summary: Proceedings of the National Academy of Sciences, Volume 122, Issue 42, October 2025.

SignificanceRecent literature recommended a revision of the human motor homunculus to include, in addition to the primary motor cortex regions active during movement execution, intereffector regions orchestrat...

https://www.pnas.org/doi/abs/10.1073/pnas.2425388122?af=R

Super-resolution microscopy and deep learning methods: what can they bring to neuroscience: from neuron to 3D spine segmentation

Lydia 1 130 Danglot min words

FRONTIERS NEUROINFORMATICS

Summary: In recent years, advances in microscopy and the development of novel fluorescent probes have significantly improved neuronal imaging. Many neuropsychiatric disorders are characterized by alterations in neuronal arborization, neuronal loss—as seen in Parkinson's disease—or synaptic loss, as in Alzhei...

⊗ Read full article:

https://www.frontiersin.org/articles/10.3389/fninf.2025.1630133

Early heart disease prediction using LV-PSO and Fuzzy Inference Xception Convolution Neural Network on phonocardiogram signals







FRONTIERS NEUROINFORMATICS

Summary: IntroductionHeart disease is one of the leading causes of mortality worldwide, and early detection is crucial for effective treatment. Phonocardiogram (PCG) signals have shown potential in diagnosing cardiovascular conditions. However, accurate classification of PCG signals remains challenging due t...

Read full article:

https://www.frontiersin.org/articles/10.3389/fninf.2025.1655003

Circuit-level modeling of prediction error computation of multi-dimensional features in voluntary actions

Yiling 1 207

FRONTIERS COMPUTATIONAL NEUROSCIENCE

Summary: IntroductionPredictive processing posits that the brain minimizes discrepancies between internal predictions and sensory inputs, offering a unifying account of perception, cognition, and action. In voluntary actions, it is thought to suppress self-generated sensory outcomes. Although sensory mismatc...

https://www.frontiersin.org/articles/10.3389/fncom.2025.1551555

Listening to mom in the neonatal intensive care unit: a randomized trial of increased maternal speech exposure on white matter connectivity in infants born preterm



1 344 min words



FRONTIERS HUMAN NEUROSCIENCE

Summary: ObjectiveEarly speech experiences are presumed to contribute to the development of brain structures involved in processing speech. Previous research has been limited to correlational studies. Here, we conducted a randomized trial with neonates born preterm to determine whether increased exposure to ...

Read full article:

https://www.frontiersin.org/articles/10.3389/fnhum.2025.1673471

Emerging neuromodulation treatments for opioid and stimulant use disorders

Katherine W. 1 115
Scangos min words

FRONTIERS HUMAN NEUROSCIENCE

Summary: Over the past decade, deaths attributable to opioid and stimulant use have risen dramatically. While the U.S. Food and Drug Administration (FDA) has approved three medications for opioid use disorder, there is currently no FDA-approved treatment for stimulant use disorder. Despite the availability o...

https://www.frontiersin.org/articles/10.3389/fnhum.2025.1570555

Adaptive-expert-weight-based load balance scheme for dynamic routing of MoE

Peng 1 197 Cheng min words

FRONTIERS NEUROROBOTICS

Summary: Load imbalance is a major performance bottleneck in training mixture-ofexperts (MoE) models, as unbalanced expert loads can lead to routing collapse. Most existing approaches address this issue by introducing auxiliary loss functions to balance the load; however, the hyperparameters within these lo...

https://www.frontiersin.org/articles/10.3389/fnbot.2025.1590994

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

Maria Carla
Piastra

1
2024-06-14

min

64

words

OOSTENVELD ROBERT

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

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



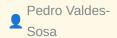
1 72 min words

OOSTENVELD ROBERT

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

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

One hundred years of EEG for brain and behaviour research







OOSTENVELD ROBERT

Read full article:

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

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









OOSTENVELD ROBERT

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

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

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

Krzysztof J
Gorgolewski

1 2024-09-23 min 82
words

OOSTENVELD ROBERT

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

https://pubmed.ncbi.nlm.nih.gov/39308505/?

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



1 65 min words

OOSTENVELD ROBERT

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

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

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



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...

https://pubmed.ncbi.nlm.nih.gov/39870674/?

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



Lyuba
Zehl

Zehl

Zo25-06-26 min

Zostenveld robert

Oostenveld robert

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

Read full article:

https://pubmed.ncbi.nlm.nih.gov/40568426/?

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

Tim M
Tierney

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

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

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Optimal configuration of on-scalp OPMs with fixed channel counts









OOSTENVELD ROBERT

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

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

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

252 PSYCHOMUSICOLOGY words

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

http://doi.org/10.1037/pmu0000295

Psychomusicology: A resounding closing cadence.

1 2024-01-22 min 256 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.

1 261 min 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...

http://doi.org/10.1037/cns0000399

Anomalous experiences are associated with high subconscious connectedness.

1 2025-04-17 min 264 words





CLINICAL NEUROSCIENCE

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

Read full article:

http://doi.org/10.1037/cns0000428

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

1 249 min words

CLINICAL NEUROSCIENCE

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

http://doi.org/10.1037/cns0000397

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

1 2025-07-31 min 268 words





CLINICAL NEUROSCIENCE

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

1 98 CLINICAL NEUROSCIENCE words

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 ...

http://doi.org/10.1037/cns0000414

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





CLINICAL NEUROSCIENCE

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

Read full article:

http://doi.org/10.1037/cns0000384

Mechanistic pathways of acceptance: An experimental study.

1 177 2023-08-17 min words CLINICAL NEUROSCIENCE

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

http://doi.org/10.1037/cns0000371

Why We're Here



1 346 min words



FMHY

Summary: People always want to know what the point of life is. Why are they on earth? What are we doing here? Whats our purpose? 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...

https://fmhy.net/posts/WWH

Claude Skills are awesome, maybe a bigger deal than MCP



Summary: Comments

https://simonwillison.net/2025/Oct/16/claude-skills/

Andrej Karpathy – It will take a decade to work through the issues with agents



Summary: Comments

https://www.dwarkesh.com/p/andrej-karpathy

AMD's Chiplet APU: An Overview of Strix Halo

2 zdw 7 2025-10-18 min words HACKER NEWS

Summary: Article URL: https://chipsandcheese.com/p/amds-chiplet-apu-an-overview-of-strix Comments URL: https://news.ycombinator.com/item? id=45624888">https://news.ycombinator.com/item?id=45624888 Po...

https://chipsandcheese.com/p/amds-chiplet-apu-an-overview-of-strix

Pulmonary Hypertension Detection From Heart Sound Analysis

1 2025-03-28 min words TRANSACTIONS BIOMEDICAL ENGINEERING

Summary: The detection of Pulmonary Hypertension (PH) from the computer analysis of digitized heart sounds is a low-cost and non-invasive solution for early PH detection and screening. We present an extensive cross-domain evaluation methodology with varying animals (humans and porcine animals) and varying au...

Read full article:

Transcranial Focused Ultrasound Modulates Visual Thalamus in a Nonhuman Primate Model



TRANSACTIONS BIOMEDICAL ENGINEERING

Summary: Objective: The thalamus plays a pivotal role as a neural hub, integrating and distributing visual information to cortical regions responsible for visual processing. Transcranial focused ultrasound (tFUS) has emerged as a promising non-invasive brain stimulation technology, enabling modulation of neu...

⊗ Read full article:

http://ieeexplore.ieee.org/document/10950083

An Active Insole to Reduce Plantar Pressure Loading: Using **Predictive Finite Element Driven Soft Hydraulic Actuators to Minimize Plantar Pressure and the Pressure Time Integral for Diabetic Foot Ulceration Risk Management**

1 230 min words





TRANSACTIONS BIOMEDICAL ENGINEERING

Summary: Objective: This article aims to design, manufacture and evaluate an active insole to reduce plantar tissue loading to minimise the risk of diabetic foot ulceration for people living with diabetes. Methods: A prototype hydraulic soft robotic actuating insole was produced. It was controlled by an appr...

Read full article:

Optimizing Non-Intersecting Synthetic Vascular Trees in Nonconvex Organs



1 196 TRANSACTIONS BIOMEDICAL ENGINEERING words

Summary: Objective: The understanding of the mechanisms driving vascular development is still limited. Techniques to generate vascular trees synthetically have been developed to tackle this problem. However, most algorithms are limited to single trees inside convex perfusion volumes. We introduce a new frame...

http://ieeexplore.ieee.org/document/10944261

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1 1 words





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TRANSACTIONS BIOMEDICAL ENGINEERING

⊗ Read full article:

IEEE Transactions on Biomedical Engineering Information for Authors



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http://ieeexplore.ieee.org/document/11173872

IEEE Engineering in Medicine and Biology Society Publication Information



http://ieeexplore.ieee.org/document/11174019

Front Cover



⊗ Read full article:

A Survey of Few-Shot Learning for Biomedical Time Series

1 176 min 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

Longitudinal study of single-pulse TMS in infants with perinatal brain injury: safety and feasibility







FRONTIERS HUMAN NEUROSCIENCE

Summary: IntroductionPerinatal brain injury is a leading cause of cerebral palsy. Singlepulse transcranial magnetic stimulation (spTMS) provides a non-invasive method for investigating motor pathway development; however, data on the safety and feasibility of its repeated use in infants are limited. This stu...

https://www.frontiersin.org/articles/10.3389/fnhum.2025.1686054

Loudness dependence of auditory evoked potentials reflects trait anxiety and harm avoidance in healthy adults: an exploratory study

Makoto
Nishihara

1
2025-10-15
min

181
words

FRONTIERS HUMAN NEUROSCIENCE

Summary: Loudness dependence of auditory-evoked potentials (LDAEP), a neurophysiological measure that reflects central serotonergic activity, is also influenced by the noradrenaline and dopamine systems. While it has been used in investigations of various psychiatric disorders, the fundamental characteristic...

⊗ Read full article:

https://www.frontiersin.org/articles/10.3389/fnhum.2025.1615407

The diagnostic significance of pupillary reflex pathways: insights from classical examination and advanced pupillometry

Joanna 1 212 Konopińska min words

FRONTIERS NEUROSCIENCE

Summary: Background/objectivesThe pupil, a dynamic ocular structure, serves as a critical indicator of neurological and ophthalmological function. This interdisciplinary review explores the anatomical, physiological, and pathological aspects of pupillary reflexes and disorders.ContentEmphasis is placed on th...

Read full article:

https://www.frontiersin.org/articles/10.3389/fnins.2025.1677431

Endovascular management of tandem embolic stroke due to cardioembolic free-floating thrombus: a case report



Summary: BackgroundTandem lesions (TLs), defined as simultaneous occlusions of both extracranial and intracranial arteries, represent a particularly challenging subset of large vessel occlusion (LVO) strokes. While most TLs are attributed to atherosclerotic changes or arterial dissection, a smaller subset or...

https://www.frontiersin.org/articles/10.3389/fnins.2025.1654601

Development of novel signal and spike velocity analysis tools in compact peripheral nerve recording designs

Jonas Klus, Alexander J Boys, Ruben Ruiz-Mateos Serrano, George G Malliaras and Alejandro Carnicer-Lombarte



Summary: Objective. Analysis tools for peripheral nerve recordings remain underdeveloped compared to those for brain signals, limiting the advancement of nerve neurotechnologies for clinical treatments such as closed-loop systems. This study introduces and explores the performance of two novel nerve signal a...

Read full article:

http://iopscience.iop.org/article/10.1088/1741-2552/ae0c3b

BGTransform: a neurophysiologically informed EEG data augmentation framework

Jin Yue, Xiaolin Xiao, Hao Zhang, Minpeng Xu and Dong Ming

1 2025-10-14 min

279 words

JOURNAL NEURAL ENGINEERING

Summary: Objective. Deep learning has emerged as a powerful approach for decoding electroencephalography (EEG)-based brain–computer interface (BCI) signals. However, its effectiveness is often limited by the scarcity and variability of available training data. Existing data augmentation methods often introdu...

⊗ Read full article:

http://iopscience.iop.org/article/10.1088/1741-2552/ae0c3a

Using economic value signals from primate prefrontal cortex in neuro-engineering applications

Tevin C Rouse, Shira M Lupkin and Vincent B McGinty

1 2025-10-14 min 276 words

JOURNAL NEURAL ENGINEERING

Summary: Objective. Brain–machine interface (BMI) research has shown the efficacy of using motor and sensory-related neural signals to assist physically impaired patients. Despite the comparable ability to extract more abstract cognitive signals from the brain, little effort has been devoted to leveraging th...

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Inter-ictal spike rates are not modulated by anti-seizure medication taper in the epilepsy monitoring unit: a tale of two confounders *

Nina J Ghosn, Katherine Walsh, Kevin Xie, Carlos Aguila, Akash R Pattnaik, Devin Ma, Abba M Krieger, Erin C Conrad and Brian Litt

1 2025-10-14 min 273 words

JOURNAL NEURAL ENGINEERING

Summary: Objective. New implantable and wearable devices hold great promise to help patients manage their seizure disorders. One proposed application is measuring the rate of interictal epileptiform discharges as a biomarker of medication levels and seizure risk. This study aims to determine whether interict...

http://iopscience.iop.org/article/10.1088/1741-2552/ae0521

Neuralace: manufacture, parylene-C coating, and mechanical properties

Juan Pablo Botero, Spencer M Roberts, Piotr Mackowiak, Nicholas S Witham, Lukas Selzer, Balaji Srikanthan, Kai Zoschke, Sandeep Negi and Florian Solzbacher



JOURNAL NEURAL ENGINEERING

Summary: Objective. This study investigates the mechanical properties of the Neuralace, a novel ultra-thin, high-channel-count mesh-type subdural electrode array, to characterize its mechanical compatibility with neural tissue (i.e., the forces exerted onto the brain upon conformation) for chronic brain—comp...



http://iopscience.iop.org/article/10.1088/1741-2552/ae0c39

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



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

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



Million 1 46
Phiri 2025-08-26 min words





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

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Explosion-powered eversible tactile displays











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

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

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





1 57 min words

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

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









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

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

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



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

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



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

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





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

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







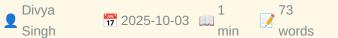


Summary: CONCLUSIONS: These findings emphasize the high prevalence of STIs among MSM and confirm the unusual distribution of HPV types in West Africa, with HPV35 being highly prevalent. A national strategy regarding STI screening and HPV vaccination in this key population is needed.

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



BRAILLE

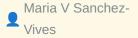
Summary: This study evaluated the effectiveness of an audiosensory performance method in enhancing oral health knowledge and status among visually impaired children aged 6-12 years in the National Capital Region (NCR), Delhi. An interventional study design was used, involving 251 participants equally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

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Cortical modulation by exogenous electric fields is consistent with electric dipoles







TDCS TACS TRNS

Summary: Cortical activity can be modulated by endogenous and exogenous electric fields (EFs). Recent experimental and computational data suggested that endogenous EFmediated effects are compatible with electric dipoles, which contribute to the synchronization of neighboring cortical columns. Consistently, ...

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A deep learning approach to artifact removal in Transcranial **Electrical Stimulation: From shallow methods to deep neural** networks and state space models

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Summary: Transcranial Electrical Stimulation (tES) is a non-invasive neuromodulation technique that generates artifacts in simultaneous EEG recordings, hindering brain activity analysis. This study analyzes Machine Learning (ML) methods for tES noise artifact removal across three stimulation types: tDCS, tAC...

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Diffusion trajectory of atypical morphological development in autism spectrum disorder



1 2025-10-16 min 68

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Summary: Brain development from childhood through adolescence is crucial for understanding autism spectrum disorder (ASD). Yet how functional networks regulate developmental changes in brain morphology remains unclear. Here, we analyzed gray matter volume (GMV) and functional connectivity (FC) in 301 individ...

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Primary stabbing headache in a tertiary headache centre

1 2025-10-16 min 58

TDCS TACS TRNS

Summary: INTRODUCTION: Primary stabbing headache (PSH) is a short-lasting head pain occurring spontaneously in the absence of underlying structural causes. Although it is a frequent disorder, with a reported lifetime prevalence of 35.2% in the general population, its pathophysiological underpinnings remain i...

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



1 63 min words



TDCS TACS TRNS

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

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High-intensity transcranial alternating current stimulation combined with pharmacotherapy for adolescent major depressive disorder: a prospective case report study



Summary: CONCLUSIONS: The combination of HI-tACS and pharmacotherapy demonstrated potential early effects in this small cohort of adolescents with MDD, particularly during the initial phase of treatment. These preliminary findings warrant further investigation through large-scale randomized controlled trials...

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Non-invasive brain stimulation for suicidal ideation: a systematic review and metanalysis of the current literature









TDCS TACS TRNS

Summary: Data suggests that the available therapeutic tools are still insufficient to deal with suicidality. Non-Invasive Brain Stimulation techniques (NIBS) have entered the recognized guidelines for therapies in psychiatry due to the advantages related to safety and tolerability. The purpose of this review...

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Active and sham transcranial direct-current stimulation (tDCS) plus core stability on the knee kinematic and performance of the lower limb of the soccer players with dynamic knee valgus; two armed randomized clinical trial





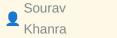


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Summary: Dynamic knee valgus (DKV) is a prevalent risk factor for anterior cruciate ligament (ACL) injuries in soccer players, particularly during noncontact mechanisms. Transcranial direct-current stimulation (tDCS) and core stability exercises have shown promise in enhancing motor control and biomechanical...

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Effect of Precision-based HD-tDCS Over Conventional HDtDCS in Young-onset Mania: Protocol for an Active **Comparison fMRI and TMS Study**







TDCS TACS TRNS

Summary: CONCLUSIONS: This study protocol aims to explore the effect of novel precision-based HD-tDCS in young-onset mania compared to conventional HD-tDCS, thereby allowing for the examination of precision neuromodulation in young-onset mania.

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Progress in the combined application of Brain-Computer Interface and non-invasive brain stimulation for post-stroke motor recovery









TDCS TACS TRNS

Summary: Stroke remains one of the leading causes of disability and death among adults globally. Both Brain-Computer Interface (BCI) and Non-invasive Brain Stimulation (NIBS) have shown significant potential in facilitating motor recovery in stroke patients. The combination of BCI and NIBS enhances brain fun...

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Online Regulation of Task Difficulty based on Neuro- and Motor-feedback to improve engagement in Visual-motor Task





Summary: CONCLUSION: Our findings suggest that the proposed NMF system can enable online neural activity regulation in visual-motor tasks and achieve enhanced integration between cognitive and sensorimotor areas, with the potential to improve the rehabilitation training outcomes.

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Effect of lower limb mirror visual feedback on cortical activation in healthy subjects: a self-controlled randomized trail



Li 1 31 words







Summary: CONCLUSION: LLMVF increases neural activity in the sensory and motor related areas, indicating that LLMVF can promote more activation of brain functional areas, which verifies the top-down positive effect of LLMVF.

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TSFNet: Temporal-Spatial Fusion Network for Hybrid Brain-Computer Interface



Summary: Unimodal brain-computer interfaces (BCIs) often suffer from inherent limitations due to the characteristic of using single modalities. While hybrid BCIs combining electroencephalography (EEG) and functional near-infrared spectroscopy (fNIRS) offer complementary advantages, effectively integrating th...

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Diagnostic Efficacy of Olfactory Function Test Using Functional Near-Infrared Spectroscopy with Machine Learning in Healthy Adults: A Prospective Diagnostic-Accuracy (Feasibility/Validation) Study in Healthy Adults with Algorithm Development



Summary: Background/Objectives: The YSK olfactory function (YOF) test is a culturally adapted psychophysical tool that assesses threshold, discrimination, and identification. This study evaluated whether functional near-infrared spectroscopy (fNIRS) synchronized with routine YOF testing, combined with machin...

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Enhanced Activation in the Dorsolateral Prefrontal Cortex and Inferior Parietal Lobule During Recovery from Body Dissatisfaction



Summary: Previous studies have examined the neural mechanisms of body dissatisfaction. This study aimed to investigate the neural basis of recovery from body dissatisfaction. Sixty-seven young women participated in this study, engaging in a fat talk-a conversation known to induce body dissatisfaction-followe...

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Immediate modulation effects of Tongue Tri-needle on brain functional networks in infratentorial stroke patients with dysphagia: a randomized controlled trial



Summary: CONCLUSION: Infratentorial stroke patients with dysphagia exhibit disrupted functional connectivity within the fronto-temporo-sensorimotor network, which is associated with clinical impairment. Tongue Tri-needle multi-stage, selective reconfiguration of brain functional networks, particularly by mod...

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Riemannian geometry boosts functional near-infrared spectroscopy-based brain-state classification accuracy



Summary: CONCLUSION: To our knowledge, we are the first to demonstrate that the proposed Riemannian-geometry-based classification approach is both powerful and viable for fNIRS data, substantially increasing the accuracy in binary and multi-class classification of brain activation patterns.

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Sensitive and specific fNIRS-based approach for awareness detection in disorders of consciousness: proof of principle in healthy adults







Summary: CONCLUSION: This individualized diagnostic approach may have the potential to significantly enhance diagnostic accuracy for DoCs. It provides a noninvasive, efficient, and objective assessment, potentially reducing the rate of misdiagnosis rates. The practicality and minimal technical requirements o...

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Neural and Behavioral Dynamics of Dyadic Rhythm Coordination across Limb Pairings











Summary: Interpersonal motor synchronization relies on precise neural coordination, yet its underlying brain mechanisms remain incompletely understood. Guided by mutual prediction theory, we investigated how temporal structure and effector-specific constraints shape dyadic coordination. Using functional near...

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Motor imagery in individuals with congenital aphantasia

Magdalena Szubielska

1 71 min words

FNIRS

Summary: Individuals who experience aphantasia have an inability to create sensory mental images, what lead to a range of cognitive and behavioral differences compared to the general population. However, little is known about how this phenomenon affects the creation of motor imagery. Our study aims to check ...

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Advances in flexible high-density microelectrode arrays for brain-computer interfaces



Woon-Hong
Yeo

1
2025-10-16
min

61
BRAIN COMPUTER INTERFACE



Summary: Recent advances in flexible high-density microelectrode arrays (FHD-MEA) have revolutionized brain-computer interfaces (BCIs) by providing high spatial resolution, mechanical compliance, and long-term biocompatibility. This technology enables stable neural recording and precise stimulation, addressi...

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Neural mechanism of the sexually dimorphic winner effect in mice



Summary: The "winner effect," where prior victories increase the likelihood of future wins, profoundly shapes social hierarchy dynamics and competitive motivation. Although human literature suggests a less pronounced winner effect in females, the neural mechanisms underlying these sex differences remain uncl...

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Artificial intelligence and computer-aided diagnosis in diagnostic decisions: 5 questions for medical informatics and human-computer interface research









BRAIN COMPUTER INTERFACE

Summary: OBJECTIVES: Artificial intelligence (AI) has the potential to transform medical informatics by supporting clinical decision-making, reducing diagnostic errors, and improving workflows and efficiency. However, successful integration of AI-based decision support systems depends on careful consideratio...

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Diffusion trajectory of atypical morphological development in autism spectrum disorder

Xujun 1 68
Duan min words

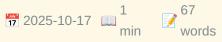
BRAIN COMPUTER INTERFACE

Summary: Brain development from childhood through adolescence is crucial for understanding autism spectrum disorder (ASD). Yet how functional networks regulate developmental changes in brain morphology remains unclear. Here, we analyzed gray matter volume (GMV) and functional connectivity (FC) in 301 individ...

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A Moratorium on Implantable Non-Medical Neurotech Until **Effects on the Mind are Properly Understood**



BRAIN COMPUTER INTERFACE

Summary: The development of non-medical consumer neurotechnology is gaining momentum. As companies chart the course for future implanted and invasive braincomputer interfaces (BCIs) in non-medical populations, the time has come for concrete steps toward their regulation. We propose three measures: First, a ...

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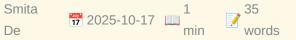
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Simple Prostatectomy is an Effective Option for BPH Patients With Hypocontractile Bladders







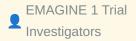


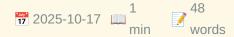
BRAIN COMPUTER INTERFACE

Summary: CONCLUSIONS: This is one of the first studies assessing outcomes of SP in patients with hypocontractile bladders. SP is an effective surgical option for patients with impaired detrusor function including those who are catheter dependent.

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Electromagnetic Stimulation to Reduce Disability After Ischemic Stroke: The EMAGINE Randomized Clinical Trial





BRAIN COMPUTER INTERFACE

Summary: CONCLUSION AND RELEVANCE: This trial found that ENTF therapy is safe. Although the difference between groups was not statistically significant, ENTF therapy may reduce global disability in patients with severe baseline disability after ischemic stroke. These results warrant confirmation in a higher ...

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A different bimodal: case series of patients with a cochlear implant and a contralateral bone conduction implant









BRAIN COMPUTER INTERFACE

Summary: CONCLUSION: The synergy of electrical and vibratory auditory stimulation observed in this case series provided subjective functional benefits and measurable speech perception benefits for some patients, while others experienced minimal or no measurable benefit and ceased usage.

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Progress in the combined application of Brain-Computer Interface and non-invasive brain stimulation for post-stroke motor recovery



Summary: Stroke remains one of the leading causes of disability and death among adults globally. Both Brain-Computer Interface (BCI) and Non-invasive Brain Stimulation (NIBS) have shown significant potential in facilitating motor recovery in stroke patients. The combination of BCI and NIBS enhances brain fun...

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Modulation of brain oscillations by continuous theta burst stimulation in patients with insomnia

Jiahui

1 2025-10-17 min 66 words

BRAIN COMPUTER INTERFACE

Summary: Continuous theta burst stimulation (cTBS) induces long-lasting depression of cortical excitability in motor cortex. In the present study, we explored the modulation of cTBS on resting state electroencephalogram (rsEEG) during wakefulness and subsequent sleep in patients with insomnia disorder. Forty...

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Rant: Python imports are convoluted and easy to get wrong

REDDIT PYTHON

Summary: <!-- SC_OFF --><div class="md">Inspired by the famous "module 'matplotlib' has no attribute 'pyplot'" error, but let's consider another example: numpy. This works: <code>from numpy import ma, ndindex, typing ma.getmask ndindex.ndincr typing.NDArray </code> But t...

Read full article:

https://www.reddit.com/r/Python/comments/109gyxa/rant_python_imports_are_convoluted_and_easy_to/

StageConnect: Behringer protocol is open source

1 2025-10-18 min 2 HACKER NEWS

Summary: Comments

https://github.com/OpenMixerProject/StageConnect

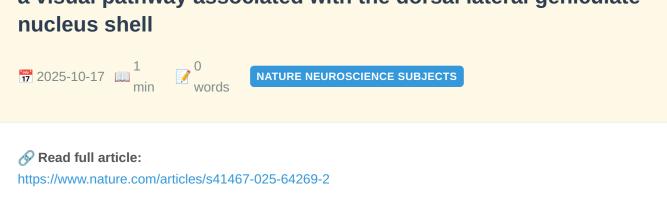
StageConnect: Behringer protocol is open source

1 jdboyd 7 2025-10-18 min words

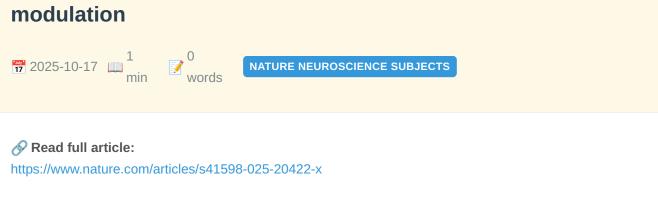
Summary: Article URL: https://github.com/OpenMixerProject/
Comments URL: https://news.ycombinator.com/item?id=45625251">https://news.ycombinator.com/item?id=45625251">https://news.ycombinator.com/item?id=45625251 Points: 3 # Comments: 1

https://github.com/OpenMixerProject/StageConnect

Chronic 40 Hz light flicker mitigates epileptogenesis through a visual pathway associated with the dorsal lateral geniculate nucleus shell



Pleasant odors specifically promote a soothing autonomic response and brain-body coupling through respiratory modulation



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

Maria Carla
Piastra

1
2024-06-14

min

64

words

OOSTENVELD ROBERT

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

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



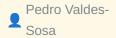
1 72 min words

OOSTENVELD ROBERT

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One hundred years of EEG for brain and behaviour research







OOSTENVELD ROBERT

Read full article:

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









OOSTENVELD ROBERT

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

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

Krzysztof J
Gorgolewski

1 2024-09-23 min 82
words

OOSTENVELD ROBERT

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

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

1 65 min words

OOSTENVELD ROBERT

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

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

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



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...

https://pubmed.ncbi.nlm.nih.gov/39870674/?

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



Lyuba
Zehl

Zehl

Zo25-06-26 min

Zostenveld robert

Oostenveld robert

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

Read full article:

https://pubmed.ncbi.nlm.nih.gov/40568426/?

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

Tim M
Tierney

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

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Optimal configuration of on-scalp OPMs with fixed channel counts







OOSTENVELD ROBERT

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

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

Artificial intelligence and computer-aided diagnosis in diagnostic decisions: 5 questions for medical informatics and human-computer interface research









LOW VISION

Summary: OBJECTIVES: Artificial intelligence (AI) has the potential to transform medical informatics by supporting clinical decision-making, reducing diagnostic errors, and improving workflows and efficiency. However, successful integration of AI-based decision support systems depends on careful consideratio...

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OsiriXGPT: An Innovative AI Co-pilot Plug-In for Seamless **Deployment of Generative AI Models in Scan-to-Scan Reporting Workflows**







LOW VISION

Summary: Generative Artificial Intelligence (GenAI) has the potential to transform radiology by reducing reporting burdens, enhancing diagnostic workflows and facilitating communication of complex radiological information. However, research and adoption remain limited due to the lack of seamless integration ...

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Artificial intelligence-assisted glaucoma detection on color fundus images: with comorbidity and cross-institutional analysis



Summary: CONCLUSION: The proposed AI system can detect glaucoma on standard color fundus photographs with high accuracy across clinical environments and in the presence of comorbid eye diseases. The system may be a practical and affordable tool for large-scale glaucoma screening, particularly in institutions...

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Rapid and accurate prediction of cycloplegic refraction in Chinese children: development and validation of machine learning models



Summary: CONCLUSIONS: The ML models enable cSE prediction based on non-cycloplegic refraction data and ocular biometric parameters, providing a fast, practical method for estimating refractive error. Multicenter validation and targeted oversampling of rare refractive subgroups are required, however, before r...

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3-Year Comparison Of Two Mix-And-Match Strategies: **Enhanced Monofocal And Trifocal Versus Enhanced Monofocal And Trifocal EDOF IOLs**









Summary: CONCLUSIONS: Combined implantation of enhanced monofocal and trifocal/ trifocal EDOF IOLs yields excellent distance and intermediate vision. Near visual acuity and spectacle independence was higher in the Isopure-HP group. Low incidence of photic phenomena and high patient satisfaction highlight the ...

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Donor Diabetes and 1-Year Descemet Membrane Endothelial Keratoplasty Success Rate: A Randomized Clinical Trial









LOW VISION

Summary: CONCLUSIONS AND RELEVANCE: The 1-year success rate in eyes undergoing DMEK with successfully prepared tissue was very high regardless of donor diabetes status. These results, supported by the separately reported finding that endothelial cell loss and cornea morphometry after 1 year were not affected...

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JOANet: An Integrated Joint Optimization Architecture Making Medical Image Segmentation Really Helped by Superresolution Pre-processing

Yong-Jie
Li

2025-10-17

min

63

words

Low VISION

Summary: Conventional computer vision pipelines typically treat low-level enhancement and high-level semantic tasks as isolated processes, focusing on optimizing enhancement for perceptual quality rather than computational utility, neglecting semantic task requirements. To bridge this gap, this paper propose...

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Light-induced FTIR spectroscopy of visual rhodopsin microcrystals grown in lipidic cubic phase

Kota Katayama 1 67 min words

LOW VISION

Summary: Time-resolved X-ray crystallographic analysis of mammalian visual rhodopsin has allowed to visualize the cis-to-trans isomerization of the retinal chromophore, a pivotal event in the early stages of vision, in a temporal and atomic resolution. This achievement provides a foundation for visualizing t...

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A reevaluation of the visual phantom illusion and its impact on the motion aftereffect



Frank 1 77
Tong min words

LOW VISION

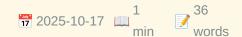
Summary: The constructive nature of motion perception has been highlighted in studies of the visual phantom illusion. Visual phantoms can occur when two low-contrast collinear drifting gratings are separated by a blank gap, leading to the ghostly impression of drifting stripes that extend through the gap. Al...

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Comprehensive deep learning-assisted multi-condition analysis of knee MRI studies improves resident radiologist performance









LOW VISION

Summary: CONCLUSION: Our deep-learning model performed well across diverse knee conditions and effectively assisted radiology residents. Future work should focus on more fine-grained predictions for subtle or rare conditions to enable comprehensive joint assessment in clinical practice.

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Advances in flexible high-density microelectrode arrays for brain-computer interfaces

Woon-Hong
Yeo

1
2025-10-16 min

61
BRAIN COMPUTER INTERFACE

Summary: Recent advances in flexible high-density microelectrode arrays (FHD-MEA) have revolutionized brain-computer interfaces (BCIs) by providing high spatial resolution, mechanical compliance, and long-term biocompatibility. This technology enables stable neural recording and precise stimulation, addressi...

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Neural mechanism of the sexually dimorphic winner effect in mice

1 70 min words





BRAIN COMPUTER INTERFACE

Summary: The "winner effect," where prior victories increase the likelihood of future wins, profoundly shapes social hierarchy dynamics and competitive motivation. Although human literature suggests a less pronounced winner effect in females, the neural mechanisms underlying these sex differences remain uncl...

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Artificial intelligence and computer-aided diagnosis in diagnostic decisions: 5 questions for medical informatics and human-computer interface research







BRAIN COMPUTER INTERFACE

Summary: OBJECTIVES: Artificial intelligence (AI) has the potential to transform medical informatics by supporting clinical decision-making, reducing diagnostic errors, and improving workflows and efficiency. However, successful integration of AI-based decision support systems depends on careful consideratio...

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Diffusion trajectory of atypical morphological development in autism spectrum disorder

Xujun 1 68
Duan min words

BRAIN COMPUTER INTERFACE

Summary: Brain development from childhood through adolescence is crucial for understanding autism spectrum disorder (ASD). Yet how functional networks regulate developmental changes in brain morphology remains unclear. Here, we analyzed gray matter volume (GMV) and functional connectivity (FC) in 301 individ...

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A Moratorium on Implantable Non-Medical Neurotech Until **Effects on the Mind are Properly Understood**



2025-10-17 min 67 words





BRAIN COMPUTER INTERFACE

Summary: The development of non-medical consumer neurotechnology is gaining momentum. As companies chart the course for future implanted and invasive braincomputer interfaces (BCIs) in non-medical populations, the time has come for concrete steps toward their regulation. We propose three measures: First, a ...

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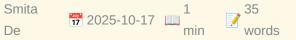
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Simple Prostatectomy is an Effective Option for BPH Patients With Hypocontractile Bladders







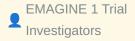


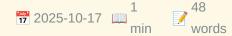
BRAIN COMPUTER INTERFACE

Summary: CONCLUSIONS: This is one of the first studies assessing outcomes of SP in patients with hypocontractile bladders. SP is an effective surgical option for patients with impaired detrusor function including those who are catheter dependent.

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Electromagnetic Stimulation to Reduce Disability After Ischemic Stroke: The EMAGINE Randomized Clinical Trial





BRAIN COMPUTER INTERFACE

Summary: CONCLUSION AND RELEVANCE: This trial found that ENTF therapy is safe. Although the difference between groups was not statistically significant, ENTF therapy may reduce global disability in patients with severe baseline disability after ischemic stroke. These results warrant confirmation in a higher ...

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A different bimodal: case series of patients with a cochlear implant and a contralateral bone conduction implant







BRAIN COMPUTER INTERFACE

Summary: CONCLUSION: The synergy of electrical and vibratory auditory stimulation observed in this case series provided subjective functional benefits and measurable speech perception benefits for some patients, while others experienced minimal or no measurable benefit and ceased usage.

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Progress in the combined application of Brain-Computer Interface and non-invasive brain stimulation for post-stroke motor recovery



Summary: Stroke remains one of the leading causes of disability and death among adults globally. Both Brain-Computer Interface (BCI) and Non-invasive Brain Stimulation (NIBS) have shown significant potential in facilitating motor recovery in stroke patients. The combination of BCI and NIBS enhances brain fun...

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+e462414

Modulation of brain oscillations by continuous theta burst stimulation in patients with insomnia

Jiahui

1 66 min words

BRAIN COMPUTER INTERFACE

Summary: Continuous theta burst stimulation (cTBS) induces long-lasting depression of cortical excitability in motor cortex. In the present study, we explored the modulation of cTBS on resting state electroencephalogram (rsEEG) during wakefulness and subsequent sleep in patients with insomnia disorder. Forty...

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The Majority AI View

● Bogdanp 7 2025-10-18 min 13 words

HACKER NEWS

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

1 214 min 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...

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

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





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...

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

Neural network topologies supporting individual variations in vividness of visual imagery

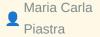


NEUROIMAGE

Summary: Publication date: 1 November 2025Source: NeuroImage, Volume 321Author(s): Timo L. Kvamme, Massimo Lumaca, Claude J. Bajada, Signe Dall Gregersen, Justyna Hobot, Dunja Paunovic, Michal Wierzchon, Blanka Zana, Juha Silvanto, Kristian Sandberg

https://www.sciencedirect.com/science/article/pii/S1053811925005233?dgcid=rss_sd_all

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







OOSTENVELD ROBERT

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

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

Julius

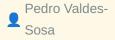
1 72 2024-07-02 min words OOSTENVELD ROBERT

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

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One hundred years of EEG for brain and behaviour research







OOSTENVELD ROBERT

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

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

Richard J A van

1 65 min words

OOSTENVELD ROBERT

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

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

Krzysztof J Gorgolewski 1 82 min words

OOSTENVELD ROBERT

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

https://pubmed.ncbi.nlm.nih.gov/39308505/?

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

Fanny Quandt

1 65 min words

OOSTENVELD ROBERT

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

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

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



1 70 min words

OOSTENVELD ROBERT

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

https://pubmed.ncbi.nlm.nih.gov/39870674/?

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

Lyuba
Zehl

Zehl

Zo25-06-26 min

Zostenveld robert

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

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

1 74 min words



OOSTENVELD ROBERT

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

Read full article:

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

Optimal configuration of on-scalp OPMs with fixed channel counts

Robert 1 69
Oostenveld min words

OOSTENVELD ROBERT

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

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

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









TACTILE ACUITY

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

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

Hiroyuki
Kajimoto

75 TACTILE ACUITY words

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

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



Leah R
Bent 1 69
words

TACTILE ACUITY

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

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Directional vibro-tactile hazard warnings for drivers with vision impairments

Alex R

Bowers

1

2025-07-02

min

80

words

TACTILE ACUITY

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

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







TACTILE ACUITY

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

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

Eric 1 2025-08-24 min words TACTILE ACUITY

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

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



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

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

Sviatoslav N Bagriantsev

1 2025-09-13 min 58 TACTILE ACUITY words

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

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

Greenspon

1 86 min words

TACTILE ACUITY

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

Runar 1 2025-09-27 min 65 Words TACTILE ACUITY

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

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



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

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





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

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Explosion-powered eversible tactile displays



1 64 min words





BRAILLE

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

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

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

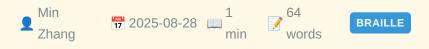


Summary: Electronic skins (e-skins) incorporating island architectures represent a promising platform for strain-insensitive tactile sensing by mechanically decoupling sensing units from deformations. However, conventional island designs encounter stress concentration issues caused by inherent modulus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

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



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

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



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

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



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

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





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

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









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

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







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

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Spray Cooling - Recreating Supercomputer Cooling on a **Desktop CPU [video]**





HACKER NEWS

Summary: Comments



https://www.youtube.com/watch?v=yEBSuk20gvc

A nap before retrieval reduces false identifications in target absent lineups



Read full article:

https://www.nature.com/articles/s41598-025-20471-2

Cognitive, neuroimaging, and genetic insights on the interthalamic adhesion from a large cohort study of 591 subjects



https://www.nature.com/articles/s41598-025-20469-w

A frugal Spiking Neural Network for unsupervised multivariate temporal pattern classification and multichannel spike sorting



https://www.nature.com/articles/s41467-025-64231-2

Interindividual differences in auditory processing moderate the effect of auditory-motor coupling on paired-associate learning



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https://www.nature.com/articles/s41598-025-23360-w

Recurrent issues with deep neural network models of visual recognition



https://www.nature.com/articles/s41598-025-20245-w

Explicit error coding can mediate gain recalibration in continuous bump attractor networks



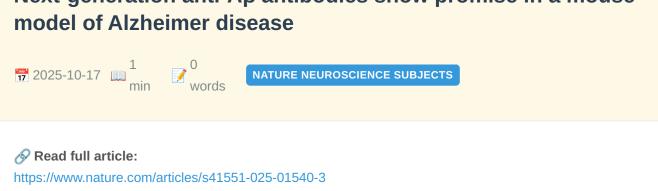
https://www.nature.com/articles/s41467-025-63817-0

ALZET pump implantation in mice for chronic drug delivery to the cochlea



https://www.nature.com/articles/s41598-025-20395-x

Next-generation anti-Aß antibodies show promise in a mouse



C9orf72 hexanucleotide repeat expansions impair microglial response in ALS







Summary: Nature Neuroscience, Published online: 14 October 2025; www.nature.com/articles/s41593-025-02075-1">doi:10.1038/s41593-025-02075-1 p>This study shows that C9orf72 mutations impair immune activation in ALS, affecting how brain cells communicate, and highlights key differences...



https://www.nature.com/articles/s41593-025-02075-1

Region-specific drivers of CSF mobility measured with MRI in humans







NATURE NEUROSCIENCE

Summary: Nature Neuroscience, Published online: 14 October 2025; www.nature.com/articles/s41593-025-02073-3">doi:10.1038/s41593-025-02073-3</ p>Brain clearance mechanisms are challenging to visualize in humans. Using magnetic resonance imaging, the authors noninvasively mapped cerebros...



https://www.nature.com/articles/s41593-025-02073-3

Science must break its silence to rebuild public trust

Michael L.

1 95 min words

NATURE NEUROSCIENCE

Summary: Nature Neuroscience, Published online: 14 October 2025; www.nature.com/articles/s41593-025-02092-0">doi:10.1038/s41593-025-02092-0</ p>This Comment calls on scientists to acknowledge how insufficient communication and limited engagement beyond academia have deepened the divide...

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Using noise to distinguish between system and observer effects in multimodal neuroimaging

Brázdil

1 196 min words

FRONTIERS COMPUTATIONAL NEUROSCIENCE

Summary: IntroductionIt has become increasingly common to record brain activity simultaneously at more than one spatiotemporal scale. Here, we address a central question raised by such cross-scale datasets: do they reflect the same underlying dynamics observed in different ways, or different dynamics observe...

https://www.frontiersin.org/articles/10.3389/fncom.2025.1693279

Advancing epileptic seizure recognition through bidirectional LSTM networks







FRONTIERS COMPUTATIONAL NEUROSCIENCE

Summary: Seizure detection in a timely and accurate manner remains a primary challenge in clinical neurology, affecting diagnosis planning and patient management. Most of the traditional methods rely on feature extraction and traditional machine learning techniques, which are not efficient in capturing the d...

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Aperiodic brain activity changes in patients with stroke following virtual reality-based upper limb robotic rehabilitation: a pilot Randomized Controlled Trial







FRONTIERS HUMAN NEUROSCIENCE

Summary: IntroductionStroke-related brain changes have traditionally been studied through oscillatory electroencephalographic (EEG) activity, but recent evidence highlights the value of aperiodic components. This pilot randomized controlled trial aimed to assess stroke-related aperiodic EEG changes following...



https://www.frontiersin.org/articles/10.3389/fnhum.2025.1671804

Abnormal connection between the posterior insula and the gastric network among patients with functional constipation

Ming 1 254

FRONTIERS HUMAN NEUROSCIENCE

Summary: BackgroundFunctional constipation (FCon) is frequently accompanied by psychological disorders, implicating the interaction between the gastrointestinal symptom and brain dysfunction in FCon. Recent studies combining electrogastrogram and restingstate functional magnetic resonance imaging (fMRI) hav...

https://www.frontiersin.org/articles/10.3389/fnhum.2025.1624489

Glymphatic system and mild traumatic brain injury: a mini review





FRONTIERS NEUROSCIENCE

Summary: Since the discovery of the glymphatic system in 2012, research on this brainwide fluid exchange pathway has focused on understanding its role in different neurological diseases. Mild traumatic brain injury (mTBI) is a prevalent, yet often undiagnosed, condition that increases the risk of developing...

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Spiking neural networks for EEG signal analysis using wavelet transform

Ying 1 171
Liu min words

FRONTIERS NEUROSCIENCE

Summary: IntroductionBrain-computer interfaces (BCIs) leverage EEG signal processing to enable human-machine communication and have broad application potential. However, existing deep learning-based BCI methods face two critical limitations that hinder their practical deployment: reliance on manual EEG featu...

https://www.frontiersin.org/articles/10.3389/fnins.2025.1652274

Nicotine and neuronal nicotinic acetylcholine receptors: unraveling the mechanisms of nicotine addiction



1 167 min words





FRONTIERS NEUROSCIENCE

Summary: Nicotine, recognized as the principal addictive component in tobacco, is mechanistically linked to its interaction with neuronal nicotinic acetylcholine receptors (nAChRs). nAChRs are ligand-gated ion channels composed of five transmembrane subunits, with the $\alpha 4\beta 2$ receptor subtype being the most com...

https://www.frontiersin.org/articles/10.3389/fnins.2025.1670883

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

Thomas
Hummel

Thomas

Tactile Acuity

Thomas

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1 75
min words

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Leah R

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Paula Anne Newman-Casev

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1 2025-09-13 min 58 words

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Charles M

Greenspon

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words

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Cortical modulation by exogenous electric fields is consistent with electric dipoles

Maria V Sanchez-

1 65 min words

TDCS TACS TRNS

Summary: Cortical activity can be modulated by endogenous and exogenous electric fields (EFs). Recent experimental and computational data suggested that endogenous EFmediated effects are compatible with electric dipoles, which contribute to the synchronization of neighboring cortical columns. Consistently, ...

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A deep learning approach to artifact removal in Transcranial Electrical Stimulation: From shallow methods to deep neural networks and state space models



1 67 min words

TDCS TACS TRNS

Summary: Transcranial Electrical Stimulation (tES) is a non-invasive neuromodulation technique that generates artifacts in simultaneous EEG recordings, hindering brain activity analysis. This study analyzes Machine Learning (ML) methods for tES noise artifact removal across three stimulation types: tDCS, tAC...

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Diffusion trajectory of atypical morphological development in autism spectrum disorder

Xujun 1 68 min words

TDCS TACS TRNS

Summary: Brain development from childhood through adolescence is crucial for understanding autism spectrum disorder (ASD). Yet how functional networks regulate developmental changes in brain morphology remains unclear. Here, we analyzed gray matter volume (GMV) and functional connectivity (FC) in 301 individ...

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utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=143rKCPgMwbasrj66gQ1 r1ebioUg42SIGRyVKSoW4m6X-ecQ00&fc=None&ff=20251018004128&v=2.18.0.post9+e462414

Primary stabbing headache in a tertiary headache centre

1 58 min words



TDCS TACS TRNS

Summary: INTRODUCTION: Primary stabbing headache (PSH) is a short-lasting head pain occurring spontaneously in the absence of underlying structural causes. Although it is a frequent disorder, with a reported lifetime prevalence of 35.2% in the general population, its pathophysiological underpinnings remain i...

https://pubmed.ncbi.nlm.nih.gov/41102620/?

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

Andrew 1 63
Flood min words

TDCS TACS TRNS

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

https://pubmed.ncbi.nlm.nih.gov/41103728/?

utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=143rKCPgMwbasrj66gQ1 r1ebioUg42SIGRyVKSoW4m6X-ecQ00&fc=None&ff=20251018004128&v=2.18.0.post9+e462414

High-intensity transcranial alternating current stimulation combined with pharmacotherapy for adolescent major depressive disorder: a prospective case report study



Li 1 50 Kuang min words

TDCS TACS TRNS

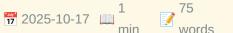
Summary: CONCLUSIONS: The combination of HI-tACS and pharmacotherapy demonstrated potential early effects in this small cohort of adolescents with MDD, particularly during the initial phase of treatment. These preliminary findings warrant further investigation through large-scale randomized controlled trials...

Read full article:

https://pubmed.ncbi.nlm.nih.gov/41103740/?

Non-invasive brain stimulation for suicidal ideation: a systematic review and metanalysis of the current literature





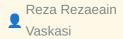


TDCS TACS TRNS

Summary: Data suggests that the available therapeutic tools are still insufficient to deal with suicidality. Non-Invasive Brain Stimulation techniques (NIBS) have entered the recognized guidelines for therapies in psychiatry due to the advantages related to safety and tolerability. The purpose of this review...

https://pubmed.ncbi.nlm.nih.gov/41103967/?

Active and sham transcranial direct-current stimulation (tDCS) plus core stability on the knee kinematic and performance of the lower limb of the soccer players with dynamic knee valgus; two armed randomized clinical trial



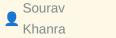


TDCS TACS TRNS

Summary: Dynamic knee valgus (DKV) is a prevalent risk factor for anterior cruciate ligament (ACL) injuries in soccer players, particularly during noncontact mechanisms. Transcranial direct-current stimulation (tDCS) and core stability exercises have shown promise in enhancing motor control and biomechanical...

https://pubmed.ncbi.nlm.nih.gov/41103970/?

Effect of Precision-based HD-tDCS Over Conventional HDtDCS in Young-onset Mania: Protocol for an Active **Comparison fMRI and TMS Study**



1 31 min words



TDCS TACS TRNS

Summary: CONCLUSIONS: This study protocol aims to explore the effect of novel precision-based HD-tDCS in young-onset mania compared to conventional HD-tDCS, thereby allowing for the examination of precision neuromodulation in young-onset mania.

https://pubmed.ncbi.nlm.nih.gov/41104323/? utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=143rKCPgMwbasrj66gQ1 r1ebioUg42SIGRyVKSoW4m6X-ecQ00&fc=None&ff=20251018004128&v=2.18.0.post9+e462414

Progress in the combined application of Brain-Computer Interface and non-invasive brain stimulation for post-stroke motor recovery







TDCS TACS TRNS

Summary: Stroke remains one of the leading causes of disability and death among adults globally. Both Brain-Computer Interface (BCI) and Non-invasive Brain Stimulation (NIBS) have shown significant potential in facilitating motor recovery in stroke patients. The combination of BCI and NIBS enhances brain fun...

https://pubmed.ncbi.nlm.nih.gov/41106071/?

Artificial General Intelligence for Medical Imaging Analysis

1 159 min 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, ...

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

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

1 2004-11-29 min 200 words

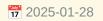


REVIEWS BIOMEDICAL ENGINEERING

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...

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

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





2025-01-28 min 1 REVIEWS BIOMEDICAL ENGINEERING words



http://ieeexplore.ieee.org/document/10856220

Table of Contents







REVIEWS BIOMEDICAL ENGINEERING

http://ieeexplore.ieee.org/document/10856214

IEEE Engineering in Medicine and Biology Society





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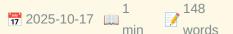
REVIEWS BIOMEDICAL ENGINEERING



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

Reaching for a domain-general syntax: processing linguistic structures and grasping an object with a tool share similar neural codes in the basal ganglia.

Thibault, S., Py, R., Koun, E., Salemme, R., BOULENGER, V., Roy, A. C., Brozzoli, C.

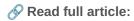






BIORXIV NEUROSCIENCE

Summary: Are actions organized like sentences? Recent evidence showed reciprocal transfer between tool use and syntactic comprehension, reflecting shared basal ganglia (BG) resources for action and language. The proposed mechanism is that embedding a tool into the motor plan increases the hierarchical struct...



https://www.biorxiv.org/content/10.1101/2025.10.17.683107v1?rss=1

Mnemonic maps of visual space in human prefrontal cortex

Lu, Z., Dowdle, L. T., Kay, K. N., Curtis, C.

E. min 150
words

BIORXIV NEUROSCIENCE

Summary: Neural theories of how the prefrontal cortex (PFC) supports working memory rely on evidence from decades of pioneering macaque research. In some respects, efforts to translate these animal models of working memory in human PFC using neuroimaging have largely failed. One possible explanation, before ...

https://www.biorxiv.org/content/10.1101/2025.10.17.683147v1?rss=1

Gradual proactive regulation of body state by reinforcement learning of homeostasis

Fujiwara, M., Naoki,
H.

Fujiwara, M., Naoki,
min

1

1

1

1

199

Words

Summary: Living systems maintain physiological variables such as temperature, blood pressure, and glucose within narrow ranges; a process known as homeostasis. Homeostasis involves not only reactive feedback but also anticipatory adjustments shaped by experience. Prior homeostatic reinforcement learning (HRL...

Read full article:

https://www.biorxiv.org/content/10.1101/2025.10.17.682979v1?rss=1

Specific and converging modulation of the CRH and noradrenergic systems across drug classes and natural rewards in an incubation of seeking paradigm

Roura-Martinez, D., Ucha, M., Moreno-Fernandez, M., Castillo, C. A., Ballesteros-Yanez, I., Marcos, A., Ambrosio, E., Higuera-Matas, A. A.

1 196 BIORXIV NEUROSCIENCE words

Summary: Stress is known to play a critical role in relapse to drug use as well as in food craving. Craving itself is a key determinant of relapse, and cue-induced drug craving has been shown to increase, or incubate, over time for certain drugs such as cocaine and nicotine, though this effect is less consis...

Read full article:

https://www.biorxiv.org/content/10.1101/2025.10.17.683095v1?rss=1

Attentional disengagement during external and internal distractions reduces neural speech tracking in background noise

Ren, Y., Cui, M. E., Herrmann,
B. 237

Words

BIORXIV NEUROSCIENCE

Summary: Within-situation disengagement - the mental withdrawal during conversations in acoustically challenging environments - is a common experience of older people with hearing difficulties. Yet, most research on the neural mechanisms of attentional disengagement from speech listening has focused on the d...

https://www.biorxiv.org/content/10.1101/2025.10.17.683146v1?rss=1

Cortical Iron in Schizophrenia: A Quantitative Susceptibility Mapping and Diffusion Tensor Imaging MRI Study

Vano, L. J., Sedlacik, J., Kaar, S. J., Rutigliano, G., Carr, R., Berry, A., Statton, B., Fazlollahi, A., Howes, O. D., McCutcheon, R. A.

1 2025-10-17 min 236 BIORXIV NEUROSCIENCE

Summary: Background and Hypothesis Cognitive and negative symptoms in schizophrenia remain poorly treated. Iron dysregulation has been implicated as a potential mechanism underlying cognitive dysfunction and schizophrenia. While elevated postmortem iron in Brodmann areas 10-11 has been linked to schizophreni...

https://www.biorxiv.org/content/10.1101/2025.10.17.683066v1?rss=1

DLK inhibition has sex-specific effects on neuroprotection and locomotor recovery after spinal cord injury

Aldrich, J. C., Alman, S. M., Lee, S. E., Scheinfeld, A. R., Zhang, C. C., Pike, A. L., Bremner, F. C., Calderon, O., Goodwani, S., Ray, W. J., Gaudet, A. D.

1 2025-10-17 min 248 BIORXIV NEUROSCIENCE





Summary: Spinal cord injury (SCI) causes devastating functional deficits, in part due to neuroinflammation, oxidative stress, and excitotoxicity that drive death of lesion-adjacent viable neurons. One signaling protein that promotes neuronal apoptosis and activates stress-responsive genes is dual leucine zip...

⊗ Read full article:

https://www.biorxiv.org/content/10.1101/2025.10.17.683054v1?rss=1

Innovative 3D-image analysis of cerebellar vascularization highlights angiogenic gene dysregulations in a murine model of apnea of prematurity

Rodriguez-Duboc, A., Racine, C., Basille-Dugay, M., Vaudry, D., Gonzalez, B., Burel, D.

2025-10-17

1 min



BIORXIV NEUROSCIENCE

Summary: Apnea of prematurity (AOP) affects 50% of preterm infants causing intermittent hypoxia (IH), which can lead to long-term neurodevelopmental deficits. Cerebellar abnormalities have been observed in AOP but the relationship between vascular alterations and neural development remains unclear. This stud...

https://www.biorxiv.org/content/10.1101/2025.10.17.683055v1?rss=1

C. elegans astrocytes mature in two phases from lineally distinct progenitors through CEH-43/DLX-mediated convergent transcription



Summary: Astrocytic glia regulate brain assembly, synapse formation/activity, neuronal energetics, and brain metabolism. Gene programs driving astrocyte specification are only partly understood. Here, we use lineage-restricted single-cell RNA sequencing to uncover a two-phase developmental program for C. ele...

https://www.biorxiv.org/content/10.1101/2025.10.17.682973v1?rss=1

Hierarchical regulation of cerebellar neurogenesis by Sin3Amediated gene repression



BIORXIV NEOROSCIENCE

Summary: Cerebellar granule cells (GCs) are critical for motor and cognitive functions. Lineage tracing studies have identified a hierarchical developmental progression of GC neurogenesis, transitioning from Sox2+ stem-like cells to Atoh1+ rapidly proliferating granule cell precursors (GCPs), and ultimately ...

https://www.biorxiv.org/content/10.1101/2025.10.17.683101v1?rss=1

Effectiveness of Electroencephalographic Neurofeedback for Parkinson's Disease: A Systematic Review and Meta-Analysis

Andrew Cooke

1 63 min words

BRAIN COMPUTER INTERFACE

Summary: Background: Electroencephalographic (EEG) neurofeedback training is gaining traction as a non-pharmacological treatment option for Parkinson's disease (PD). This paper reports the first pre-registered, integrated systematic review and meta-analysis of studies examining the effects of EEG neurofeedba...

https://pubmed.ncbi.nlm.nih.gov/41096009/?

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A Novel Grasping Robot Control Method Using Motion **Execution BCI Combining Knowledge Reasoning**



1 68 min words



BRAIN COMPUTER INTERFACE

Summary: Recently, with the growing number of disabled people, brain-controlled technology offers a novel way to help patients restore their daily abilities. However, the conventional brain-controlled system based on the motion related task lacks intelligence in real-world environments. To address above prob...

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Advances in flexible high-density microelectrode arrays for brain-computer interfaces

Woon-Hong
Yeo

1
2025-10-16 min

61
BRAIN COMPUTER INTERFACE

Summary: Recent advances in flexible high-density microelectrode arrays (FHD-MEA) have revolutionized brain-computer interfaces (BCIs) by providing high spatial resolution, mechanical compliance, and long-term biocompatibility. This technology enables stable neural recording and precise stimulation, addressi...

https://pubmed.ncbi.nlm.nih.gov/41100980/?

utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1rSUu-tbw4049Wgf RdKXdtNCvGW0IVBZFpHe7zaN4k4DwoD5&fc=None&ff=20251018002208&v=2.18.0.post9 +e462414

Neural mechanism of the sexually dimorphic winner effect in mice

1 70 min words

BRAIN COMPUTER INTERFACE

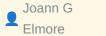
Summary: The "winner effect," where prior victories increase the likelihood of future wins, profoundly shapes social hierarchy dynamics and competitive motivation. Although human literature suggests a less pronounced winner effect in females, the neural mechanisms underlying these sex differences remain uncl...

⊗ Read full article:

https://pubmed.ncbi.nlm.nih.gov/41101308/?

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Artificial intelligence and computer-aided diagnosis in diagnostic decisions: 5 questions for medical informatics and human-computer interface research









BRAIN COMPUTER INTERFACE

Summary: OBJECTIVES: Artificial intelligence (AI) has the potential to transform medical informatics by supporting clinical decision-making, reducing diagnostic errors, and improving workflows and efficiency. However, successful integration of AI-based decision support systems depends on careful consideratio...

+e462414

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Diffusion trajectory of atypical morphological development in autism spectrum disorder

Xujun 1 68
Duan min words

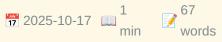
BRAIN COMPUTER INTERFACE

Summary: Brain development from childhood through adolescence is crucial for understanding autism spectrum disorder (ASD). Yet how functional networks regulate developmental changes in brain morphology remains unclear. Here, we analyzed gray matter volume (GMV) and functional connectivity (FC) in 301 individ...

https://pubmed.ncbi.nlm.nih.gov/41102402/?

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A Moratorium on Implantable Non-Medical Neurotech Until **Effects on the Mind are Properly Understood**



BRAIN COMPUTER INTERFACE

Summary: The development of non-medical consumer neurotechnology is gaining momentum. As companies chart the course for future implanted and invasive braincomputer interfaces (BCIs) in non-medical populations, the time has come for concrete steps toward their regulation. We propose three measures: First, a ...

https://pubmed.ncbi.nlm.nih.gov/41104262/?

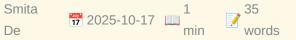
utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1rSUu-tbw4049Wgf RdKXdtNCvGW0lVBZFpHe7zaN4k4DwoD5&fc=None&ff=20251018002208&v=2.18.0.post9 +e462414

Simple Prostatectomy is an Effective Option for BPH Patients With Hypocontractile Bladders







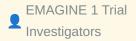


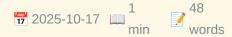
BRAIN COMPUTER INTERFACE

Summary: CONCLUSIONS: This is one of the first studies assessing outcomes of SP in patients with hypocontractile bladders. SP is an effective surgical option for patients with impaired detrusor function including those who are catheter dependent.

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Electromagnetic Stimulation to Reduce Disability After Ischemic Stroke: The EMAGINE Randomized Clinical Trial





BRAIN COMPUTER INTERFACE

Summary: CONCLUSION AND RELEVANCE: This trial found that ENTF therapy is safe. Although the difference between groups was not statistically significant, ENTF therapy may reduce global disability in patients with severe baseline disability after ischemic stroke. These results warrant confirmation in a higher ...

https://pubmed.ncbi.nlm.nih.gov/41105410/?
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+e462414

A different bimodal: case series of patients with a cochlear implant and a contralateral bone conduction implant

Mark Chung

1 37 min words

BRAIN COMPUTER INTERFACE

Summary: CONCLUSION: The synergy of electrical and vibratory auditory stimulation observed in this case series provided subjective functional benefits and measurable speech perception benefits for some patients, while others experienced minimal or no measurable benefit and ceased usage.

https://pubmed.ncbi.nlm.nih.gov/41105834/?

utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1rSUu-tbw4049Wgf RdKXdtNCvGW0IVBZFpHe7zaN4k4DwoD5&fc=None&ff=20251018002208&v=2.18.0.post9 +e462414

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

1 175 min 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:

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

1 198 min words

CLINICAL NEUROSCIENCE

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

№ Read full article:

http://doi.org/10.1037/cns0000366

Mental pain, boredom, and diffuse nociception.

1 237 min words





CLINICAL NEUROSCIENCE

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

Read full article:

Monolinguals outperform bilinguals in language but not executive function in aging and cognitive impairment.

1 2025-07-03 min 267 NEUROPSYCHOLOGY

Summary: Objective: People with subjective cognitive decline (SCD) self-report declining cognitive function, although objective cognitive performance remains normal. SCD is a risk factor for mild cognitive impairment (MCI) and dementia. Previous research has found differences in cognitive performance in bili...

http://doi.org/10.1037/neu0001028

End-stage kidney disease patients exhibited slower responses to rapidly presented visual stimuli when compared with healthy controls.



Summary: Objective: Using a go/no-go test, we showed that end-stage kidney disease (ESKD) patients have a slower average reaction time (RT) compared with their respective controls. This study aimed to investigate whether the RT of ESKD patients worsened throughout the test and whether RTs were influenced by ...

Read full article:

Validation of immersive virtual reality line and baguette bisection tasks for the assessment of unilateral spatial neglect.

1 2025-09-15 min 258 words NEUROPSYCHOLOGY

Summary: Objective: Unilateral spatial neglect (USN) assessment is commonly based on paper-and-pencil tests, including the line bisection task. However, this task lacks sensitivity and does not reflect the symptomatic heterogeneity of USN patients, such as difficulties in extrapersonal space or encountered i...

⊗ Read full article:

http://doi.org/10.1037/neu0001024

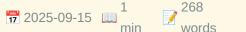
The Reading the Mind in the Eyes Test for adults: A refined version in Spanish.

1 193 NEUROPSYCHOLOGY words

Summary: Objective: The Reading of the Mind in the Eyes Test (RMET) is widely used to assess theory of mind, but its validity has recently been questioned. This study aimed to present a refined Spanish version of the test and examine its psychometric properties. Method: A total of 1,185 participants from Col...

Read full article:

Updating the Mattis Dementia Rating Scale to DSM-5</ em>-TR/ICD-11: A new item-division based on the current neurocognitive domains.





NEUROPSYCHOLOGY

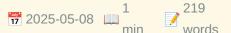
Summary: Objective: The Mattis Dementia Rating Scale (DRS), a widely used cognitive assessment tool, has been revised to align with contemporary diagnostic criteria and cognitive domain classifications such as those outlined in Diagnostic Statistical Manual for Mental Disorders, fifth edition-text r...



⊗ Read full article:

http://doi.org/10.1037/neu0001029

Inhibitory control underpins the relationship between cognitive and psychological inflexibility after a moderate to severe traumatic brain injury.





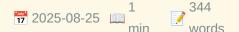


NEUROPSYCHOLOGY

Summary: Objective: Cognitive flexibility is proposed as being one "building block" of psychological inflexibility/flexibility, yet empirical studies examining these associations are scarce. This study aims to examine the relationship between these constructs in those with a moderate to severe traumatic brai...



Comparison of multidomain assessment outcomes between older and middle-aged adults following concussion.



NEUROPSYCHOLOGY

Summary: Objective: This article's objective was to compare demographic/medical history and multidomain clinical assessment outcomes between older and middle-aged adults following concussion. Method: Seventy-six patients aged 50–80 years within 12 months of a concussion from a specialty clinic between Octobe...

http://doi.org/10.1037/neu0001032

Neural correlates of stigma: A systematic review.



Summary: Objective: Understanding neural mechanisms underlying the experience and enactment of stigma is needed to address the public health challenge posed by both experienced and enacted stigma. In this systematic review, we synthesized the literature on neural correlates of stigma from the perspective of ...



Back to the future in Neuropsychology.

1 146 NEUROPSYCHOLOGY words

Summary: The journal continues to be a leading journal in the field but cannot rest on its laurels; concrete actions will be needed to increase the quantity and quality of submissions. To accomplish this, Neuropsychology needs to build on specific areas of strength. Accordingly, a revised statement ...

http://doi.org/10.1037/neu0001044

Threads And Processes In Python, The Practical Guide



Summary: <!-- SC_OFF --><div class="md">Hey everyone just made a nice video about concurrent and parallel programming in python using threads and processes. it shows you the differences along with some real word use cases for both, and it also shows how to safely pa...

https://www.reddit.com/r/Python/comments/1091096/threads_and_processes_in_python_the_practical/

GenLARP: Enabling Immersive Live Action Role-Play through LLM-Generated Worlds and Characters

Yichen Yu, Yifan Jiang, Mandy Lui, Qiao

1 62 min words

ARXIV CS HC

Summary: arXiv:2510.14277v1 Announce Type: new Abstract: We introduce GenLARP, a virtual reality (VR) system that transforms personalized stories into immersive live action role-playing (LARP) experiences. GenLARP enables users to act as both creators and players, allowing them to design characters based on...

https://arxiv.org/abs/2510.14277

TapNav: Adaptive Spatiotactile Screen Readers for Tactually Guided Touchscreen Interactions for Blind and Low Vision People

Ricardo Gonzalez, Fannie Liu, Blair MacIntyre, David Saffo

1 167 min words

ARXIV CS HC

Summary: arXiv:2510.14267v1 Announce Type: new Abstract: Screen readers are audiobased software that Blind and Low Vision (BLV) people use to interact with computing devices, such as tablets and smartphones. Although this technology has significantly improved the accessibility of touchscreen devices, the s...

⊗ Read full article:

VisAider: AI-Assisted Context-Aware Visualization Support for Data Presentations

Kentaro Takahira, Yuki

1 189 words

ARXIV CS HC

Summary: arXiv:2510.14247v1 Announce Type: new Abstract: Effective real-time data presentation is essential in small-group interactive contexts, where discussions evolve dynamically and presenters must adapt visualizations to shifting audience interests. However, most existing interactive visualization syst...

https://arxiv.org/abs/2510.14247

Understanding Data Usage when Making High-Stakes Frontline Decisions in Homelessness Services

Teale W. Masrani, Geoffrey Messier, Amy Voida, Gina Dimitropoulos, Helen Ai

2025-10-17



ARXIV CS HC

Summary: arXiv:2510.14141v1 Announce Type: new Abstract: Frontline staff of emergency shelters face challenges such as vicarious trauma, compassion fatigue, and burnout. The technology they use is often not designed for their unique needs, and can feel burdensome on top of their already cognitively and emot...

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Reversing the Lens: Using Explainable AI to Understand **Human Expertise**

Roussel Rahman, Aashwin Ananda Mishra, Wan-Lin
Hu

1
2025-10-17
min

134
words

ARXIV CS HC

Summary: arXiv:2510.13814v1 Announce Type: new Abstract: Both humans and machine learning models learn from experience, particularly in safety- and reliability-critical domains. While psychology seeks to understand human cognition, the field of Explainable AI (XAI) develops methods to interpret machine lear...

https://arxiv.org/abs/2510.13814

Puzzlegram: a Serious Game Designed for the Elderly in **Group Settings**





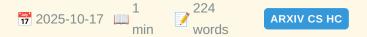
ARXIV CS HC

Summary: arXiv:2510.13813v1 Announce Type: new Abstract: An original serious game prototype named 'Puzzlegram' is created for the elderly demographic in group settings as the target players. Puzzlegram is precisely designed to accentuate memory, auditory interaction as well as haptic response to visual sign...

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MindBenchAI: An Actionable Platform to Evaluate the Profile and Performance of Large Language Models in a Mental Healthcare Context

Bridget Dwyer, Matthew Flathers, Akane Sano, Allison Dempsey, Andrea Cipriani, Asim H. Gazi, Carla Gorban, Carolyn I. Rodriguez, Charles Stromeyer IV, Darlene King, Eden Rozenblit, Gillian Strudwick, Jake Linardon, Jiaee Cheong, Joseph Firth, Julian Herpertz, Julian Schwarz, Margaret Emerson, Martin P. Paulus, Michelle Patriquin, Yining Hua, Soumya Choudhary, Steven Siddals, Laura Ospina Pinillos, Jason Bantjes, Steven Scheuller, Xuhai Xu, Ken Duckworth, Daniel H. Gillison, Michael Wood,



Summary: arXiv:2510.13812v1 Announce Type: new Abstract: Individuals are increasingly utilizing large language model (LLM)based tools for mental health guidance and crisis support in place of human experts. While AI technology has great potential to improve health outcomes, insufficient empirical evidence e...

John Torous

Generative AI in Heritage Practice: Improving the Accessibility of Heritage Guidance

Jessica Witte, Edmund Lee, Lisa Brausem, Verity Shillabeer, Chiara Bonacchi

2025-10-17

1 159 ARXIV CS HC words

Summary: arXiv:2510.13811v1 Announce Type: new Abstract: This paper discusses the potential for integrating Generative Artificial Intelligence (GenAI) into professional heritage practice with the aim of enhancing the accessibility of public-facing guidance documents. We developed HAZEL, a GenAI chatbot fine...

https://arxiv.org/abs/2510.13811

Choreographing Trash Cans: On Speculative Futures of Weak Robots in Public Spaces

Minja Axelsson, Lea Luka

1 148

Sikau

min words

ARXIV CS HC

Summary: arXiv:2510.13810v1 Announce Type: new Abstract: Delivering groceries or cleaning airports, mobile robots exist in public spaces. While these examples showcase robots that execute tasks, this paper explores mobile robots that encourage posthuman collaboration rather than managing environments indepe...

Read full article:

Semantic representations emerge in biologically inspired ensembles of cross-supervising neural networks

Roy Urbach, Elad
Schneidman

1
2025-10-17
words

ARXIV QBIO NC

Summary: arXiv:2510.14486v1 Announce Type: new Abstract: Brains learn to represent information from a large set of stimuli, typically by weak supervision. Unsupervised learning is therefore a natural approach for exploring the design of biological neural networks and their computations. Accordingly, redunda...

https://arxiv.org/abs/2510.14486

Joint encoding of "what" and "when" predictions through error-modulated plasticity in reservoir spiking networks

Yohei Yamada, Zenas C. Chao

1 245 min words

ARXIV QBIO NC

Summary: arXiv:2510.14382v1 Announce Type: new Abstract: The brain understands the external world through an internal model that generates predictions and refines them based on prediction errors. A complete prediction specifies what will happen, when it will happen, and with what probability, which we refer...

Sensorimotor Contingencies and The Sensorimotor Approach to Cognition

Denizhan
Pak

1
2025-10-17

| min | 85
| words

Summary: arXiv:2510.14227v1 Announce Type: new Abstract: 4E views of cognition seek to replace many of the long-held assumptions of tra- ditional cognitive science. One of the most radical shifts is the rejection of the sandwich model of cognition [8], which holds that mental processes are located be- tween...

https://arxiv.org/abs/2510.14227

Using Information Geometry to Characterize Higher-Order Interactions in EEG

Eric Albers, Paul Marriott, Masami Tatsuno

1 217 min words

ARXIV QBIO NC

Summary: arXiv:2510.14188v1 Announce Type: new Abstract: In neuroscience, methods from information geometry (IG) have been successfully applied in the modelling of binary vectors from spike train data, using the orthogonal decomposition of the Kullback-Leibler divergence and mutual information to isolate di...

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Bayes or Heisenberg: Who(se) Rules?

Volker Tresp Hang Li, Federico Harjes, Yunpu

1 2025-10-17 min 86 words

ARXIV QBIO NC

Summary: arXiv:2510.13894v1 Announce Type: new Abstract: Although quantum systems are generally described by quantum state vectors, we show that in certain cases their measurement processes can be reformulated as probabilistic equations expressed in terms of probabilistic state vectors. These probabilistic ...

https://arxiv.org/abs/2510.13894

Large Language Model Agents Enable Autonomous Design and Image Analysis of Microwell Microfluidics

Dinh-Nguyen Nguyen, Sadia Shakil, Raymond Kai-Yu Tong, Ngoc-Duy

1 2025-10-17 min

241 words

ARXIV QBIO NC

Summary: arXiv:2510.13883v1 Announce Type: new Abstract: Microwell microfluidics has been utilized for single-cell analysis to reveal heterogeneity in gene expression, signaling pathways, and phenotypic responses for identifying rare cell types, understanding disease progression, and developing more precise...

S Read full article:

Embodiment in multimodal large language models

Akila Kadambi, Lisa Aziz-Zadeh, Antonio Damasio, Marco Iacoboni, Srini Narayanan

2025-10-17



Summary: arXiv:2510.13845v1 Announce Type: new Abstract: Multimodal Large Language Models (MLLMs) have demonstrated extraordinary progress in bridging textual and visual inputs. However, MLLMs still face challenges in situated physical and social interactions in sensorally rich, multimodal and real-world se...

https://arxiv.org/abs/2510.13845

Hybrid Deep Learning Approaches for Classifying Autism from Brain MRI





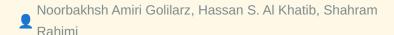




ARXIV QBIO NC

Summary: arXiv:2510.13841v1 Announce Type: new Abstract: Autism spectrum disorder (ASD) is most often diagnosed using behavioral evaluations, which can vary between clinicians. Brain imaging, combined with machine learning, may help identify more objective patterns linked to ASD. This project used magnetic ...

Towards Neurocognitive-Inspired Intelligence: From Al's Structural Mimicry to Human-Like Functional Cognition







ARXIV QBIO NC

Summary: arXiv:2510.13826v1 Announce Type: new Abstract: Artificial intelligence has advanced significantly through deep learning, reinforcement learning, and large language and vision models. However, these systems often remain task specific, struggle to adapt to changing conditions, and cannot generalize ...



A Two-Feature Quantitative EEG Index of Pediatric Epilepsy Severity: External Pre-Validation on CHB-MIT and Roadmap to Dravet Cohorts

Khartik Uppalapati, Bora Yimenicioglu, Shakeel Abdulkareem, Bhavya Uppalapati, Viraj Kamath, Adan Eftekhari, Pranav Ayyappan







ARXIV QBIO NC

Summary: arXiv:2510.13815v1 Announce Type: new Abstract: Objective biomarkers for staging pediatric epileptic encephalopathies are scarce. We revisited a large open repository -- the CHB-MIT Scalp EEG Database, 22 subjects aged 1.5-19 y recorded at 256 Hz under the 10-20 montage -- to derive and validate a ...



https://arxiv.org/abs/2510.13815

C9orf72 related poly-Glycine-Alanine promotes tau phosphorylation and cell death via ERK1/2 interaction in cellular models



NEUROSCIENCE JOURNAL

Summary: Publication date: 10 November 2025Source: Neuroscience, Volume 587Author(s): Jiahan Zhuang, Zixuan Zhang, Hongfu Jin, Ji Qi, Yuanyuan Chen, Lin Ding, Chenglai Fu, Weiwei Cheng



https://www.sciencedirect.com/science/article/pii/S0306452225009832?dgcid=rss_sd_all

Assessment of elephant claustrum by combined histological analysis and high-resolution micro-CT

NEUROSCIENCE JOURNAL

Summary: Publication date: 10 November 2025Source: Neuroscience, Volume 587Author(s): Chao Fang, Anne Schnurpfeil, Lennart Eigen, Olivia Heise, Tabea Pottek, Johannes Alkofer, Thomas Hildebrandt, Tim Salditt, Robert K. Naumann, Michael Brecht

https://www.sciencedirect.com/science/article/pii/S0306452225009741?dgcid=rss_sd_all

Effect of Origanum majorana tea on oxidative stress biomarkers in Parkinson's disease: a randomized placebo-controlled pilot study



NEUROSCIENCE JOURNAL

Summary: Publication date: 10 November 2025Source: Neuroscience, Volume 587Author(s): Chbili Chahra, Mrad Sawssen, Hassine Anis, Naija Salma, Nouira Manel, Ben Amor Sana, Ben Fredj Maha

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The Smarce1 subunit of the BAF complex performs distinct, stage-specific functions during zebrafish retinal development

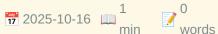
NEUROSCIENCE JOURNAL

Summary: Publication date: 10 November 2025Source: Neuroscience, Volume 587Author(s): Laura Ramírez, Denhí Schnabel, Flavio R. Zolessi, Hilda Lomelí

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Interaction of sortilin with apolipoprotein E3 enables neurons to use long-chain fatty acids as alternative metabolic fuel







https://www.nature.com/articles/s42255-025-01389-5

Thalamic regulation of reinforcement learning strategies across prefrontal-striatal networks



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The neural basis for uncertainty processing in hierarchical decision making



https://www.nature.com/articles/s41467-025-63994-y

Differential synaptic depression mediates the therapeutic effect of deep brain stimulation

Guohong
Cui

Guohong

1

Words

NATURE NEUROSCIENCE

Summary: Nature Neuroscience, Published online: 16 October 2025; www.nature.com/articles/s41593-025-02088-w">doi:10.1038/s41593-025-02088-w</ p>The authors show that deep brain stimulation (DBS) inhibits local neural activity via differential suppression of glutamate and GABA release, ...

https://www.nature.com/articles/s41593-025-02088-w

Leveraging neuroinformatics to understand cognitive phenotypes in elite athletes through systems neuroscience





FRONTIERS NEUROINFORMATICS

Summary: IntroductionUnderstanding the cognitive phenotypes of elite athletes offers a unique perspective on the intricate interplay between neurological traits and highperformance behaviors. This study aligns with advancing neuroinformatics by proposing a novel framework designed to capture and analyze the...

https://www.frontiersin.org/articles/10.3389/fninf.2025.1557879

Improving EEG classification of alcoholic and control subjects using DWT-CNN-BiGRU with various noise filtering techniques



Swati
Jain

1 188
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...



https://www.frontiersin.org/articles/10.3389/fninf.2025.1618050

Large language models can extract metadata for annotation of human neuroimaging publications





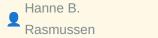
FRONTIERS NEUROINFORMATICS

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...

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https://www.frontiersin.org/articles/10.3389/fninf.2025.1609077

A correlation-based tool for quantifying membrane periodic skeleton associated periodicity



1 156 min words

FRONTIERS NEUROINFORMATICS

Summary: IntroductionThe advent of super-resolution microscopy revealed the membraneassociated 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...

https://www.frontiersin.org/articles/10.3389/fninf.2025.1628538

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





COGNITIVE NEUROSCIENCE

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



Object Ownership Processing in Peripersonal Space: An Electroencephalographic Study

1 251 min words



COGNITIVE NEUROSCIENCE

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

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

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





COGNITIVE NEUROSCIENCE

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

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

1 244 min words

COGNITIVE NEUROSCIENCE

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

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

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





COGNITIVE NEUROSCIENCE

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

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

1 157 min words

COGNITIVE NEUROSCIENCE

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

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

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



COGNITIVE NEUROSCIENCE

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

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







COGNITIVE NEUROSCIENCE

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



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

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







COGNITIVE NEUROSCIENCE

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



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



NEUROIMAGE

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

https://www.sciencedirect.com/science/article/pii/S1053811925005154?dgcid=rss_sd_all

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



NEUROIMAGE

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

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





NEUROIMAGE

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

https://www.sciencedirect.com/science/article/pii/S1053811925005257?dgcid=rss_sd_all

Motor-related neural oscillations in mood disorders





NEUROIMAGE

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



https://www.sciencedirect.com/science/article/pii/S1053811925005269?dgcid=rss_sd_all

Targeted hip abductor fatigue alters trunk and lower limb biomechanics during Single-Leg landing



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Hormonal contraceptive effects on the brain: considering the dual impact of endogenous and exogenous hormone flux



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Innate spectral preferences and aversive visual learning reveal wavelength-dependent preferences and discrimination in Drosophila melanogaster



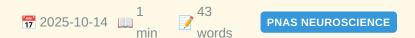
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Spontaneous activity of astrocytes is a stochastic functional signal for memory consolidation

Gabriele LosiBeatrice VignoliRocco GranataAnnamaria LiaMicaela ZontaGabriele
SanseveroFrancesca PischeddaAngela ChiavegatoSpartaco SantiLorena ZentilinNicoletta BerardiGian
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ItalydDepartment of Cellular Computational and Integrative Biology, University of Trento, Povo (TN)
38123, ItalyeCenter for Nanotechnology Innovation (NEST- National Enterprise for nanoScience and

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 □ University of Padova, Padova 35131, ItalygInstitute of Neuroscience, National Research Council, Pisa
 section, Pisa 56125, ItalyhInstitute of Molecular Genetics "Luigi Luca Cavalli-Sforza," National
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 Healthcare Istituto Ortopedico Rizzoli, Bologna 40100, ItalyjInternational Centre for Genetic
 Engineering and Biotechnology, Padriciano (TS) 34149, ItalykDepartment of Neuroscience,
 Psychology, Drug Research and Child Health (NEUROFARBA), University of Florence, Florence
 50139, ItalylInstitute of Biophysics, National Research Council, Pisa 56126, Italy



Summary: Proceedings of the National Academy of Sciences, Volume 122, Issue 42, October 2025.

SignificanceLosi G., Vignoli B. et al. demonstrate that recurring, spontaneous intracellular Ca2+fluctuations in perisynaptic astrocytic processes [Ca2+microdomains (MDs)] are functional signals required for I...

https://www.pnas.org/doi/abs/10.1073/pnas.2500511122?af=R

Transcranial direct current stimulation (tDCS) for cognitive impairment in schizophrenia: A systematic review and metaanalysis of randomized controlled trials

Roberto Rodriguez
Jimenez

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46

words

TDCS TACS TRNS

Summary: CONCLUSIONS: tDCS shows domain-specific potential for cognitive enhancement in schizophrenia, particularly in verbal learning. However, the small effect sizes, high heterogeneity, and limited methodological rigor of included trials warrant cautious interpretation. Future research should emphasize st...

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Cortical modulation by exogenous electric fields is consistent with electric dipoles

Maria V Sanchez-

1 65 min words

TDCS TACS TRNS

Summary: Cortical activity can be modulated by endogenous and exogenous electric fields (EFs). Recent experimental and computational data suggested that endogenous EFmediated effects are compatible with electric dipoles, which contribute to the synchronization of neighboring cortical columns. Consistently, ...

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A deep learning approach to artifact removal in Transcranial **Electrical Stimulation: From shallow methods to deep neural** networks and state space models

Aitor
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Summary: Transcranial Electrical Stimulation (tES) is a non-invasive neuromodulation technique that generates artifacts in simultaneous EEG recordings, hindering brain activity analysis. This study analyzes Machine Learning (ML) methods for tES noise artifact removal across three stimulation types: tDCS, tAC...

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Diffusion trajectory of atypical morphological development in autism spectrum disorder



1 68 TDCS TACS TRNS





Summary: Brain development from childhood through adolescence is crucial for understanding autism spectrum disorder (ASD). Yet how functional networks regulate developmental changes in brain morphology remains unclear. Here, we analyzed gray matter volume (GMV) and functional connectivity (FC) in 301 individ...

Read full article:

https://pubmed.ncbi.nlm.nih.gov/41102402/?

Primary stabbing headache in a tertiary headache centre

1 2025-10-16 min 58

TDCS TACS TRNS

Summary: INTRODUCTION: Primary stabbing headache (PSH) is a short-lasting head pain occurring spontaneously in the absence of underlying structural causes. Although it is a frequent disorder, with a reported lifetime prevalence of 35.2% in the general population, its pathophysiological underpinnings remain i...

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



1 63 min words



TDCS TACS TRNS

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

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High-intensity transcranial alternating current stimulation combined with pharmacotherapy for adolescent major depressive disorder: a prospective case report study

Summary: CONCLUSIONS: The combination of HI-tACS and pharmacotherapy demonstrated potential early effects in this small cohort of adolescents with MDD, particularly during the initial phase of treatment. These preliminary findings warrant further investigation through large-scale randomized controlled trials...

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Non-invasive brain stimulation for suicidal ideation: a systematic review and metanalysis of the current literature









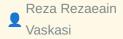
TDCS TACS TRNS

Summary: Data suggests that the available therapeutic tools are still insufficient to deal with suicidality. Non-Invasive Brain Stimulation techniques (NIBS) have entered the recognized guidelines for therapies in psychiatry due to the advantages related to safety and tolerability. The purpose of this review...

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Active and sham transcranial direct-current stimulation (tDCS) plus core stability on the knee kinematic and performance of the lower limb of the soccer players with dynamic knee valgus; two armed randomized clinical trial





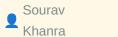


TDCS TACS TRNS

Summary: Dynamic knee valgus (DKV) is a prevalent risk factor for anterior cruciate ligament (ACL) injuries in soccer players, particularly during noncontact mechanisms. Transcranial direct-current stimulation (tDCS) and core stability exercises have shown promise in enhancing motor control and biomechanical...

https://pubmed.ncbi.nlm.nih.gov/41103970/?

Effect of Precision-based HD-tDCS Over Conventional HDtDCS in Young-onset Mania: Protocol for an Active **Comparison fMRI and TMS Study**









TDCS TACS TRNS

Summary: CONCLUSIONS: This study protocol aims to explore the effect of novel precision-based HD-tDCS in young-onset mania compared to conventional HD-tDCS, thereby allowing for the examination of precision neuromodulation in young-onset mania.

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Functional connectivity in whole-brain and network analysis differentiates minimally conscious from unresponsive patients: a resting-state fNIRS study







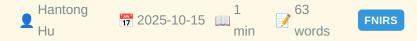




Summary: CONCLUSION: fNIRS could effectively detect abnormal brain network functional connectivity in DOC patients and could provide valuable insights for differentiating MCS and VS/UWS patients.

https://pubmed.ncbi.nlm.nih.gov/41088235/?

Predicting Individual Response to Acupuncture in Sensorineural Tinnitus Using Integrated Functional Near-Infrared Spectroscopy and Machine Learning: Protocol for a Model Development and Validation Study



Summary: CONCLUSION: This study represents the first attempt to integrate fNIRS detection with machine learning techniques for predicting acupuncture efficacy in SNT treatment. The methodology addresses several key challenges in acupuncture research through comprehensive data collection and advanced analytic...

https://pubmed.ncbi.nlm.nih.gov/41089742/?

Online Regulation of Task Difficulty based on Neuro- and Motor-feedback to improve engagement in Visual-motor Task



Rong 1 36
Song min words

Summary: CONCLUSION: Our findings suggest that the proposed NMF system can enable online neural activity regulation in visual-motor tasks and achieve enhanced integration between cognitive and sensorimotor areas, with the potential to improve the rehabilitation training outcomes.

https://pubmed.ncbi.nlm.nih.gov/41091617/?

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Effect of lower limb mirror visual feedback on cortical activation in healthy subjects: a self-controlled randomized trail



Li 1 31 words

FNIRS

Summary: CONCLUSION: LLMVF increases neural activity in the sensory and motor related areas, indicating that LLMVF can promote more activation of brain functional areas, which verifies the top-down positive effect of LLMVF.

https://pubmed.ncbi.nlm.nih.gov/41094487/?

TSFNet: Temporal-Spatial Fusion Network for Hybrid Brain-Computer Interface



Summary: Unimodal brain-computer interfaces (BCIs) often suffer from inherent limitations due to the characteristic of using single modalities. While hybrid BCIs combining electroencephalography (EEG) and functional near-infrared spectroscopy (fNIRS) offer complementary advantages, effectively integrating th...

https://pubmed.ncbi.nlm.nih.gov/41094934/?

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Diagnostic Efficacy of Olfactory Function Test Using Functional Near-Infrared Spectroscopy with Machine Learning in Healthy Adults: A Prospective Diagnostic-Accuracy (Feasibility/Validation) Study in Healthy Adults with Algorithm Development



Summary: Background/Objectives: The YSK olfactory function (YOF) test is a culturally adapted psychophysical tool that assesses threshold, discrimination, and identification. This study evaluated whether functional near-infrared spectroscopy (fNIRS) synchronized with routine YOF testing, combined with machin...

⊗ Read full article:

https://pubmed.ncbi.nlm.nih.gov/41095653/?

Enhanced Activation in the Dorsolateral Prefrontal Cortex and Inferior Parietal Lobule During Recovery from Body Dissatisfaction



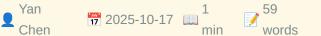
Summary: Previous studies have examined the neural mechanisms of body dissatisfaction. This study aimed to investigate the neural basis of recovery from body dissatisfaction. Sixty-seven young women participated in this study, engaging in a fat talk-a conversation known to induce body dissatisfaction-followe...

⊗ Read full article:

https://pubmed.ncbi.nlm.nih.gov/41099370/?

Immediate modulation effects of Tongue Tri-needle on brain functional networks in infratentorial stroke patients with dysphagia: a randomized controlled trial











Summary: CONCLUSION: Infratentorial stroke patients with dysphagia exhibit disrupted functional connectivity within the fronto-temporo-sensorimotor network, which is associated with clinical impairment. Tongue Tri-needle multi-stage, selective reconfiguration of brain functional networks, particularly by mod...

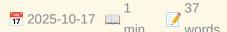
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Riemannian geometry boosts functional near-infrared spectroscopy-based brain-state classification accuracy











Summary: CONCLUSION: To our knowledge, we are the first to demonstrate that the proposed Riemannian-geometry-based classification approach is both powerful and viable for fNIRS data, substantially increasing the accuracy in binary and multi-class classification of brain activation patterns.

Read full article:

https://pubmed.ncbi.nlm.nih.gov/41104354/?

Sensitive and specific fNIRS-based approach for awareness detection in disorders of consciousness: proof of principle in healthy adults

1 44 min words

Summary: CONCLUSION: This individualized diagnostic approach may have the potential to significantly enhance diagnostic accuracy for DoCs. It provides a noninvasive, efficient, and objective assessment, potentially reducing the rate of misdiagnosis rates. The practicality and minimal technical requirements o...

⊗ Read full article:

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Effectiveness of Electroencephalographic Neurofeedback for Parkinson's Disease: A Systematic Review and Meta-Analysis

1 63 min words

BRAIN COMPUTER INTERFACE

Summary: Background: Electroencephalographic (EEG) neurofeedback training is gaining traction as a non-pharmacological treatment option for Parkinson's disease (PD). This paper reports the first pre-registered, integrated systematic review and meta-analysis of studies examining the effects of EEG neurofeedba...

Read full article:

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A Novel Grasping Robot Control Method Using Motion **Execution BCI Combining Knowledge Reasoning**

Wen

1 68 min words

BRAIN COMPUTER INTERFACE

Summary: Recently, with the growing number of disabled people, brain-controlled technology offers a novel way to help patients restore their daily abilities. However, the conventional brain-controlled system based on the motion related task lacks intelligence in real-world environments. To address above prob...

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Advances in flexible high-density microelectrode arrays for brain-computer interfaces





BRAIN COMPUTER INTERFACE

Summary: Recent advances in flexible high-density microelectrode arrays (FHD-MEA) have revolutionized brain-computer interfaces (BCIs) by providing high spatial resolution, mechanical compliance, and long-term biocompatibility. This technology enables stable neural recording and precise stimulation, addressi...

⊗ Read full article:

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Neural mechanism of the sexually dimorphic winner effect in mice



Summary: The "winner effect," where prior victories increase the likelihood of future wins, profoundly shapes social hierarchy dynamics and competitive motivation. Although human literature suggests a less pronounced winner effect in females, the neural mechanisms underlying these sex differences remain uncl...

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utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1rSUu-tbw4049Wgf_RdKXdtNCvGW0IVBZFpHe7zaN4k4DwoD5&fc=None&ff=20251017232850&v=2.18.0.post9
+e462414

Artificial intelligence and computer-aided diagnosis in diagnostic decisions: 5 questions for medical informatics and human-computer interface research









BRAIN COMPUTER INTERFACE

Summary: OBJECTIVES: Artificial intelligence (AI) has the potential to transform medical informatics by supporting clinical decision-making, reducing diagnostic errors, and improving workflows and efficiency. However, successful integration of AI-based decision support systems depends on careful consideratio...

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Diffusion trajectory of atypical morphological development in autism spectrum disorder

Xujun 1 68
Duan min words

BRAIN COMPUTER INTERFACE

Summary: Brain development from childhood through adolescence is crucial for understanding autism spectrum disorder (ASD). Yet how functional networks regulate developmental changes in brain morphology remains unclear. Here, we analyzed gray matter volume (GMV) and functional connectivity (FC) in 301 individ...

https://pubmed.ncbi.nlm.nih.gov/41102402/?

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A Moratorium on Implantable Non-Medical Neurotech Until **Effects on the Mind are Properly Understood**

2025-10-17 min 67 words



BRAIN COMPUTER INTERFACE

Summary: The development of non-medical consumer neurotechnology is gaining momentum. As companies chart the course for future implanted and invasive braincomputer interfaces (BCIs) in non-medical populations, the time has come for concrete steps toward their regulation. We propose three measures: First, a ...

https://pubmed.ncbi.nlm.nih.gov/41104262/?

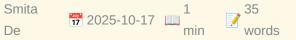
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Simple Prostatectomy is an Effective Option for BPH Patients With Hypocontractile Bladders









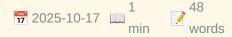
BRAIN COMPUTER INTERFACE

Summary: CONCLUSIONS: This is one of the first studies assessing outcomes of SP in patients with hypocontractile bladders. SP is an effective surgical option for patients with impaired detrusor function including those who are catheter dependent.

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Electromagnetic Stimulation to Reduce Disability After Ischemic Stroke: The EMAGINE Randomized Clinical Trial





BRAIN COMPUTER INTERFACE

Summary: CONCLUSION AND RELEVANCE: This trial found that ENTF therapy is safe. Although the difference between groups was not statistically significant, ENTF therapy may reduce global disability in patients with severe baseline disability after ischemic stroke. These results warrant confirmation in a higher ...

https://pubmed.ncbi.nlm.nih.gov/41105410/?
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+e462414

A different bimodal: case series of patients with a cochlear implant and a contralateral bone conduction implant

Mark 1 37
Chung min words

BRAIN COMPUTER INTERFACE

Summary: CONCLUSION: The synergy of electrical and vibratory auditory stimulation observed in this case series provided subjective functional benefits and measurable speech perception benefits for some patients, while others experienced minimal or no measurable benefit and ceased usage.

https://pubmed.ncbi.nlm.nih.gov/41105834/?

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Show HN: ServiceRadar – open-source Network Observability Platform

1 2 2025-10-18 min words HACKER NEWS





Summary: Comments

https://github.com/carverauto/serviceradar

Wikipedia Volunteers Avert Tragedy by Taking Down Gunman at Conference

tptacek 7 2025-10-18 min 13 words

Summary: Article URL: https://www.nytimes.com/2025/10/17/nyregion/wikipedia-conference-gunman.html Comments URL: https://news.ycombinator.com/item?id=45...

⊗ Read full article:

https://www.nytimes.com/2025/10/17/nyregion/wikipedia-conference-gunman.html

Show HN: ServiceRadar – open-source Network Observability Platform

carverauto 7 2025-10-18 min 152 mords HACKER NEWS

Summary: ServiceRadar is an open-source platform for distributed, secure network management and observability, scaling to 100k+ devices. Born from frustration with complex traditional NMS tools like Zabbix, it bridges legacy (SNMP/syslog) and modern (gNMI, OTLP) protocols for cloud-native environments....

Read full article:

https://github.com/carverauto/serviceradar

Type S and M errors as a "rhetorical tool"

noreply@blogger.com (Daniel

17 2025-09-28 min 3572 words

TWENTY PERCENT STATISTICIAN

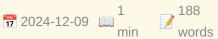
Summary: <i>Update 30/09/2025: I have added a reply by Andrew Gelman below my original blog post.</i> We recently posted a preprint criticizing the idea of Type S and M errors (https://osf.io/2phzb_v1). From our abstract: "While these concepts have been pr...

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

Advancing Cardiac Organoid Engineering Through Application of Biophysical Forces







REVIEWS BIOMEDICAL ENGINEERING

Summary: Cardiac organoids represent an important bioengineering opportunity in the development of models to study human heart pathophysiology. By incorporating multiple cardiac cell types in three-dimensional culture and developmentally-guided biochemical signaling, cardiac organoids recapitulate numerous f...

⊗ Read full article:

http://ieeexplore.ieee.org/document/10787078

Musical Structure Influences the Perception of Sound Location

1 2025-09-08 min 209 COGNITIVE NEUROSCIENCE

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

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

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







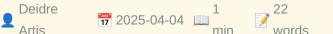


Summary: The post Call for Applications: IEEE T-MRB Editor in Chief Search appeared first on IEEE EMBS.

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

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









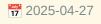
Summary: The post https://www.embs.org/ojemb/search-for-editor-in-chief/ #new_tab">Call for Applications Editor-in-Chief: IEEE Open Journal of Engineering in Medicine and Biology appeared first on IEEE EMBS</ a>.



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

Notice to IEEE EMBS Members: Change to Field of Interest











Summary: The post Notice to IEEE EMBS Members: Change to Field of Interest appeared first on IEEE EMBS.



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

Notice to IEEE EMBS Members: Change to Field of Interest









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Summary: The post Notice to IEEE EMBS Members: Change to Field of Interest appeared first on IEEE EMBS.



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Open Call for AdCom Nominations











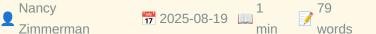
Summary: The post Open Call for AdCom Nominations appeared first on IEEE EMBS.



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

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







Summary: (Piscataway, N.J., August 12, 2025) Sunghoon "Ivan" Lee, Ph.D., a Donna M. and Robert J. Manning Faculty Fellow and an Associate Professor of computer science, electrical and computer engineering, and… Continu...



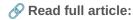
https://www.embs.org/press/embc-eic-sunghoon-ivan-lee/

Methodological considerations for quantifying brain asymmetry using neuroimaging techniques



BRAIN RESEARCH

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



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

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





BRAIN RESEARCH

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



https://www.sciencedirect.com/science/article/pii/S0006899325005396?dgcid=rss_sd_all

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

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

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



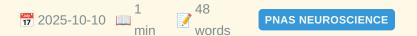
Summary: Proceedings of the National Academy of Sciences, Volume 122, Issue 41, October 2025.

SignificanceWe implement a biologically grounded cortical circuit motif in neuromorphic hardware and AI architectures to show how experimentally informed neocortical computations, realized through cell-type-sp...

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

Inter- and intrahemispheric sources of vestibular signals to V1

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



University of California San Francisco, San Francisco, CA 94158

Summary: Proceedings of the National Academy of Sciences, Volume 122, Issue 41, October 2025.

SignificanceInformation about head motion is fundamental to the visual interpretation of our environment. Indeed, head motion signals originating from the vestibular system robustly modulate activity in the vi...

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

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

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

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



Summary: Proceedings of the National Academy of Sciences, Volume 122, Issue 41, October 2025.

SignificanceDexmedetomidine (DEX), a widely used sedative in intensive care, induces an arousable state resembling non-rapid eye movement (NREM) sleep and lowers body temperature. For some patients, even sligh...

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

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

Aleksandra Kawala-Sterniuk 77 2025-08-29 min 279 words

FRONTIERS NEUROINFORMATICS

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

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

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



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...

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

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

Jan G. Bjaalie

1 207 min words

FRONTIERS NEUROINFORMATICS

Summary: Advancements in methodologies for efficient large-scale acquisition of highresolution serial microscopy image data have opened new possibilities for experimental studies of cellular and subcellular features across whole brains in animal models. There is a high demand for open-source software and wo...

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

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



Maik

Kschischo

1
0
words



FRONTIERS COMPUTATIONAL NEUROSCIENCE

Read full article:

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

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



FRONTIERS COMPUTATIONAL NEUROSCIENCE

Summary: IntroductionUnderstanding how neurons respond to time-varying electric fields is essential for both basic neuroscience and the development of neuromodulation strategies. However, the mechanisms by which alternating-current induced electric fields (AC-IEF) influence neuronal sensitivity and firing re...

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

Intrinsic calcium resonance and its modulation: insights from computational modeling



FRONTIERS COMPUTATIONAL NEUROSCIENCE

Summary: Hippocampal neurons generate membrane potential resonance due to specific voltage-gated ion channels, known as resonating conductances, which play crucial physiological roles. However, it is not known whether this phenomenon of resonance is limited to membrane voltage or whether it propagates throug...

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

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



FRONTIERS COMPUTATIONAL NEUROSCIENCE

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

Read full article:

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

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







FRONTIERS NEUROROBOTICS

Summary: Although deep learning methods have made significant strides in single image sand dust removal, the heterogeneous uncertainty induced by dusty environments poses a considerable challenge. In response, our research presents a novel framework known as the Hierarchical Interactive Uncertainty-aware Net...

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

Source-free domain adaptation for SSVEP-based braincomputer interfaces

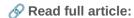
Osman Berke Guney, Deniz Kucukahmetler and Huseyin Ozkan

1 2025-10-08 min

216 words

JOURNAL NEURAL ENGINEERING

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



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

EEG workload estimation and classification: a systematic review

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



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

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

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

Addison Schwamb, Zongxi Yu and ShiNung Ching

1 198 min words

JOURNAL NEURAL ENGINEERING

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

Read full article:

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

Brain-to-text decoding with context-aware neural representations and large language models

Jingyuan Li, Trung Le, Chaofei Fan, Mingfei Chen and Eli Shlizerman



235 words

JOURNAL NEURAL ENGINEERING

Summary: Objective. Decoding attempted speech from neural activity offers a promising avenue for restoring communication abilities in individuals with speech impairments. Previous studies have focused on mapping neural activity to text using phonemes as the intermediate target. While successful, decoding neu...

Read full article:

http://iopscience.iop.org/article/10.1088/1741-2552/adfab1

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

Maria Carla
Piastra

1
2024-06-14

min

64

words

OOSTENVELD ROBERT

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

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



1 72 min words

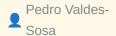
OOSTENVELD ROBERT

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

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One hundred years of EEG for brain and behaviour research







OOSTENVELD ROBERT

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









OOSTENVELD ROBERT

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

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

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

Krzysztof J
Gorgolewski

1 2024-09-23 min 82
words

OOSTENVELD ROBERT

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

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

1 65 min words

OOSTENVELD ROBERT

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

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

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

Luca 1 70
Pollonini 2025-01-27 min words

OOSTENVELD ROBERT

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

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



Lyuba
Zehl

Zehl

Zo25-06-26 min

Zostenveld robert

Oostenveld robert



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

Read full article:

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

Tim M
Tierney

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

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Optimal configuration of on-scalp OPMs with fixed channel counts







OOSTENVELD ROBERT

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

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

Clinical Potential of Essential Oils: Cytotoxicity, Selectivity Index, and Efficacy for Combating Gram-Positive ESKAPE Pathogens



Summary: (1) Background: Essential oils (EOs) have emerged as promising antibacterial agents due to their broad-spectrum activity and low risk of resistance development. Therefore, this review aimed to assess the effectiveness of EOs against Gram-positive ESKAPE pathogens, and to evaluate their safety and to...

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Artificial Intelligence-Enhanced Liquid Biopsy and Radiomics in Early-Stage Lung Cancer Detection: A Precision Oncology **Paradigm**

Shivaram P Arunachalam

1 2025-10-16 min 57 Low vision

Summary: CONCLUSION: The integration of AI with liquid biopsy and radiomics holds transformative potential for early lung cancer detection. This non-invasive, scalable, and individualized diagnostic paradigm could significantly reduce lung cancer mortality through timely and targeted interventions. As techno...

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One-Hot Multi-Level Leaky Integrate-and-Fire Spiking Neural Networks for Enhanced Accuracy-Latency Tradeoff



1 65 min words



LOW VISION

Summary: Spiking neural networks (SNNs) hold significant promise as energy-efficient alternatives to conventional artificial neural networks (ANNs). However, SNNs require computations across multiple timesteps, resulting in increased latency, heightened energy consumption, and additional memory access overhe...

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Artificial intelligence and computer-aided diagnosis in diagnostic decisions: 5 questions for medical informatics and human-computer interface research









LOW VISION

Summary: OBJECTIVES: Artificial intelligence (AI) has the potential to transform medical informatics by supporting clinical decision-making, reducing diagnostic errors, and improving workflows and efficiency. However, successful integration of AI-based decision support systems depends on careful consideratio...

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OsiriXGPT: An Innovative AI Co-pilot Plug-In for Seamless **Deployment of Generative AI Models in Scan-to-Scan Reporting Workflows**







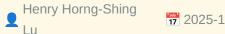
LOW VISION

Summary: Generative Artificial Intelligence (GenAI) has the potential to transform radiology by reducing reporting burdens, enhancing diagnostic workflows and facilitating communication of complex radiological information. However, research and adoption remain limited due to the lack of seamless integration ...

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Artificial intelligence-assisted glaucoma detection on color fundus images: with comorbidity and cross-institutional analysis







LOW VISION

Summary: CONCLUSION: The proposed AI system can detect glaucoma on standard color fundus photographs with high accuracy across clinical environments and in the presence of comorbid eye diseases. The system may be a practical and affordable tool for large-scale glaucoma screening, particularly in institutions...

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Rapid and accurate prediction of cycloplegic refraction in Chinese children: development and validation of machine learning models







Summary: CONCLUSIONS: The ML models enable cSE prediction based on non-cycloplegic refraction data and ocular biometric parameters, providing a fast, practical method for estimating refractive error. Multicenter validation and targeted oversampling of rare refractive subgroups are required, however, before r...

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3-Year Comparison Of Two Mix-And-Match Strategies: **Enhanced Monofocal And Trifocal Versus Enhanced Monofocal And Trifocal EDOF IOLs**





Summary: CONCLUSIONS: Combined implantation of enhanced monofocal and trifocal/ trifocal EDOF IOLs yields excellent distance and intermediate vision. Near visual acuity and spectacle independence was higher in the Isopure-HP group. Low incidence of photic phenomena and high patient satisfaction highlight the ...

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Donor Diabetes and 1-Year Descemet Membrane Endothelial Keratoplasty Success Rate: A Randomized Clinical Trial









Summary: CONCLUSIONS AND RELEVANCE: The 1-year success rate in eyes undergoing DMEK with successfully prepared tissue was very high regardless of donor diabetes status. These results, supported by the separately reported finding that endothelial cell loss and cornea morphometry after 1 year were not affected...

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JOANet: An Integrated Joint Optimization Architecture Making Medical Image Segmentation Really Helped by Superresolution Pre-processing

Yong-Jie
Li

2025-10-17

min

63

words

Low VISION

Summary: Conventional computer vision pipelines typically treat low-level enhancement and high-level semantic tasks as isolated processes, focusing on optimizing enhancement for perceptual quality rather than computational utility, neglecting semantic task requirements. To bridge this gap, this paper propose...

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



1 62 min 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...

Read full article:

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



Million 1 46
Phiri 2025-08-26 min words





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

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Explosion-powered eversible tactile displays



1 64 min words





BRAILLE

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

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



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

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



Min 1 64
Zhang min words

BRAILLE

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

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

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



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

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



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

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



1 55 min words



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

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



1 42 min words





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

Read full article:

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



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

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

Transcranial direct current stimulation (tDCS) for cognitive impairment in schizophrenia: A systematic review and metaanalysis of randomized controlled trials

Roberto Rodriguez
Jimenez

1

46

words

TDCS TACS TRNS

Summary: CONCLUSIONS: tDCS shows domain-specific potential for cognitive enhancement in schizophrenia, particularly in verbal learning. However, the small effect sizes, high heterogeneity, and limited methodological rigor of included trials warrant cautious interpretation. Future research should emphasize st...

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Cortical modulation by exogenous electric fields is consistent with electric dipoles

Maria V Sanchez-





TDCS TACS TRNS

Summary: Cortical activity can be modulated by endogenous and exogenous electric fields (EFs). Recent experimental and computational data suggested that endogenous EFmediated effects are compatible with electric dipoles, which contribute to the synchronization of neighboring cortical columns. Consistently, ...

Read full article:

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A deep learning approach to artifact removal in Transcranial **Electrical Stimulation: From shallow methods to deep neural** networks and state space models

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Summary: Transcranial Electrical Stimulation (tES) is a non-invasive neuromodulation technique that generates artifacts in simultaneous EEG recordings, hindering brain activity analysis. This study analyzes Machine Learning (ML) methods for tES noise artifact removal across three stimulation types: tDCS, tAC...

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Diffusion trajectory of atypical morphological development in autism spectrum disorder



1 68 TDCS TACS TRNS



Summary: Brain development from childhood through adolescence is crucial for understanding autism spectrum disorder (ASD). Yet how functional networks regulate developmental changes in brain morphology remains unclear. Here, we analyzed gray matter volume (GMV) and functional connectivity (FC) in 301 individ...

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https://pubmed.ncbi.nlm.nih.gov/41102402/?

Primary stabbing headache in a tertiary headache centre

1 2025-10-16 min 58

TDCS TACS TRNS

Summary: INTRODUCTION: Primary stabbing headache (PSH) is a short-lasting head pain occurring spontaneously in the absence of underlying structural causes. Although it is a frequent disorder, with a reported lifetime prevalence of 35.2% in the general population, its pathophysiological underpinnings remain i...

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



1 63 min words

TDCS TACS TRNS

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

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High-intensity transcranial alternating current stimulation combined with pharmacotherapy for adolescent major depressive disorder: a prospective case report study

Summary: CONCLUSIONS: The combination of HI-tACS and pharmacotherapy demonstrated potential early effects in this small cohort of adolescents with MDD, particularly during the initial phase of treatment. These preliminary findings warrant further investigation through large-scale randomized controlled trials...

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Non-invasive brain stimulation for suicidal ideation: a systematic review and metanalysis of the current literature









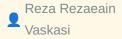
TDCS TACS TRNS

Summary: Data suggests that the available therapeutic tools are still insufficient to deal with suicidality. Non-Invasive Brain Stimulation techniques (NIBS) have entered the recognized guidelines for therapies in psychiatry due to the advantages related to safety and tolerability. The purpose of this review...

Read full article:

https://pubmed.ncbi.nlm.nih.gov/41103967/?

Active and sham transcranial direct-current stimulation (tDCS) plus core stability on the knee kinematic and performance of the lower limb of the soccer players with dynamic knee valgus; two armed randomized clinical trial





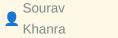




Summary: Dynamic knee valgus (DKV) is a prevalent risk factor for anterior cruciate ligament (ACL) injuries in soccer players, particularly during noncontact mechanisms. Transcranial direct-current stimulation (tDCS) and core stability exercises have shown promise in enhancing motor control and biomechanical...

https://pubmed.ncbi.nlm.nih.gov/41103970/?

Effect of Precision-based HD-tDCS Over Conventional HDtDCS in Young-onset Mania: Protocol for an Active **Comparison fMRI and TMS Study**







TDCS TACS TRNS

Summary: CONCLUSIONS: This study protocol aims to explore the effect of novel precision-based HD-tDCS in young-onset mania compared to conventional HD-tDCS, thereby allowing for the examination of precision neuromodulation in young-onset mania.

https://pubmed.ncbi.nlm.nih.gov/41104323/?

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Functional connectivity in whole-brain and network analysis differentiates minimally conscious from unresponsive patients: a resting-state fNIRS study











Summary: CONCLUSION: fNIRS could effectively detect abnormal brain network functional connectivity in DOC patients and could provide valuable insights for differentiating MCS and VS/UWS patients.

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Predicting Individual Response to Acupuncture in Sensorineural Tinnitus Using Integrated Functional Near-Infrared Spectroscopy and Machine Learning: Protocol for a Model Development and Validation Study



Summary: CONCLUSION: This study represents the first attempt to integrate fNIRS detection with machine learning techniques for predicting acupuncture efficacy in SNT treatment. The methodology addresses several key challenges in acupuncture research through comprehensive data collection and advanced analytic...

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Online Regulation of Task Difficulty based on Neuro- and Motor-feedback to improve engagement in Visual-motor Task





Summary: CONCLUSION: Our findings suggest that the proposed NMF system can enable online neural activity regulation in visual-motor tasks and achieve enhanced integration between cognitive and sensorimotor areas, with the potential to improve the rehabilitation training outcomes.

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Effect of lower limb mirror visual feedback on cortical activation in healthy subjects: a self-controlled randomized trail











Summary: CONCLUSION: LLMVF increases neural activity in the sensory and motor related areas, indicating that LLMVF can promote more activation of brain functional areas, which verifies the top-down positive effect of LLMVF.

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TSFNet: Temporal-Spatial Fusion Network for Hybrid Brain-Computer Interface









Summary: Unimodal brain-computer interfaces (BCIs) often suffer from inherent limitations due to the characteristic of using single modalities. While hybrid BCIs combining electroencephalography (EEG) and functional near-infrared spectroscopy (fNIRS) offer complementary advantages, effectively integrating th...

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Diagnostic Efficacy of Olfactory Function Test Using Functional Near-Infrared Spectroscopy with Machine Learning in Healthy Adults: A Prospective Diagnostic-Accuracy (Feasibility/Validation) Study in Healthy Adults with Algorithm Development



Summary: Background/Objectives: The YSK olfactory function (YOF) test is a culturally adapted psychophysical tool that assesses threshold, discrimination, and identification. This study evaluated whether functional near-infrared spectroscopy (fNIRS) synchronized with routine YOF testing, combined with machin...

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Enhanced Activation in the Dorsolateral Prefrontal Cortex and Inferior Parietal Lobule During Recovery from Body Dissatisfaction



Summary: Previous studies have examined the neural mechanisms of body dissatisfaction. This study aimed to investigate the neural basis of recovery from body dissatisfaction. Sixty-seven young women participated in this study, engaging in a fat talk-a conversation known to induce body dissatisfaction-followe...

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Immediate modulation effects of Tongue Tri-needle on brain functional networks in infratentorial stroke patients with dysphagia: a randomized controlled trial



Yan
Chen

1
2025-10-17
min

59
words







Summary: CONCLUSION: Infratentorial stroke patients with dysphagia exhibit disrupted functional connectivity within the fronto-temporo-sensorimotor network, which is associated with clinical impairment. Tongue Tri-needle multi-stage, selective reconfiguration of brain functional networks, particularly by mod...

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Riemannian geometry boosts functional near-infrared spectroscopy-based brain-state classification accuracy



1 37 min words







Summary: CONCLUSION: To our knowledge, we are the first to demonstrate that the proposed Riemannian-geometry-based classification approach is both powerful and viable for fNIRS data, substantially increasing the accuracy in binary and multi-class classification of brain activation patterns.

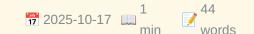
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Sensitive and specific fNIRS-based approach for awareness detection in disorders of consciousness: proof of principle in healthy adults







Summary: CONCLUSION: This individualized diagnostic approach may have the potential to significantly enhance diagnostic accuracy for DoCs. It provides a noninvasive, efficient, and objective assessment, potentially reducing the rate of misdiagnosis rates. The practicality and minimal technical requirements o...

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Effectiveness of Electroencephalographic Neurofeedback for Parkinson's Disease: A Systematic Review and Meta-Analysis









BRAIN COMPUTER INTERFACE

Summary: Background: Electroencephalographic (EEG) neurofeedback training is gaining traction as a non-pharmacological treatment option for Parkinson's disease (PD). This paper reports the first pre-registered, integrated systematic review and meta-analysis of studies examining the effects of EEG neurofeedba...

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A Novel Grasping Robot Control Method Using Motion **Execution BCI Combining Knowledge Reasoning**

Wen

1 68 min words

BRAIN COMPUTER INTERFACE

Summary: Recently, with the growing number of disabled people, brain-controlled technology offers a novel way to help patients restore their daily abilities. However, the conventional brain-controlled system based on the motion related task lacks intelligence in real-world environments. To address above prob...

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Advances in flexible high-density microelectrode arrays for brain-computer interfaces

1 61 min words



BRAIN COMPUTER INTERFACE

Summary: Recent advances in flexible high-density microelectrode arrays (FHD-MEA) have revolutionized brain-computer interfaces (BCIs) by providing high spatial resolution, mechanical compliance, and long-term biocompatibility. This technology enables stable neural recording and precise stimulation, addressi...

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Neural mechanism of the sexually dimorphic winner effect in mice



Summary: The "winner effect," where prior victories increase the likelihood of future wins, profoundly shapes social hierarchy dynamics and competitive motivation. Although human literature suggests a less pronounced winner effect in females, the neural mechanisms underlying these sex differences remain uncl...

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+e462414

Artificial intelligence and computer-aided diagnosis in diagnostic decisions: 5 questions for medical informatics and human-computer interface research









BRAIN COMPUTER INTERFACE

Summary: OBJECTIVES: Artificial intelligence (AI) has the potential to transform medical informatics by supporting clinical decision-making, reducing diagnostic errors, and improving workflows and efficiency. However, successful integration of AI-based decision support systems depends on careful consideratio...

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Diffusion trajectory of atypical morphological development in autism spectrum disorder

Xujun 1 68
Duan min words

BRAIN COMPUTER INTERFACE

Summary: Brain development from childhood through adolescence is crucial for understanding autism spectrum disorder (ASD). Yet how functional networks regulate developmental changes in brain morphology remains unclear. Here, we analyzed gray matter volume (GMV) and functional connectivity (FC) in 301 individ...

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A Moratorium on Implantable Non-Medical Neurotech Until **Effects on the Mind are Properly Understood**

2025-10-17 min 67 words





BRAIN COMPUTER INTERFACE

Summary: The development of non-medical consumer neurotechnology is gaining momentum. As companies chart the course for future implanted and invasive braincomputer interfaces (BCIs) in non-medical populations, the time has come for concrete steps toward their regulation. We propose three measures: First, a ...

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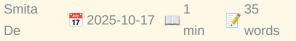
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Simple Prostatectomy is an Effective Option for BPH Patients With Hypocontractile Bladders







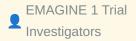


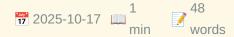
BRAIN COMPUTER INTERFACE

Summary: CONCLUSIONS: This is one of the first studies assessing outcomes of SP in patients with hypocontractile bladders. SP is an effective surgical option for patients with impaired detrusor function including those who are catheter dependent.

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Electromagnetic Stimulation to Reduce Disability After Ischemic Stroke: The EMAGINE Randomized Clinical Trial





BRAIN COMPUTER INTERFACE

Summary: CONCLUSION AND RELEVANCE: This trial found that ENTF therapy is safe. Although the difference between groups was not statistically significant, ENTF therapy may reduce global disability in patients with severe baseline disability after ischemic stroke. These results warrant confirmation in a higher ...

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+e462414

A different bimodal: case series of patients with a cochlear implant and a contralateral bone conduction implant

Mark
Chung

1 37 min words

BRAIN COMPUTER INTERFACE

Summary: CONCLUSION: The synergy of electrical and vibratory auditory stimulation observed in this case series provided subjective functional benefits and measurable speech perception benefits for some patients, while others experienced minimal or no measurable benefit and ceased usage.

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Free-threaded Python on GitHub Actions

1 23 pauloxnet min words





REDDIT PYTHON

Summary: <!-- SC OFF --><div class="md">https://hugovk.dev/blog/2025/free-threadedpython-on-github-actions/ </div><!-- SC ON --> submitted by /u/pauloxnet </...

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https://www.reddit.com/r/Python/comments/1o90fan/freethreaded python on github actions/

A narrative exploration of oxytocin and anxiety in autism spectrum disorder

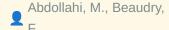
BRAIN RESEARCH

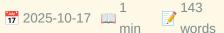
Summary: Publication date: 1 December 2025Source: Brain Research, Volume 1868Author(s): Shreya Koche, Mayuri Gajghate, Madhura Dixit Vinchurney, Mayur Kale, Brijesh Taksande, Milind Umekar, Rashmi Trivedi

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Fatty Acid Pathways Regulate Thermal Nociception in Caenorhabditis elegans









BIORXIV NEUROSCIENCE

Summary: Chronic pain remains a major unmet medical challenge, and lipid signaling pathways have emerged as key modulators of nociception. Using Caenorhabditis elegans as a genetically tractable model, we investigated how fatty acid composition influences thermal avoidance behavior. Mutant strains lacking fu...

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Representational Similarity and Pattern Classification of Fifteen Emotional States Induced by Movie Clips and Text Scenarios

Ding, Y., Muncy, N. M., Graner, J. L., White, J. S., Schutz, A. C., Faul, L., Pearson, J. M., LeBar, K. S.

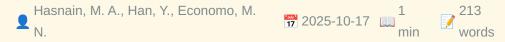
1 2025-10-17 min 245 words BIORXIV NEUROSCIENCE

Summary: Theoretical models emphasize that categorical factors, dimensional factors, or their combination may define the semantic space organization of emotion representations. While recent behavioral work has applied innovative multivariate methods for testing these theories, neuroscientific assessments rem...

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Mapping neural subspace dynamics onto the structure of the mouse descending motor system



BIORXIV NEUROSCIENCE

Summary: The motor cortex supports various cognitive and motor functions. To prevent interference between these processes, the associated neural dynamics may be organized into orthogonal subspaces. In this subspace model, activity in a movement-null subspace encodes internal processes, while activity in a mo...

https://www.biorxiv.org/content/10.1101/2025.10.17.682917v1?rss=1

What is next? Predictable visual sequences are encoded with anticipatory biases and reduced neural responses

Bai, S., Pascucci, d., Menetrey,

M

1

135

words

BIORXIV NEUROSCIENCE

Summary: Objects in motion follow predictable trajectories that the brain can easily anticipate. We investigated the underlying neural mechanisms, focusing on a form of representational momentum (RM), whereby the final state of a rotating object is misperceived along its future trajectory. Participants viewe...

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Parkinsonism disrupts the balance between excitatory and inhibitory activity within the primary motor cortex during movement

Biswaranjan MohantyZheshan GuoLuke A. JohnsonJing WangJerrold L. VitekaDepartment of Neurology, University of Minnesota, Minneapolis, MN 55455

1 52 min words



PNAS NEUROSCIENCE

Summary: Proceedings of the National Academy of Sciences, Volume 122, Issue 42, October 2025.

SignificanceThe primary motor cortex (M1) is a critical component for the generation of movement via corticospinal projections. In this study, we focused on how Parkinsonism alters M1 neuronal spiking activity...

https://www.pnas.org/doi/abs/10.1073/pnas.2510287122?af=R

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

Maria Carla
Piastra

1
2024-06-14

min

64

words

OOSTENVELD ROBERT

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

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



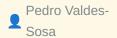
1 72 min words

OOSTENVELD ROBERT

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

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

One hundred years of EEG for brain and behaviour research







OOSTENVELD ROBERT

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









OOSTENVELD ROBERT

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

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

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

Krzysztof J
Gorgolewski

1 2024-09-23 min 82
words

OOSTENVELD ROBERT

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

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



1 65 min words

OOSTENVELD ROBERT

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

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

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



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

Zehl

Zo25-06-26 min

Zostenveld robert

Oostenveld robert





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

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

Tim M
Tierney

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

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Optimal configuration of on-scalp OPMs with fixed channel counts







OOSTENVELD ROBERT

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

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

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

Thomas
Hummel

Thomas

Tactile Acuity

Thomas

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

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

Hiroyuki

1 75
min words

TACTILE ACUITY

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

Read full article:

https://pubmed.ncbi.nlm.nih.gov/40526544/?

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

Leah R

Bent

1

2025-06-27

min

69

words

TACTILE ACUITY

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

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Directional vibro-tactile hazard warnings for drivers with vision impairments

Alex R

Bowers

1

80

min

words

TACTILE ACUITY

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Paula Anne Newman-Casev

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Riemannian geometry boosts functional near-infrared spectroscopy-based brain-state classification accuracy



1 37 min words





FNIRS

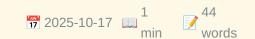
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Sensitive and specific fNIRS-based approach for awareness detection in disorders of consciousness: proof of principle in healthy adults







Summary: CONCLUSION: This individualized diagnostic approach may have the potential to significantly enhance diagnostic accuracy for DoCs. It provides a noninvasive, efficient, and objective assessment, potentially reducing the rate of misdiagnosis rates. The practicality and minimal technical requirements o...

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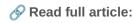
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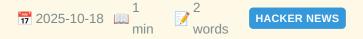


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Ring cameras are about to get increasingly chummy with law enforcement



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Modeling cognition through adaptive neural synchronization: a multimodal framework using EEG, fMRI, and reinforcement learning



FRONTIERS COMPUTATIONAL NEUROSCIENCE

Summary: IntroductionUnderstanding the cognitive process of thinking as a neural phenomenon remains a central challenge in neuroscience and computational modeling. This study addresses this challenge by presenting a biologically grounded framework that simulates adaptive decision making across cognitive stat...

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Neuron synchronization analyzed through spatial-temporal attention



FRONTIERS COMPUTATIONAL NEUROSCIENCE

Summary: Neuronal synchronization refers to the temporal coordination of activity across populations of neurons, a process that underlies coherent information processing, supports the encoding of diverse sensory stimuli, and facilitates adaptive behavior in dynamic environments. Previous studies of synchroni...

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Clinical Potential of Essential Oils: Cytotoxicity, Selectivity Index, and Efficacy for Combating Gram-Positive ESKAPE Pathogens



Summary: (1) Background: Essential oils (EOs) have emerged as promising antibacterial agents due to their broad-spectrum activity and low risk of resistance development. Therefore, this review aimed to assess the effectiveness of EOs against Gram-positive ESKAPE pathogens, and to evaluate their safety and to...

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Artificial Intelligence-Enhanced Liquid Biopsy and Radiomics in Early-Stage Lung Cancer Detection: A Precision Oncology **Paradigm**

Shivaram P
Arunachalam

1 57 Low vision min words

Summary: CONCLUSION: The integration of AI with liquid biopsy and radiomics holds transformative potential for early lung cancer detection. This non-invasive, scalable, and individualized diagnostic paradigm could significantly reduce lung cancer mortality through timely and targeted interventions. As techno...

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One-Hot Multi-Level Leaky Integrate-and-Fire Spiking Neural Networks for Enhanced Accuracy-Latency Tradeoff









Summary: Spiking neural networks (SNNs) hold significant promise as energy-efficient alternatives to conventional artificial neural networks (ANNs). However, SNNs require computations across multiple timesteps, resulting in increased latency, heightened energy consumption, and additional memory access overhe...

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Artificial intelligence and computer-aided diagnosis in diagnostic decisions: 5 questions for medical informatics and human-computer interface research









LOW VISION

Summary: OBJECTIVES: Artificial intelligence (AI) has the potential to transform medical informatics by supporting clinical decision-making, reducing diagnostic errors, and improving workflows and efficiency. However, successful integration of AI-based decision support systems depends on careful consideratio...

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OsiriXGPT: An Innovative AI Co-pilot Plug-In for Seamless **Deployment of Generative AI Models in Scan-to-Scan Reporting Workflows**







LOW VISION

Summary: Generative Artificial Intelligence (GenAI) has the potential to transform radiology by reducing reporting burdens, enhancing diagnostic workflows and facilitating communication of complex radiological information. However, research and adoption remain limited due to the lack of seamless integration ...

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Artificial intelligence-assisted glaucoma detection on color fundus images: with comorbidity and cross-institutional analysis





LOW VISION

Summary: CONCLUSION: The proposed AI system can detect glaucoma on standard color fundus photographs with high accuracy across clinical environments and in the presence of comorbid eye diseases. The system may be a practical and affordable tool for large-scale glaucoma screening, particularly in institutions...

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Rapid and accurate prediction of cycloplegic refraction in Chinese children: development and validation of machine learning models



Summary: CONCLUSIONS: The ML models enable cSE prediction based on non-cycloplegic refraction data and ocular biometric parameters, providing a fast, practical method for estimating refractive error. Multicenter validation and targeted oversampling of rare refractive subgroups are required, however, before r...

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3-Year Comparison Of Two Mix-And-Match Strategies: **Enhanced Monofocal And Trifocal Versus Enhanced Monofocal And Trifocal EDOF IOLs**





1 2025-10-17 min 45 words Low VISION

Summary: CONCLUSIONS: Combined implantation of enhanced monofocal and trifocal/ trifocal EDOF IOLs yields excellent distance and intermediate vision. Near visual acuity and spectacle independence was higher in the Isopure-HP group. Low incidence of photic phenomena and high patient satisfaction highlight the ...

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Donor Diabetes and 1-Year Descemet Membrane Endothelial Keratoplasty Success Rate: A Randomized Clinical Trial









Summary: CONCLUSIONS AND RELEVANCE: The 1-year success rate in eyes undergoing DMEK with successfully prepared tissue was very high regardless of donor diabetes status. These results, supported by the separately reported finding that endothelial cell loss and cornea morphometry after 1 year were not affected...

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JOANet: An Integrated Joint Optimization Architecture Making Medical Image Segmentation Really Helped by Superresolution Pre-processing







Summary: Conventional computer vision pipelines typically treat low-level enhancement and high-level semantic tasks as isolated processes, focusing on optimizing enhancement for perceptual quality rather than computational utility, neglecting semantic task requirements. To bridge this gap, this paper propose...

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

Thomas
Hummel

Thomas

Tactile Acuity

Thomas

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

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

Hiroyuki

1 75
min words

TACTILE ACUITY

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

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

Leah R

Bent

1

2025-06-27

min

69

words

TACTILE ACUITY

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

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Directional vibro-tactile hazard warnings for drivers with vision impairments

Alex R

Bowers

1

80

min

words

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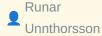
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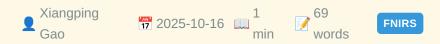
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Yan
Chen

1
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Riemannian geometry boosts functional near-infrared spectroscopy-based brain-state classification accuracy











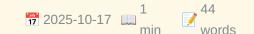
Summary: CONCLUSION: To our knowledge, we are the first to demonstrate that the proposed Riemannian-geometry-based classification approach is both powerful and viable for fNIRS data, substantially increasing the accuracy in binary and multi-class classification of brain activation patterns.

Read full article:

https://pubmed.ncbi.nlm.nih.gov/41104354/?

Sensitive and specific fNIRS-based approach for awareness detection in disorders of consciousness: proof of principle in healthy adults







Summary: CONCLUSION: This individualized diagnostic approach may have the potential to significantly enhance diagnostic accuracy for DoCs. It provides a noninvasive, efficient, and objective assessment, potentially reducing the rate of misdiagnosis rates. The practicality and minimal technical requirements o...

⊗ Read full article:

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Effectiveness of Electroencephalographic Neurofeedback for Parkinson's Disease: A Systematic Review and Meta-Analysis









BRAIN COMPUTER INTERFACE

Summary: Background: Electroencephalographic (EEG) neurofeedback training is gaining traction as a non-pharmacological treatment option for Parkinson's disease (PD). This paper reports the first pre-registered, integrated systematic review and meta-analysis of studies examining the effects of EEG neurofeedba...

Read full article:

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A Novel Grasping Robot Control Method Using Motion **Execution BCI Combining Knowledge Reasoning**

Wen

1 68 min words

BRAIN COMPUTER INTERFACE

Summary: Recently, with the growing number of disabled people, brain-controlled technology offers a novel way to help patients restore their daily abilities. However, the conventional brain-controlled system based on the motion related task lacks intelligence in real-world environments. To address above prob...

https://pubmed.ncbi.nlm.nih.gov/41100231/?

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Advances in flexible high-density microelectrode arrays for brain-computer interfaces



1 61 min words



BRAIN COMPUTER INTERFACE

Summary: Recent advances in flexible high-density microelectrode arrays (FHD-MEA) have revolutionized brain-computer interfaces (BCIs) by providing high spatial resolution, mechanical compliance, and long-term biocompatibility. This technology enables stable neural recording and precise stimulation, addressi...

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Neural mechanism of the sexually dimorphic winner effect in mice



Summary: The "winner effect," where prior victories increase the likelihood of future wins, profoundly shapes social hierarchy dynamics and competitive motivation. Although human literature suggests a less pronounced winner effect in females, the neural mechanisms underlying these sex differences remain uncl...

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+e462414

Artificial intelligence and computer-aided diagnosis in diagnostic decisions: 5 questions for medical informatics and human-computer interface research









BRAIN COMPUTER INTERFACE

Summary: OBJECTIVES: Artificial intelligence (AI) has the potential to transform medical informatics by supporting clinical decision-making, reducing diagnostic errors, and improving workflows and efficiency. However, successful integration of AI-based decision support systems depends on careful consideratio...

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Diffusion trajectory of atypical morphological development in autism spectrum disorder

Xujun 1 68
Duan min words

BRAIN COMPUTER INTERFACE

Summary: Brain development from childhood through adolescence is crucial for understanding autism spectrum disorder (ASD). Yet how functional networks regulate developmental changes in brain morphology remains unclear. Here, we analyzed gray matter volume (GMV) and functional connectivity (FC) in 301 individ...

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A Moratorium on Implantable Non-Medical Neurotech Until **Effects on the Mind are Properly Understood**

2025-10-17 min 67 words





BRAIN COMPUTER INTERFACE

Summary: The development of non-medical consumer neurotechnology is gaining momentum. As companies chart the course for future implanted and invasive braincomputer interfaces (BCIs) in non-medical populations, the time has come for concrete steps toward their regulation. We propose three measures: First, a ...

https://pubmed.ncbi.nlm.nih.gov/41104262/?

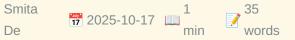
utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1rSUu-tbw4049Wgf RdKXdtNCvGW0lVBZFpHe7zaN4k4DwoD5&fc=None&ff=20251017193737&v=2.18.0.post9 +e462414

Simple Prostatectomy is an Effective Option for BPH Patients With Hypocontractile Bladders









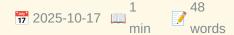
BRAIN COMPUTER INTERFACE

Summary: CONCLUSIONS: This is one of the first studies assessing outcomes of SP in patients with hypocontractile bladders. SP is an effective surgical option for patients with impaired detrusor function including those who are catheter dependent.

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Electromagnetic Stimulation to Reduce Disability After Ischemic Stroke: The EMAGINE Randomized Clinical Trial





BRAIN COMPUTER INTERFACE

Summary: CONCLUSION AND RELEVANCE: This trial found that ENTF therapy is safe. Although the difference between groups was not statistically significant, ENTF therapy may reduce global disability in patients with severe baseline disability after ischemic stroke. These results warrant confirmation in a higher ...

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+e462414

A different bimodal: case series of patients with a cochlear implant and a contralateral bone conduction implant

Mark Chung

1 37 min words

BRAIN COMPUTER INTERFACE

Summary: CONCLUSION: The synergy of electrical and vibratory auditory stimulation observed in this case series provided subjective functional benefits and measurable speech perception benefits for some patients, while others experienced minimal or no measurable benefit and ceased usage.

https://pubmed.ncbi.nlm.nih.gov/41105834/?

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State dependent shifts in large scale functional topographies

Wang, Y., DeKraker, J., Cruces, R. R., Cabalo, D. G., Royer, J., Ngo, A., Smith, M., McKeown, B.,

Hwang, Y., Leppert, I., Vanderwal, T., Spreng, N., Valk, S., Smallwood, J., Evans, A. C., Bernhardt, B.

1 167 BIORXIV NEUROSCIENCE

Summary: Although functional networks can be consistently identified across cognitive states, they also undergo dynamic reconfigurations across different contexts. For example, naturalistic movie watching paradigms amplify activity in sensory systems compared to resting conditions. However, it remains unclea...

https://www.biorxiv.org/content/10.1101/2025.10.16.682912v1?rss=1

Synchrony-driven Assemblies Reliably Represent Complex Stimuli in Ferret Auditory Cortex

Rakowski, 1 173 BIORXIV NEUROSCIENCE

Summary: Neuronal assemblies defined by coordination at high temporal resolution are thought to act as functional modules for information processing throughout the brain. Here, we develop a new method for identifying these assemblies from analytical tests of pairwise synchrony, benefiting from three rigorous...

https://www.biorxiv.org/content/10.1101/2025.10.17.683032v1?rss=1

Adaptive recruitment of cortex-wide recurrence for visual object recognition

Oyarzo, P., Singer, J., Kar, K., Vidaurre, D., Cichy, R.

BIORXIV NEUROSCIENCE

Summary: Theories of the neural mechanism underpinning rapid recognition debate whether it relies solely on a feedforward sweep through the ventral stream or instead requires recurrent processing, possibly engaging additional brain regions. Here we directly tested the "adaptive recurrence hypothesis", that a...

https://www.biorxiv.org/content/10.1101/2025.10.17.682937v1?rss=1

Improved inference of latent neural states from calcium imaging data

Keeley, S., Zoltowski, D. M., Charles, A., Pillow, J.

BIORXIV NEUROSCIENCE

Summary: Calcium imaging (CI) is a standard method for recording neural population activity, as it enables simultaneous recording of hundreds-to-thousands of individual somatic signals. Accordingly, CI recordings are prime candidates for population-level latent variable analyses, for example using models suc...

Read full article:

https://www.biorxiv.org/content/10.1101/2025.10.17.682993v1?rss=1

Preemptive SOD1 Silencing via Neonatal Intramuscular AAV Therapy Modifies Disease Trajectory in an ALS Mouse Model

Gong, X., Xie, Y., Wang, W., XU, 1 2025-10-17 min 198 words

BIORXIV NEUROSCIENCE

Summary: Amyotrophic lateral sclerosis (ALS) is a fatal neurodegenerative disorder with limited treatment options. Mutations in SOD1 are a leading genetic cause of familial ALS, driving motor neuron degeneration through toxic gain-of-function mechanisms. While gene silencing strategies targeting SOD1 hold th...

https://www.biorxiv.org/content/10.1101/2025.10.17.682996v1?rss=1

Paw switching with lateralized cholinergic modulation

Okamoto, K., Tanaka, Y. R., Kato, S., Xie, S., Li, G., Kobayashi, K., Koike, M., Li, Y., Hioki,

1 2025-10-17 min 168 words

Summary: Motor preferences, such as handedness, reflect fundamental asymmetries in brain function and behavior across vertebrate species, including humans and rodents1. Although individual hand or paw preferences are typically stable, they can be reshaped through experience or training, underscoring the plas...

https://www.biorxiv.org/content/10.1101/2025.10.17.683000v1?rss=1

Poised for action

William P. 1 11
Olson min words



NATURE NEUROSCIENCE

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

S Read full article:

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

Astrocytes make room for microglia







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

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

This Week in The Journal









McKeon,
P. 2025-09-17 min Journal Neuroscience this week

http://www.jneurosci.org/cgi/content/short/45/38/etwij45382025?rss=1

This Week in The Journal









McKeon,
P

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2025-09-24

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JOURNAL NEUROSCIENCE THIS WEEK

http://www.jneurosci.org/cgi/content/short/45/39/etwij45392025?rss=1

This Week in The Journal





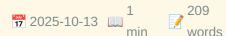




http://www.jneurosci.org/cgi/content/short/45/40/etwij45402025?rss=1

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







FRONTIERS HUMAN NEUROSCIENCE

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

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

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

Ruggero 1 201 Eugeni min words

FRONTIERS HUMAN NEUROSCIENCE

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

⊗ Read full article:

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

4D trajectory prediction for inbound flights



 Jie
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 Dai
 17

 2025-09-17
 min

 177
 words



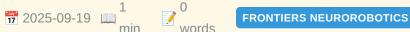
FRONTIERS NEUROROBOTICS

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

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

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









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

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









FRONTIERS NEUROROBOTICS

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



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

E-Sort: empowering end-to-end neural network for multichannel spike sorting with transfer learning and fast postprocessing

Yuntao Han and Shiwei

1 272 min words

JOURNAL NEURAL ENGINEERING

Summary: Objective. Spike sorting, which involves detecting and attributing spikes to their putative neurons from extracellular recordings, is a common process in electrophysiology and brain-computer interface systems. Recent advances in large-scale neural recording technologies are challenging the conventio...

http://iopscience.iop.org/article/10.1088/1741-2552/ae0d33

Clinical Potential of Essential Oils: Cytotoxicity, Selectivity Index, and Efficacy for Combating Gram-Positive ESKAPE **Pathogens**



Mark 1 73 Willcox min words

LOW VISION

Summary: (1) Background: Essential oils (EOs) have emerged as promising antibacterial agents due to their broad-spectrum activity and low risk of resistance development. Therefore, this review aimed to assess the effectiveness of EOs against Gram-positive ESKAPE pathogens, and to evaluate their safety and to...

https://pubmed.ncbi.nlm.nih.gov/41097295/?

Artificial Intelligence-Enhanced Liquid Biopsy and Radiomics in Early-Stage Lung Cancer Detection: A Precision Oncology **Paradigm**

Shivaram P Arunachalam

1 57 Low vision min words

Summary: CONCLUSION: The integration of AI with liquid biopsy and radiomics holds transformative potential for early lung cancer detection. This non-invasive, scalable, and individualized diagnostic paradigm could significantly reduce lung cancer mortality through timely and targeted interventions. As techno...

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One-Hot Multi-Level Leaky Integrate-and-Fire Spiking Neural Networks for Enhanced Accuracy-Latency Tradeoff



1 65 min words



LOW VISION

Summary: Spiking neural networks (SNNs) hold significant promise as energy-efficient alternatives to conventional artificial neural networks (ANNs). However, SNNs require computations across multiple timesteps, resulting in increased latency, heightened energy consumption, and additional memory access overhe...

Read full article:

https://pubmed.ncbi.nlm.nih.gov/41098230/?

Artificial intelligence and computer-aided diagnosis in diagnostic decisions: 5 questions for medical informatics and human-computer interface research









LOW VISION

Summary: OBJECTIVES: Artificial intelligence (AI) has the potential to transform medical informatics by supporting clinical decision-making, reducing diagnostic errors, and improving workflows and efficiency. However, successful integration of AI-based decision support systems depends on careful consideratio...

https://pubmed.ncbi.nlm.nih.gov/41101774/?

OsiriXGPT: An Innovative AI Co-pilot Plug-In for Seamless **Deployment of Generative AI Models in Scan-to-Scan Reporting Workflows**





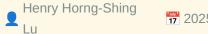


LOW VISION

Summary: Generative Artificial Intelligence (GenAI) has the potential to transform radiology by reducing reporting burdens, enhancing diagnostic workflows and facilitating communication of complex radiological information. However, research and adoption remain limited due to the lack of seamless integration ...

https://pubmed.ncbi.nlm.nih.gov/41102424/?

Artificial intelligence-assisted glaucoma detection on color fundus images: with comorbidity and cross-institutional analysis







LOW VISION

Summary: CONCLUSION: The proposed AI system can detect glaucoma on standard color fundus photographs with high accuracy across clinical environments and in the presence of comorbid eye diseases. The system may be a practical and affordable tool for large-scale glaucoma screening, particularly in institutions...

https://pubmed.ncbi.nlm.nih.gov/41102915/?

Rapid and accurate prediction of cycloplegic refraction in Chinese children: development and validation of machine learning models



Summary: CONCLUSIONS: The ML models enable cSE prediction based on non-cycloplegic refraction data and ocular biometric parameters, providing a fast, practical method for estimating refractive error. Multicenter validation and targeted oversampling of rare refractive subgroups are required, however, before r...

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3-Year Comparison Of Two Mix-And-Match Strategies: **Enhanced Monofocal And Trifocal Versus Enhanced Monofocal And Trifocal EDOF IOLs**



1 2025-10-17 min 45 words Low VISION

Summary: CONCLUSIONS: Combined implantation of enhanced monofocal and trifocal/ trifocal EDOF IOLs yields excellent distance and intermediate vision. Near visual acuity and spectacle independence was higher in the Isopure-HP group. Low incidence of photic phenomena and high patient satisfaction highlight the ...

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Donor Diabetes and 1-Year Descemet Membrane Endothelial Keratoplasty Success Rate: A Randomized Clinical Trial







LOW VISION

Summary: CONCLUSIONS AND RELEVANCE: The 1-year success rate in eyes undergoing DMEK with successfully prepared tissue was very high regardless of donor diabetes status. These results, supported by the separately reported finding that endothelial cell loss and cornea morphometry after 1 year were not affected...

Read full article:

https://pubmed.ncbi.nlm.nih.gov/41105094/?

JOANet: An Integrated Joint Optimization Architecture Making Medical Image Segmentation Really Helped by Superresolution Pre-processing







Summary: Conventional computer vision pipelines typically treat low-level enhancement and high-level semantic tasks as isolated processes, focusing on optimizing enhancement for perceptual quality rather than computational utility, neglecting semantic task requirements. To bridge this gap, this paper propose...

https://pubmed.ncbi.nlm.nih.gov/41105537/?

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

Thomas
Hummel

Thomas

Tactile Acuity

Thomas

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

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

Hiroyuki

1 75
min words

TACTILE ACUITY

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

Read full article:

https://pubmed.ncbi.nlm.nih.gov/40526544/?

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

Leah R

Bent

1

2025-06-27

min

69

words

TACTILE ACUITY

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

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

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Directional vibro-tactile hazard warnings for drivers with vision impairments





TACTILE ACUITY

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

https://pubmed.ncbi.nlm.nih.gov/40601880/?

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



1 2025-08-01 min 64 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



1 22 min 2025-08-24 min 22





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

https://pubmed.ncbi.nlm.nih.gov/40850311/?

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

Paula Anne Newman-Casev

1 74 TACTILE ACUITY words

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

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

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

Sviatoslav N Bagriantsev

1 2025-09-13 min 58 words

TACTILE ACUITY

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

https://pubmed.ncbi.nlm.nih.gov/40945511/?

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

Charles M

Greenspon

1

86

words

TACTILE ACUITY

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

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

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









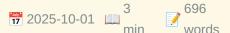
TACTILE ACUITY

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

Read full article:

https://pubmed.ncbi.nlm.nih.gov/41007234/?

Monthly Updates [Oct]





FMHY

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



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

De-emojifying scripts - setting yourself apart from LLMs





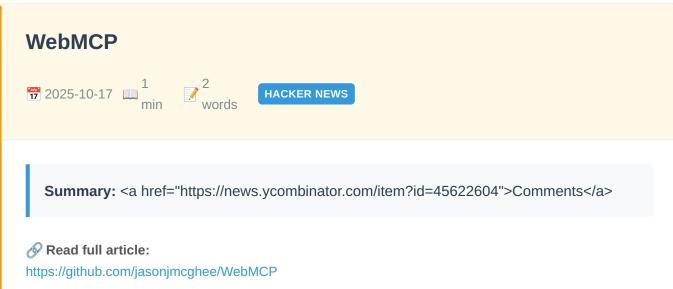


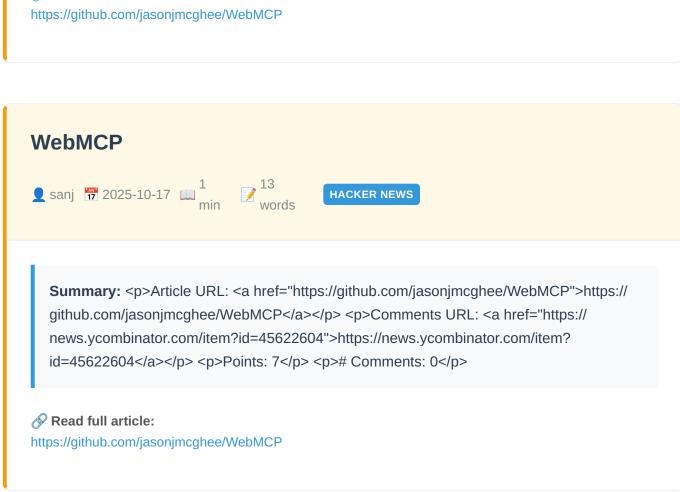
REDDIT PYTHON

Summary: <!-- SC_OFF --><div class="md">I am wondering if anyone else has had to actively try to set themselves apart from LLMs. That is, to convince others that you made something with blood, sweat and tears rather than clanker oil. For context, I'm the maintainer of <a href="https://github.com/jc...



https://www.reddit.com/r/Python/comments/109ar5b/deemojifying_scripts_setting_yourself_apart_from/





Promoted on Sunday, Fired on Monday: Inside a NASA Office's Sudden Closure

ironyman 72 2025-10-17 min 13 words Words

Summary: Article URL: https://www.planetary.org/articles/promoted-on-sunday-fired-on-monday-inside-a-nasa-offices-sudden-closure
Comments URL: https://news.ycombinator.c...

⊗ Read full article:

https://www.planetary.org/articles/promoted-on-sunday-fired-on-monday-inside-a-nasa-offices-sudden-closure

Rehabilitation techniques to improve lower limb function for children with bilateral spastic cerebral palsy: a systematic review and meta-analysis

1 16 NEUROSCIENCE JOURNAL

Summary: Publication date: 19 November 2025Source:
Neuroscience, Volume 588Author(s): Huijuan Lin, Xiaoying Zhang, Tingting Chen, Kaishou Xu

Read full article:

https://www.sciencedirect.com/science/article/pii/S0306452225009911?dgcid=rss_sd_all

Beyond Krabbe disease, the intriguing connection of galactocerebrosidase (GALC) with nervous system illness: A novel risk factor?

NEUROSCIENCE JOURNAL

Summary: Publication date: 19 November 2025Source: Neuroscience, Volume 588Author(s): Nadia Papini, Cristina Tringali

https://www.sciencedirect.com/science/article/pii/S0306452225010127?dgcid=rss_sd_all

Neurobiochemical alterations in patients with idiopathic Parkinson's disease in sensorimotor cortex using <sup>1</ sup>H-MRS





NEUROSCIENCE JOURNAL

Summary: Publication date: 19 November 2025Source: Neuroscience, Volume 588Author(s): Sadhana Kumari, S Senthil Kumaran, Roopa Rajan, Sakshi Arora, Shefali Chaudhary, Achal Kumar Srivastava, Richard Anthony Edward Edden

Read full article:

https://www.sciencedirect.com/science/article/pii/S0306452225010061?dqcid=rss sd all

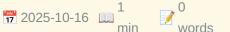
Astragalin rescues Cadmium-induced cognitive decline by revering glial metabolic reprogramming and neuroinflammation via the mTOR/HIF-1α axis



Summary: Publication date: 19 November 2025Source: Neuroscience, Volume 588Author(s): Qin Huang, Jun Wang, Min-Min Cao, Hui-Yong Ma, Xiao-Yan Qin, Yang Hu, Rongfeng Lan

https://www.sciencedirect.com/science/article/pii/S0306452225010024?dgcid=rss_sd_all

Inhibition of the lateral hypothalamus emboldens adult female spiny mice to huddle with an established group of novel peers







NATURE NEUROSCIENCE SUBJECTS

https://www.nature.com/articles/s41598-025-20283-4

OPTN protects retinal ganglion cells and ameliorates neuroinflammation in optic neuropathies



⊗ Read full article:

https://www.nature.com/articles/s42003-025-08534-6

Convolutional neural network based system for fully automatic FLAIR MRI segmentation in multiple sclerosis diagnosis



https://www.nature.com/articles/s41598-025-14112-x

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

Maria Carla
Piastra

1
2024-06-14

min

64

words

OOSTENVELD ROBERT

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

https://pubmed.ncbi.nlm.nih.gov/38873838/?

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



1 72 min words

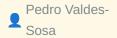


OOSTENVELD ROBERT

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

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

One hundred years of EEG for brain and behaviour research







OOSTENVELD ROBERT

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









OOSTENVELD ROBERT

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

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

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

Krzysztof J
Gorgolewski

1 2024-09-23 min 82
words

OOSTENVELD ROBERT

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

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



1 65 min words

OOSTENVELD ROBERT

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

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

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



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...

https://pubmed.ncbi.nlm.nih.gov/39870674/?

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



Lyuba
Zehl

Zehl

Zo25-06-26 min

Zostenveld robert

Oostenveld robert



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

Read full article:

https://pubmed.ncbi.nlm.nih.gov/40568426/?

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

Tim M
Tierney

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

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

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Optimal configuration of on-scalp OPMs with fixed channel counts



1 69 min words





OOSTENVELD ROBERT

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

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

Clinical Potential of Essential Oils: Cytotoxicity, Selectivity Index, and Efficacy for Combating Gram-Positive ESKAPE Pathogens



Summary: (1) Background: Essential oils (EOs) have emerged as promising antibacterial agents due to their broad-spectrum activity and low risk of resistance development. Therefore, this review aimed to assess the effectiveness of EOs against Gram-positive ESKAPE pathogens, and to evaluate their safety and to...

⊗ Read full article:

https://pubmed.ncbi.nlm.nih.gov/41097295/?

Artificial Intelligence-Enhanced Liquid Biopsy and Radiomics in Early-Stage Lung Cancer Detection: A Precision Oncology **Paradigm**

Shivaram P Arunachalam

1 2025-10-16 min 57 Low vision

Summary: CONCLUSION: The integration of AI with liquid biopsy and radiomics holds transformative potential for early lung cancer detection. This non-invasive, scalable, and individualized diagnostic paradigm could significantly reduce lung cancer mortality through timely and targeted interventions. As techno...

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One-Hot Multi-Level Leaky Integrate-and-Fire Spiking Neural Networks for Enhanced Accuracy-Latency Tradeoff



1 65 min words



LOW VISION

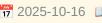
Summary: Spiking neural networks (SNNs) hold significant promise as energy-efficient alternatives to conventional artificial neural networks (ANNs). However, SNNs require computations across multiple timesteps, resulting in increased latency, heightened energy consumption, and additional memory access overhe...

Read full article:

https://pubmed.ncbi.nlm.nih.gov/41098230/?

Artificial intelligence and computer-aided diagnosis in diagnostic decisions: 5 questions for medical informatics and human-computer interface research









LOW VISION

Summary: OBJECTIVES: Artificial intelligence (AI) has the potential to transform medical informatics by supporting clinical decision-making, reducing diagnostic errors, and improving workflows and efficiency. However, successful integration of AI-based decision support systems depends on careful consideratio...

https://pubmed.ncbi.nlm.nih.gov/41101774/?

OsiriXGPT: An Innovative AI Co-pilot Plug-In for Seamless **Deployment of Generative AI Models in Scan-to-Scan Reporting Workflows**







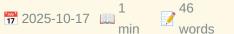
LOW VISION

Summary: Generative Artificial Intelligence (GenAI) has the potential to transform radiology by reducing reporting burdens, enhancing diagnostic workflows and facilitating communication of complex radiological information. However, research and adoption remain limited due to the lack of seamless integration ...

https://pubmed.ncbi.nlm.nih.gov/41102424/?

Artificial intelligence-assisted glaucoma detection on color fundus images: with comorbidity and cross-institutional analysis







LOW VISION

Summary: CONCLUSION: The proposed AI system can detect glaucoma on standard color fundus photographs with high accuracy across clinical environments and in the presence of comorbid eye diseases. The system may be a practical and affordable tool for large-scale glaucoma screening, particularly in institutions...

https://pubmed.ncbi.nlm.nih.gov/41102915/?

Rapid and accurate prediction of cycloplegic refraction in Chinese children: development and validation of machine learning models







LOW VISION

Summary: CONCLUSIONS: The ML models enable cSE prediction based on noncycloplegic refraction data and ocular biometric parameters, providing a fast, practical method for estimating refractive error. Multicenter validation and targeted oversampling of rare refractive subgroups are required, however, before r...

https://pubmed.ncbi.nlm.nih.gov/41104797/?

3-Year Comparison Of Two Mix-And-Match Strategies: **Enhanced Monofocal And Trifocal Versus Enhanced Monofocal And Trifocal EDOF IOLs**



1 2025-10-17 min 45 words Low VISION

Summary: CONCLUSIONS: Combined implantation of enhanced monofocal and trifocal/ trifocal EDOF IOLs yields excellent distance and intermediate vision. Near visual acuity and spectacle independence was higher in the Isopure-HP group. Low incidence of photic phenomena and high patient satisfaction highlight the ...

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Donor Diabetes and 1-Year Descemet Membrane Endothelial Keratoplasty Success Rate: A Randomized Clinical Trial









Summary: CONCLUSIONS AND RELEVANCE: The 1-year success rate in eyes undergoing DMEK with successfully prepared tissue was very high regardless of donor diabetes status. These results, supported by the separately reported finding that endothelial cell loss and cornea morphometry after 1 year were not affected...

Read full article:

https://pubmed.ncbi.nlm.nih.gov/41105094/?

JOANet: An Integrated Joint Optimization Architecture Making Medical Image Segmentation Really Helped by Superresolution Pre-processing







Summary: Conventional computer vision pipelines typically treat low-level enhancement and high-level semantic tasks as isolated processes, focusing on optimizing enhancement for perceptual quality rather than computational utility, neglecting semantic task requirements. To bridge this gap, this paper propose...

https://pubmed.ncbi.nlm.nih.gov/41105537/?

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

Thomas
Hummel

Thomas

Tactile Acuity

Thomas

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

⊗ Read full article:

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

Hiroyuki

1 75
min words

TACTILE ACUITY

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

Read full article:

https://pubmed.ncbi.nlm.nih.gov/40526544/?

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

Leah R

Bent

1

2025-06-27

min

69

words

TACTILE ACUITY

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

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Directional vibro-tactile hazard warnings for drivers with vision impairments

Alex R

Bowers

1

80

min

words

TACTILE ACUITY

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

https://pubmed.ncbi.nlm.nih.gov/40601880/?

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







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

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









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

https://pubmed.ncbi.nlm.nih.gov/40850311/?

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

Paula Anne Newman-Casev

1 74 TACTILE ACUITY words

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

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

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

Sviatoslav N Bagriantsev

1 2025-09-13 min 58 words

TACTILE ACUITY

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

https://pubmed.ncbi.nlm.nih.gov/40945511/?

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

Charles M

Greenspon

1

86

words

TACTILE ACUITY

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

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

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









TACTILE ACUITY

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

Read full article:

https://pubmed.ncbi.nlm.nih.gov/41007234/?

Transcranial direct current stimulation (tDCS) for cognitive impairment in schizophrenia: A systematic review and metaanalysis of randomized controlled trials

Roberto Rodriguez
Jimenez

1

46

words

TDCS TACS TRNS

Summary: CONCLUSIONS: tDCS shows domain-specific potential for cognitive enhancement in schizophrenia, particularly in verbal learning. However, the small effect sizes, high heterogeneity, and limited methodological rigor of included trials warrant cautious interpretation. Future research should emphasize st...

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Cortical modulation by exogenous electric fields is consistent with electric dipoles

Maria V Sanchez-





TDCS TACS TRNS

Summary: Cortical activity can be modulated by endogenous and exogenous electric fields (EFs). Recent experimental and computational data suggested that endogenous EFmediated effects are compatible with electric dipoles, which contribute to the synchronization of neighboring cortical columns. Consistently, ...

Read full article:

https://pubmed.ncbi.nlm.nih.gov/41101621/?

A deep learning approach to artifact removal in Transcranial **Electrical Stimulation: From shallow methods to deep neural** networks and state space models

Aitor
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Summary: Transcranial Electrical Stimulation (tES) is a non-invasive neuromodulation technique that generates artifacts in simultaneous EEG recordings, hindering brain activity analysis. This study analyzes Machine Learning (ML) methods for tES noise artifact removal across three stimulation types: tDCS, tAC...

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Diffusion trajectory of atypical morphological development in autism spectrum disorder



1 2025-10-16 min 68





TDCS TACS TRNS

Summary: Brain development from childhood through adolescence is crucial for understanding autism spectrum disorder (ASD). Yet how functional networks regulate developmental changes in brain morphology remains unclear. Here, we analyzed gray matter volume (GMV) and functional connectivity (FC) in 301 individ...

Read full article:

https://pubmed.ncbi.nlm.nih.gov/41102402/?

Primary stabbing headache in a tertiary headache centre

1 2025-10-16 min 58

TDCS TACS TRNS

Summary: INTRODUCTION: Primary stabbing headache (PSH) is a short-lasting head pain occurring spontaneously in the absence of underlying structural causes. Although it is a frequent disorder, with a reported lifetime prevalence of 35.2% in the general population, its pathophysiological underpinnings remain i...

https://pubmed.ncbi.nlm.nih.gov/41102620/?

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



1 63 min words

TDCS TACS TRNS

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

Read full article:

https://pubmed.ncbi.nlm.nih.gov/41103728/?

High-intensity transcranial alternating current stimulation combined with pharmacotherapy for adolescent major depressive disorder: a prospective case report study



Summary: CONCLUSIONS: The combination of HI-tACS and pharmacotherapy demonstrated potential early effects in this small cohort of adolescents with MDD, particularly during the initial phase of treatment. These preliminary findings warrant further investigation through large-scale randomized controlled trials...

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Non-invasive brain stimulation for suicidal ideation: a systematic review and metanalysis of the current literature









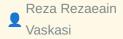
TDCS TACS TRNS

Summary: Data suggests that the available therapeutic tools are still insufficient to deal with suicidality. Non-Invasive Brain Stimulation techniques (NIBS) have entered the recognized guidelines for therapies in psychiatry due to the advantages related to safety and tolerability. The purpose of this review...

Read full article:

https://pubmed.ncbi.nlm.nih.gov/41103967/?

Active and sham transcranial direct-current stimulation (tDCS) plus core stability on the knee kinematic and performance of the lower limb of the soccer players with dynamic knee valgus; two armed randomized clinical trial





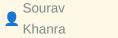


TDCS TACS TRNS

Summary: Dynamic knee valgus (DKV) is a prevalent risk factor for anterior cruciate ligament (ACL) injuries in soccer players, particularly during noncontact mechanisms. Transcranial direct-current stimulation (tDCS) and core stability exercises have shown promise in enhancing motor control and biomechanical...

https://pubmed.ncbi.nlm.nih.gov/41103970/?

Effect of Precision-based HD-tDCS Over Conventional HDtDCS in Young-onset Mania: Protocol for an Active **Comparison fMRI and TMS Study**







TDCS TACS TRNS

Summary: CONCLUSIONS: This study protocol aims to explore the effect of novel precision-based HD-tDCS in young-onset mania compared to conventional HD-tDCS, thereby allowing for the examination of precision neuromodulation in young-onset mania.

https://pubmed.ncbi.nlm.nih.gov/41104323/?

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Functional connectivity in whole-brain and network analysis differentiates minimally conscious from unresponsive patients: a resting-state fNIRS study









FNIRS

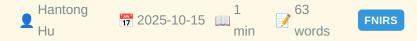
Summary: CONCLUSION: fNIRS could effectively detect abnormal brain network functional connectivity in DOC patients and could provide valuable insights for differentiating MCS and VS/UWS patients.

⊗ Read full article:

https://pubmed.ncbi.nlm.nih.gov/41088235/?

utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1JKSd2KF3MGnV7oFV D2g6PNu7rHRFDsLyCNjKkkf4KHBUA3c8P&fc=None&ff=20251017184000&v=2.18.0.post9+e462414

Predicting Individual Response to Acupuncture in Sensorineural Tinnitus Using Integrated Functional Near-Infrared Spectroscopy and Machine Learning: Protocol for a Model Development and Validation Study



Summary: CONCLUSION: This study represents the first attempt to integrate fNIRS detection with machine learning techniques for predicting acupuncture efficacy in SNT treatment. The methodology addresses several key challenges in acupuncture research through comprehensive data collection and advanced analytic...

https://pubmed.ncbi.nlm.nih.gov/41089742/?

utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1JKSd2KF3MGnV7oFV D2g6PNu7rHRFDsLyCNjKkkf4KHBUA3c8P&fc=None&ff=20251017184000&v=2.18.0.post9+e462414

Online Regulation of Task Difficulty based on Neuro- and Motor-feedback to improve engagement in Visual-motor Task





Summary: CONCLUSION: Our findings suggest that the proposed NMF system can enable online neural activity regulation in visual-motor tasks and achieve enhanced integration between cognitive and sensorimotor areas, with the potential to improve the rehabilitation training outcomes.

https://pubmed.ncbi.nlm.nih.gov/41091617/?

utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1JKSd2KF3MGnV7oFV D2g6PNu7rHRFDsLyCNjKkkf4KHBUA3c8P&fc=None&ff=20251017184000&v=2.18.0.post9+e462414

Effect of lower limb mirror visual feedback on cortical activation in healthy subjects: a self-controlled randomized trail









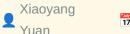


Summary: CONCLUSION: LLMVF increases neural activity in the sensory and motor related areas, indicating that LLMVF can promote more activation of brain functional areas, which verifies the top-down positive effect of LLMVF.

https://pubmed.ncbi.nlm.nih.gov/41094487/?

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TSFNet: Temporal-Spatial Fusion Network for Hybrid Brain-Computer Interface









Summary: Unimodal brain-computer interfaces (BCIs) often suffer from inherent limitations due to the characteristic of using single modalities. While hybrid BCIs combining electroencephalography (EEG) and functional near-infrared spectroscopy (fNIRS) offer complementary advantages, effectively integrating th...

https://pubmed.ncbi.nlm.nih.gov/41094934/?

utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1JKSd2KF3MGnV7oFV D2g6PNu7rHRFDsLyCNjKkkf4KHBUA3c8P&fc=None&ff=20251017184000&v=2.18.0.post9+e462414

Diagnostic Efficacy of Olfactory Function Test Using Functional Near-Infrared Spectroscopy with Machine Learning in Healthy Adults: A Prospective Diagnostic-Accuracy (Feasibility/Validation) Study in Healthy Adults with Algorithm Development



Summary: Background/Objectives: The YSK olfactory function (YOF) test is a culturally adapted psychophysical tool that assesses threshold, discrimination, and identification. This study evaluated whether functional near-infrared spectroscopy (fNIRS) synchronized with routine YOF testing, combined with machin...

⊗ Read full article:

https://pubmed.ncbi.nlm.nih.gov/41095653/?

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Enhanced Activation in the Dorsolateral Prefrontal Cortex and Inferior Parietal Lobule During Recovery from Body Dissatisfaction



Summary: Previous studies have examined the neural mechanisms of body dissatisfaction. This study aimed to investigate the neural basis of recovery from body dissatisfaction. Sixty-seven young women participated in this study, engaging in a fat talk-a conversation known to induce body dissatisfaction-followe...

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Immediate modulation effects of Tongue Tri-needle on brain functional networks in infratentorial stroke patients with dysphagia: a randomized controlled trial



Summary: CONCLUSION: Infratentorial stroke patients with dysphagia exhibit disrupted functional connectivity within the fronto-temporo-sensorimotor network, which is associated with clinical impairment. Tongue Tri-needle multi-stage, selective reconfiguration of brain functional networks, particularly by mod...

⊗ Read full article:

https://pubmed.ncbi.nlm.nih.gov/41103520/?

Riemannian geometry boosts functional near-infrared spectroscopy-based brain-state classification accuracy



Summary: CONCLUSION: To our knowledge, we are the first to demonstrate that the proposed Riemannian-geometry-based classification approach is both powerful and viable for fNIRS data, substantially increasing the accuracy in binary and multi-class classification of brain activation patterns.

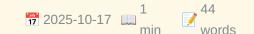
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Sensitive and specific fNIRS-based approach for awareness detection in disorders of consciousness: proof of principle in healthy adults







Summary: CONCLUSION: This individualized diagnostic approach may have the potential to significantly enhance diagnostic accuracy for DoCs. It provides a noninvasive, efficient, and objective assessment, potentially reducing the rate of misdiagnosis rates. The practicality and minimal technical requirements o...

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utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1JKSd2KF3MGnV7oFV D2g6PNu7rHRFDsLyCNjKkkf4KHBUA3c8P&fc=None&ff=20251017184000&v=2.18.0.post9+e462414

Effectiveness of Electroencephalographic Neurofeedback for Parkinson's Disease: A Systematic Review and Meta-Analysis









BRAIN COMPUTER INTERFACE

Summary: Background: Electroencephalographic (EEG) neurofeedback training is gaining traction as a non-pharmacological treatment option for Parkinson's disease (PD). This paper reports the first pre-registered, integrated systematic review and meta-analysis of studies examining the effects of EEG neurofeedba...

Read full article:

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A Novel Grasping Robot Control Method Using Motion **Execution BCI Combining Knowledge Reasoning**

Wen

1 68 min words

BRAIN COMPUTER INTERFACE

Summary: Recently, with the growing number of disabled people, brain-controlled technology offers a novel way to help patients restore their daily abilities. However, the conventional brain-controlled system based on the motion related task lacks intelligence in real-world environments. To address above prob...

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Advances in flexible high-density microelectrode arrays for brain-computer interfaces



1 61 min words



BRAIN COMPUTER INTERFACE

Summary: Recent advances in flexible high-density microelectrode arrays (FHD-MEA) have revolutionized brain-computer interfaces (BCIs) by providing high spatial resolution, mechanical compliance, and long-term biocompatibility. This technology enables stable neural recording and precise stimulation, addressi...

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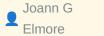
Neural mechanism of the sexually dimorphic winner effect in mice



Summary: The "winner effect," where prior victories increase the likelihood of future wins, profoundly shapes social hierarchy dynamics and competitive motivation. Although human literature suggests a less pronounced winner effect in females, the neural mechanisms underlying these sex differences remain uncl...

https://pubmed.ncbi.nlm.nih.gov/41101308/?
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+e462414

Artificial intelligence and computer-aided diagnosis in diagnostic decisions: 5 questions for medical informatics and human-computer interface research









BRAIN COMPUTER INTERFACE

Summary: OBJECTIVES: Artificial intelligence (AI) has the potential to transform medical informatics by supporting clinical decision-making, reducing diagnostic errors, and improving workflows and efficiency. However, successful integration of AI-based decision support systems depends on careful consideratio...

https://pubmed.ncbi.nlm.nih.gov/41101774/? utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1rSUu-tbw4049Wgf RdKXdtNCvGW0lVBZFpHe7zaN4k4DwoD5&fc=None&ff=20251017183951&v=2.18.0.post9 +e462414

Diffusion trajectory of atypical morphological development in autism spectrum disorder

Xujun 1 68
Duan min words

BRAIN COMPUTER INTERFACE

Summary: Brain development from childhood through adolescence is crucial for understanding autism spectrum disorder (ASD). Yet how functional networks regulate developmental changes in brain morphology remains unclear. Here, we analyzed gray matter volume (GMV) and functional connectivity (FC) in 301 individ...

https://pubmed.ncbi.nlm.nih.gov/41102402/?

utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1rSUu-tbw4049Wgf RdKXdtNCvGW0IVBZFpHe7zaN4k4DwoD5&fc=None&ff=20251017183951&v=2.18.0.post9 +e462414

A Moratorium on Implantable Non-Medical Neurotech Until **Effects on the Mind are Properly Understood**

2025-10-17 min 67 words

BRAIN COMPUTER INTERFACE

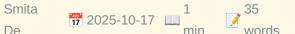
Summary: The development of non-medical consumer neurotechnology is gaining momentum. As companies chart the course for future implanted and invasive braincomputer interfaces (BCIs) in non-medical populations, the time has come for concrete steps toward their regulation. We propose three measures: First, a ...

https://pubmed.ncbi.nlm.nih.gov/41104262/?

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Simple Prostatectomy is an Effective Option for BPH Patients With Hypocontractile Bladders







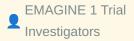


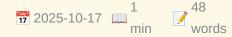
BRAIN COMPUTER INTERFACE

Summary: CONCLUSIONS: This is one of the first studies assessing outcomes of SP in patients with hypocontractile bladders. SP is an effective surgical option for patients with impaired detrusor function including those who are catheter dependent.

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Electromagnetic Stimulation to Reduce Disability After Ischemic Stroke: The EMAGINE Randomized Clinical Trial



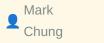


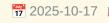
BRAIN COMPUTER INTERFACE

Summary: CONCLUSION AND RELEVANCE: This trial found that ENTF therapy is safe. Although the difference between groups was not statistically significant, ENTF therapy may reduce global disability in patients with severe baseline disability after ischemic stroke. These results warrant confirmation in a higher ...

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A different bimodal: case series of patients with a cochlear implant and a contralateral bone conduction implant







2025-10-17 min BRAIN COMPUTER INTERFACE

Summary: CONCLUSION: The synergy of electrical and vibratory auditory stimulation observed in this case series provided subjective functional benefits and measurable speech perception benefits for some patients, while others experienced minimal or no measurable benefit and ceased usage.

https://pubmed.ncbi.nlm.nih.gov/41105834/?

utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1rSUu-tbw4049Wgf RdKXdtNCvGW0IVBZFpHe7zaN4k4DwoD5&fc=None&ff=20251017183951&v=2.18.0.post9 +e462414

Psychometric properties of the Chinese version of Nightmare Distress Questionnaire in adolescents with psychiatric disorders.







Summary: Nightmare Distress Questionnaire (NDQ) is commonly used to assess nightmare distress. The psychometric properties of the Chinese version of NDQ (NDQ-CV) have been shown to be satisfactory in the general population of Chinese adolescents. This study aims to evaluate the psychometric properties of NDQ...



http://doi.org/10.1037/drm0000297

Assessing attitudes toward dream incubation: A new scale.



Summary: This study aims to develop the Dream Incubation Attitude Scale for assessing attitudes toward dream incubation. The Dream Incubation Attitude Scale underwent psychometric testing based on responses drawn from 109 Hong Kong participants. This resulted in a three-factor structure comprising self-effic...



http://doi.org/10.1037/drm0000306

Flying dreams stimulated by targeted movement and sound: Art and science in the dream hotel.

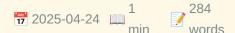


Summary: We present Dream Hotel Room 1, a sculptural artwork by Carsten Höller (with Adam Haar Horowitz) that uses dream engineering techniques to induce flying dreams. Dreams of flying are an exceptional experience; even years after their occurrence, people report these remain some of the most meaningful an...

Read full article:

http://doi.org/10.1037/drm0000308

Nightmare disorder in women.



DREAMING

Summary: The aim of this study is to identify the short-term proximate triggers and effects of nightmares in adult women. In total, 85 females and 29 males participated in a 2-week intensive longitudinal assessment of mood, stress, social conflict, and sleep architecture measures. Sleep architecture was moni...



http://doi.org/10.1037/drm0000309

Live Stream from the Namib Desert





HACKER NEWS

Summary: Comments

https://bookofjoe2.blogspot.com/2025/10/live-stream-from-namib-desert.html

Retrieving Planned Sample Sizes from AsPredicted Preregistrations







TWENTY PERCENT STATISTICIAN

Summary: &<u>

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

Are meta-scientists ignoring philosophy of science?





TWENTY PERCENT STATISTICIAN

Summary: Are meta-scientists ignoring philosophy of science (PoS)? Are they reinventing the wheel? https://nomadit.co.uk/conference/metascience2025/p/ 17038">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)

3 765 min words

TWENTY PERCENT STATISTICIAN

Summary: 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

Applications now being accepted for UC-Davis/SDSU ERP Boot Camp, July 31 – August 9, 2023



1 108 min words

ERP BOOT CAMP

Summary: The next 10-day ERP Boot Camp will be held July 31 – August 9, 2023 in San Diego, California. We are now taking applications, which will be due by April 1, 2023. Click here for more information.We are currently planning t...

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

ERP Decoding for Everyone: Software and Webinar

2 420 min words



ERP BOOT CAMP

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

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

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

New Papers: Optimal Filter Settings for ERP Research



2 568 min words





ERP BOOT CAMP

Summary: Zhang, G., Garrett, D. R., & D. R., & Luck, S. J. (in press). Optimal filters for ERP research I: A general approach for selecting filter settings. Psychophysiology. https:// doi.org/10.1111/psyp.14531 [<a href="https://www...

Read full article:

https://erpinfo.org/blog/2024/2/4/optimal-filters

Education: Legal Issues







BRAIN

Summary: The safety concerns and standards shared in other sections provide an initial foundation for legal protections. However, calls for stricter consumer protection laws must accompany the proliferation of neurotech devices. Special privacy laws must be promulgated to ensure "cognitive privacy" (Nita Far...

https://brain.ieee.org/publications/neuroethics-framework/education/education-legal-issues/educationlegal-issues/

Education: Social and Cultural Issues









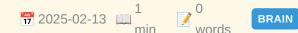
BRAIN

Summary: Devices that therapeutically aid users with cognitive and learning disabilities/ differences should not be equally applied to a general population seeking learning advantages. It must not be assumed that therapies able to improve cognition for mental and cognitive disorders (such as executive control...

https://brain.ieee.org/publications/neuroethics-framework/education/education-social-and-cultural-issues/ education-social-and-cultural-issues/







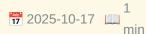




https://brain.ieee.org/publications/neuroethics-framework/education/standards-education/educationstandards/

Microstructural Spine Alterations Increase Neuronal Excitability in Focal Cortical Dysplasia







BIORXIV NEUROSCIENCE

Summary: Focal cortical dysplasia(FCD) is a leading cause of drug-resistant epilepsy, traditionally attributed to impaired inhibition. However, recent ultrastructural evidence suggests excitatory synaptic alterations may also contribute. To investigate this, we performed computational modeling of human pyram...

⊗ Read full article:

https://www.biorxiv.org/content/10.1101/2025.10.16.682987v1?rss=1

Sex-specific relationship between melanopsin-dependent light sensitivity and chronotype across the lifespan

van der Zwet, G., Bor, Z., Bos, R., Dorp, R., Pape, L., van der Zwet, L., van Dijk, E., van de Stadt, H., McGlashan, E., Michel, S., Kervezee, L.

1 2025-10-17 min 243 BIORXIV NEUROSCIENCE

Summary: Study objectives: Light, acting primarily via melanopsin-mediated signaling, plays a central role in synchronising circadian rhythms. Individuals vary markedly in the sensitivity of their circadian system to light. Whether these differences contribute to the interindividual variability in chronotype...

https://www.biorxiv.org/content/10.1101/2025.10.17.681907v1?rss=1

This Week in The Journal

1 0 min words

JOURNAL NEUROSCIENCE THIS WEEK

⊗ Read full article:

http://www.jneurosci.org/cgi/content/short/45/41/etwij45412025?rss=1

UHGAN: a dual-phase GAN with Hough-transform constraints for accurate farmland road extraction

Yuan 1 190
Ma min words

FRONTIERS NEUROROBOTICS

Summary: IntroductionTraditional methods for farmland road extraction, such as U-Net, often struggle with complex noise and geometric features, leading to discontinuous extraction and insufficient sensitivity. To address these limitations, this study proposes a novel dual-phase generative adversarial network...

https://www.frontiersin.org/articles/10.3389/fnbot.2025.1691300

UAV-based intelligent traffic surveillance using recurrent neural networks and Swin transformer for dynamic environments



1 258 min words

FRONTIERS NEUROROBOTICS

Summary: IntroductionUrban traffic congestion, environmental degradation, and road safety challenges necessitate intelligent aerial robotic systems capable of real-time adaptive decision-making. Unmanned Aerial Vehicles (UAVs), with their flexible deployment and high vantage point, offer a promising solution...

Read full article:

https://www.frontiersin.org/articles/10.3389/fnbot.2025.1681341

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

Maria Carla
Piastra

1
2024-06-14

min

64

words

OOSTENVELD ROBERT

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

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



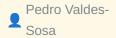
1 72 min words

OOSTENVELD ROBERT

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

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

One hundred years of EEG for brain and behaviour research







OOSTENVELD ROBERT

Read full article:

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







OOSTENVELD ROBERT

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

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

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

Krzysztof J
Gorgolewski

1 2024-09-23 min 82
words

OOSTENVELD ROBERT

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

https://pubmed.ncbi.nlm.nih.gov/39308505/?

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

1 65 min words

OOSTENVELD ROBERT

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

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

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



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...

https://pubmed.ncbi.nlm.nih.gov/39870674/?

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



Lyuba
Zehl

Zehl

Zo25-06-26 min

Zostenveld robert

Oostenveld robert

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

Read full article:

https://pubmed.ncbi.nlm.nih.gov/40568426/?

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

Tim M
Tierney

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

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Optimal configuration of on-scalp OPMs with fixed channel counts









OOSTENVELD ROBERT

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

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

Monitoring Night-Time Activity Patterns of Laying Hens in Response to Poultry Red Mite Infestations Using Night-Vision Cameras



Summary: The poultry red mite (PRM) feeds on hens' blood at night, disrupting sleep, harming welfare, and reducing productivity. Effective control may lie in dynamic Integrated Pest Management (IPM), which relies on routine monitoring and adaptation to farm conditions. This study investigated how PRM infesta...

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Clinical Potential of Essential Oils: Cytotoxicity, Selectivity Index, and Efficacy for Combating Gram-Positive ESKAPE Pathogens



Summary: (1) Background: Essential oils (EOs) have emerged as promising antibacterial agents due to their broad-spectrum activity and low risk of resistance development. Therefore, this review aimed to assess the effectiveness of EOs against Gram-positive ESKAPE pathogens, and to evaluate their safety and to...

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Artificial Intelligence-Enhanced Liquid Biopsy and Radiomics in Early-Stage Lung Cancer Detection: A Precision Oncology **Paradigm**

Shivaram P Arunachalam

1 2025-10-16 min 57 Low vision

Summary: CONCLUSION: The integration of AI with liquid biopsy and radiomics holds transformative potential for early lung cancer detection. This non-invasive, scalable, and individualized diagnostic paradigm could significantly reduce lung cancer mortality through timely and targeted interventions. As techno...

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One-Hot Multi-Level Leaky Integrate-and-Fire Spiking Neural Networks for Enhanced Accuracy-Latency Tradeoff







LOW VISION

Summary: Spiking neural networks (SNNs) hold significant promise as energy-efficient alternatives to conventional artificial neural networks (ANNs). However, SNNs require computations across multiple timesteps, resulting in increased latency, heightened energy consumption, and additional memory access overhe...

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Artificial intelligence and computer-aided diagnosis in diagnostic decisions: 5 questions for medical informatics and human-computer interface research









Summary: OBJECTIVES: Artificial intelligence (AI) has the potential to transform medical informatics by supporting clinical decision-making, reducing diagnostic errors, and improving workflows and efficiency. However, successful integration of AI-based decision support systems depends on careful consideratio...

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OsiriXGPT: An Innovative AI Co-pilot Plug-In for Seamless **Deployment of Generative AI Models in Scan-to-Scan Reporting Workflows**







LOW VISION

Summary: Generative Artificial Intelligence (GenAI) has the potential to transform radiology by reducing reporting burdens, enhancing diagnostic workflows and facilitating communication of complex radiological information. However, research and adoption remain limited due to the lack of seamless integration ...

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Artificial intelligence-assisted glaucoma detection on color fundus images: with comorbidity and cross-institutional analysis



Summary: CONCLUSION: The proposed AI system can detect glaucoma on standard color fundus photographs with high accuracy across clinical environments and in the presence of comorbid eye diseases. The system may be a practical and affordable tool for large-scale glaucoma screening, particularly in institutions...

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Rapid and accurate prediction of cycloplegic refraction in Chinese children: development and validation of machine learning models



Summary: CONCLUSIONS: The ML models enable cSE prediction based on non-cycloplegic refraction data and ocular biometric parameters, providing a fast, practical method for estimating refractive error. Multicenter validation and targeted oversampling of rare refractive subgroups are required, however, before r...

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3-Year Comparison Of Two Mix-And-Match Strategies: **Enhanced Monofocal And Trifocal Versus Enhanced Monofocal And Trifocal EDOF IOLs**





1 2025-10-17 min 45 words Low VISION



Summary: CONCLUSIONS: Combined implantation of enhanced monofocal and trifocal/ trifocal EDOF IOLs yields excellent distance and intermediate vision. Near visual acuity and spectacle independence was higher in the Isopure-HP group. Low incidence of photic phenomena and high patient satisfaction highlight the ...

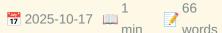
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Donor Diabetes and 1-Year Descemet Membrane Endothelial Keratoplasty Success Rate: A Randomized Clinical Trial







LOW VISION

Summary: CONCLUSIONS AND RELEVANCE: The 1-year success rate in eyes undergoing DMEK with successfully prepared tissue was very high regardless of donor diabetes status. These results, supported by the separately reported finding that endothelial cell loss and cornea morphometry after 1 year were not affected...

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

Thomas
Hummel

Thomas

Tactile Acuity

Thomas

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

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

Hiroyuki

1 75
min words

TACTILE ACUITY

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

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

Leah R

Bent

1
69
words

TACTILE ACUITY

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

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Directional vibro-tactile hazard warnings for drivers with vision impairments



TACTILE ACUITY

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

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







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

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









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

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

Paula Anne Newman-Casev

1 74 TACTILE ACUITY words

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

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

Sviatoslav N Bagriantsev

1 2025-09-13 min 58 words

TACTILE ACUITY

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

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

Charles M

Greenspon

1

86

words

TACTILE ACUITY

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

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









TACTILE ACUITY

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

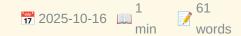
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Investigation of the Prognostic Value of Novel Laboratory Indices in Patients with Sepsis in an Intensive Care Unit: A Retrospective Observational Study





BRAIN COMPUTER INTERFACE

Summary: Background: This study aimed to evaluate the prognostic value of some novel laboratory indices in intensive care unit (ICU)-hospitalized sepsis patients. Methods: This retrospective, observational study included 400 patients with sepsis. The indices studied were the C-reactive protein/albumin ratio ...

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Effectiveness of Electroencephalographic Neurofeedback for Parkinson's Disease: A Systematic Review and Meta-Analysis

Andrew Cooke

1 63 min words

BRAIN COMPUTER INTERFACE

Summary: Background: Electroencephalographic (EEG) neurofeedback training is gaining traction as a non-pharmacological treatment option for Parkinson's disease (PD). This paper reports the first pre-registered, integrated systematic review and meta-analysis of studies examining the effects of EEG neurofeedba...

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A Novel Grasping Robot Control Method Using Motion **Execution BCI Combining Knowledge Reasoning**

Wang

1 68 min words



BRAIN COMPUTER INTERFACE

Summary: Recently, with the growing number of disabled people, brain-controlled technology offers a novel way to help patients restore their daily abilities. However, the conventional brain-controlled system based on the motion related task lacks intelligence in real-world environments. To address above prob...

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Advances in flexible high-density microelectrode arrays for brain-computer interfaces

Woon-Hong
Yeo

1
2025-10-16 min

61
BRAIN COMPUTER INTERFACE

Summary: Recent advances in flexible high-density microelectrode arrays (FHD-MEA) have revolutionized brain-computer interfaces (BCIs) by providing high spatial resolution, mechanical compliance, and long-term biocompatibility. This technology enables stable neural recording and precise stimulation, addressi...

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Neural mechanism of the sexually dimorphic winner effect in mice

1 70 min words

BRAIN COMPUTER INTERFACE

Summary: The "winner effect," where prior victories increase the likelihood of future wins, profoundly shapes social hierarchy dynamics and competitive motivation. Although human literature suggests a less pronounced winner effect in females, the neural mechanisms underlying these sex differences remain uncl...

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Artificial intelligence and computer-aided diagnosis in diagnostic decisions: 5 questions for medical informatics and human-computer interface research







BRAIN COMPUTER INTERFACE

Summary: OBJECTIVES: Artificial intelligence (AI) has the potential to transform medical informatics by supporting clinical decision-making, reducing diagnostic errors, and improving workflows and efficiency. However, successful integration of AI-based decision support systems depends on careful consideratio...

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Diffusion trajectory of atypical morphological development in autism spectrum disorder

Xujun 1 68
Duan min words

BRAIN COMPUTER INTERFACE

Summary: Brain development from childhood through adolescence is crucial for understanding autism spectrum disorder (ASD). Yet how functional networks regulate developmental changes in brain morphology remains unclear. Here, we analyzed gray matter volume (GMV) and functional connectivity (FC) in 301 individ...

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A Moratorium on Implantable Non-Medical Neurotech Until **Effects on the Mind are Properly Understood**

2025-10-17 min 67 words





BRAIN COMPUTER INTERFACE

Summary: The development of non-medical consumer neurotechnology is gaining momentum. As companies chart the course for future implanted and invasive braincomputer interfaces (BCIs) in non-medical populations, the time has come for concrete steps toward their regulation. We propose three measures: First, a ...

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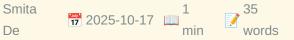
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Simple Prostatectomy is an Effective Option for BPH Patients With Hypocontractile Bladders









BRAIN COMPUTER INTERFACE

Summary: CONCLUSIONS: This is one of the first studies assessing outcomes of SP in patients with hypocontractile bladders. SP is an effective surgical option for patients with impaired detrusor function including those who are catheter dependent.

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Electromagnetic Stimulation to Reduce Disability After Ischemic Stroke: The EMAGINE Randomized Clinical Trial



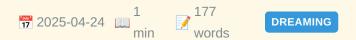


BRAIN COMPUTER INTERFACE

Summary: CONCLUSION AND RELEVANCE: This trial found that ENTF therapy is safe. Although the difference between groups was not statistically significant, ENTF therapy may reduce global disability in patients with severe baseline disability after ischemic stroke. These results warrant confirmation in a higher ...

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+e462414

Impact of childhood trauma on dreams in adulthood: An Argentine survey.



Summary: The aim of this study was to assess whether participants who present more frequently with nightmares or distressing dreams have had traumatic experiences in their childhood and their relationship with current personality traits. Three instruments were administered to a sample of 446 adults from the ...

http://doi.org/10.1037/drm0000307

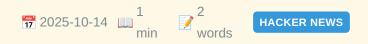
Claude Code vs. Codex: I built a sentiment dashboard from Reddit comments



Summary: Comments

https://www.aiengineering.report/p/claude-code-vs-codex-sentiment-analysis-reddit

PlayStation 3 Architecture (2021)



Summary: Comments

https://www.copetti.org/writings/consoles/playstation-3

Republicans use deepfake video of Chuck Schumer in new attack ad

asib 7 2025-10-17 min 13 words HACKER NEWS

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Marc Benioff: I no longer believe National Guard is needed for SF

● donsupreme 1 2025-10-17 min 1 13 HACKER NEWS

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Monitoring Night-Time Activity Patterns of Laying Hens in Response to Poultry Red Mite Infestations Using Night-Vision Cameras



LOW VISION

Summary: The poultry red mite (PRM) feeds on hens' blood at night, disrupting sleep, harming welfare, and reducing productivity. Effective control may lie in dynamic Integrated Pest Management (IPM), which relies on routine monitoring and adaptation to farm conditions. This study investigated how PRM infesta...

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Artificial Intelligence-Enhanced Liquid Biopsy and Radiomics in Early-Stage Lung Cancer Detection: A Precision Oncology **Paradigm**

Shivaram P Arunachalam

1 57 Low vision min words

Summary: CONCLUSION: The integration of AI with liquid biopsy and radiomics holds transformative potential for early lung cancer detection. This non-invasive, scalable, and individualized diagnostic paradigm could significantly reduce lung cancer mortality through timely and targeted interventions. As techno...

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One-Hot Multi-Level Leaky Integrate-and-Fire Spiking Neural **Networks for Enhanced Accuracy-Latency Tradeoff**







LOW VISION

Summary: Spiking neural networks (SNNs) hold significant promise as energy-efficient alternatives to conventional artificial neural networks (ANNs). However, SNNs require computations across multiple timesteps, resulting in increased latency, heightened energy consumption, and additional memory access overhe...

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Artificial intelligence and computer-aided diagnosis in diagnostic decisions: 5 questions for medical informatics and human-computer interface research







LOW VISION

Summary: OBJECTIVES: Artificial intelligence (AI) has the potential to transform medical informatics by supporting clinical decision-making, reducing diagnostic errors, and improving workflows and efficiency. However, successful integration of AI-based decision support systems depends on careful consideratio...

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OsiriXGPT: An Innovative AI Co-pilot Plug-In for Seamless **Deployment of Generative AI Models in Scan-to-Scan Reporting Workflows**







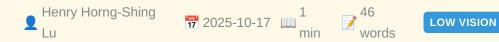
LOW VISION

Summary: Generative Artificial Intelligence (GenAI) has the potential to transform radiology by reducing reporting burdens, enhancing diagnostic workflows and facilitating communication of complex radiological information. However, research and adoption remain limited due to the lack of seamless integration ...

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Artificial intelligence-assisted glaucoma detection on color fundus images: with comorbidity and cross-institutional analysis



Summary: CONCLUSION: The proposed AI system can detect glaucoma on standard color fundus photographs with high accuracy across clinical environments and in the presence of comorbid eye diseases. The system may be a practical and affordable tool for large-scale glaucoma screening, particularly in institutions...

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Rapid and accurate prediction of cycloplegic refraction in Chinese children: development and validation of machine learning models



Summary: CONCLUSIONS: The ML models enable cSE prediction based on non-cycloplegic refraction data and ocular biometric parameters, providing a fast, practical method for estimating refractive error. Multicenter validation and targeted oversampling of rare refractive subgroups are required, however, before r...

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3-Year Comparison Of Two Mix-And-Match Strategies: **Enhanced Monofocal And Trifocal Versus Enhanced Monofocal And Trifocal EDOF IOLs**







Summary: CONCLUSIONS: Combined implantation of enhanced monofocal and trifocal/ trifocal EDOF IOLs yields excellent distance and intermediate vision. Near visual acuity and spectacle independence was higher in the Isopure-HP group. Low incidence of photic phenomena and high patient satisfaction highlight the ...

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Donor Diabetes and 1-Year Descemet Membrane Endothelial Keratoplasty Success Rate: A Randomized Clinical Trial







LOW VISION

Summary: CONCLUSIONS AND RELEVANCE: The 1-year success rate in eyes undergoing DMEK with successfully prepared tissue was very high regardless of donor diabetes status. These results, supported by the separately reported finding that endothelial cell loss and cornea morphometry after 1 year were not affected...

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







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

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









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







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









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







BRAILLE

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

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









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

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











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

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





1 55 min words





BRAILLE

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

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



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

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



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

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Transcranial direct current stimulation (tDCS) for cognitive impairment in schizophrenia: A systematic review and metaanalysis of randomized controlled trials

Roberto Rodriguez
Jimenez

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46

words

TDCS TACS TRNS

Summary: CONCLUSIONS: tDCS shows domain-specific potential for cognitive enhancement in schizophrenia, particularly in verbal learning. However, the small effect sizes, high heterogeneity, and limited methodological rigor of included trials warrant cautious interpretation. Future research should emphasize st...

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Cortical modulation by exogenous electric fields is consistent with electric dipoles

Maria V Sanchez-

1 65 min words

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Summary: Cortical activity can be modulated by endogenous and exogenous electric fields (EFs). Recent experimental and computational data suggested that endogenous EFmediated effects are compatible with electric dipoles, which contribute to the synchronization of neighboring cortical columns. Consistently, ...

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A deep learning approach to artifact removal in Transcranial **Electrical Stimulation: From shallow methods to deep neural** networks and state space models

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Summary: Transcranial Electrical Stimulation (tES) is a non-invasive neuromodulation technique that generates artifacts in simultaneous EEG recordings, hindering brain activity analysis. This study analyzes Machine Learning (ML) methods for tES noise artifact removal across three stimulation types: tDCS, tAC...

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Diffusion trajectory of atypical morphological development in autism spectrum disorder



1 2025-10-16 min 68

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Summary: Brain development from childhood through adolescence is crucial for understanding autism spectrum disorder (ASD). Yet how functional networks regulate developmental changes in brain morphology remains unclear. Here, we analyzed gray matter volume (GMV) and functional connectivity (FC) in 301 individ...

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Primary stabbing headache in a tertiary headache centre

1 2025-10-16 min 58

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Summary: INTRODUCTION: Primary stabbing headache (PSH) is a short-lasting head pain occurring spontaneously in the absence of underlying structural causes. Although it is a frequent disorder, with a reported lifetime prevalence of 35.2% in the general population, its pathophysiological underpinnings remain i...

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

Flood

1 63 min words

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

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High-intensity transcranial alternating current stimulation combined with pharmacotherapy for adolescent major depressive disorder: a prospective case report study

Summary: CONCLUSIONS: The combination of HI-tACS and pharmacotherapy demonstrated potential early effects in this small cohort of adolescents with MDD, particularly during the initial phase of treatment. These preliminary findings warrant further investigation through large-scale randomized controlled trials...

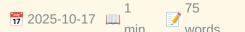
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Non-invasive brain stimulation for suicidal ideation: a systematic review and metanalysis of the current literature









TDCS TACS TRNS

Summary: Data suggests that the available therapeutic tools are still insufficient to deal with suicidality. Non-Invasive Brain Stimulation techniques (NIBS) have entered the recognized guidelines for therapies in psychiatry due to the advantages related to safety and tolerability. The purpose of this review...

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Active and sham transcranial direct-current stimulation (tDCS) plus core stability on the knee kinematic and performance of the lower limb of the soccer players with dynamic knee valgus; two armed randomized clinical trial

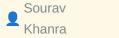




Summary: Dynamic knee valgus (DKV) is a prevalent risk factor for anterior cruciate ligament (ACL) injuries in soccer players, particularly during noncontact mechanisms. Transcranial direct-current stimulation (tDCS) and core stability exercises have shown promise in enhancing motor control and biomechanical...

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Effect of Precision-based HD-tDCS Over Conventional HDtDCS in Young-onset Mania: Protocol for an Active **Comparison fMRI and TMS Study**







TDCS TACS TRNS

Summary: CONCLUSIONS: This study protocol aims to explore the effect of novel precision-based HD-tDCS in young-onset mania compared to conventional HD-tDCS, thereby allowing for the examination of precision neuromodulation in young-onset mania.

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Functional connectivity in whole-brain and network analysis differentiates minimally conscious from unresponsive patients: a resting-state fNIRS study











Summary: CONCLUSION: fNIRS could effectively detect abnormal brain network functional connectivity in DOC patients and could provide valuable insights for differentiating MCS and VS/UWS patients.

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Predicting Individual Response to Acupuncture in Sensorineural Tinnitus Using Integrated Functional Near-Infrared Spectroscopy and Machine Learning: Protocol for a Model Development and Validation Study



Summary: CONCLUSION: This study represents the first attempt to integrate fNIRS detection with machine learning techniques for predicting acupuncture efficacy in SNT treatment. The methodology addresses several key challenges in acupuncture research through comprehensive data collection and advanced analytic...

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Online Regulation of Task Difficulty based on Neuro- and Motor-feedback to improve engagement in Visual-motor Task





Summary: CONCLUSION: Our findings suggest that the proposed NMF system can enable online neural activity regulation in visual-motor tasks and achieve enhanced integration between cognitive and sensorimotor areas, with the potential to improve the rehabilitation training outcomes.

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Effect of lower limb mirror visual feedback on cortical activation in healthy subjects: a self-controlled randomized trail











Summary: CONCLUSION: LLMVF increases neural activity in the sensory and motor related areas, indicating that LLMVF can promote more activation of brain functional areas, which verifies the top-down positive effect of LLMVF.

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TSFNet: Temporal-Spatial Fusion Network for Hybrid Brain-Computer Interface



Summary: Unimodal brain-computer interfaces (BCIs) often suffer from inherent limitations due to the characteristic of using single modalities. While hybrid BCIs combining electroencephalography (EEG) and functional near-infrared spectroscopy (fNIRS) offer complementary advantages, effectively integrating th...

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Diagnostic Efficacy of Olfactory Function Test Using Functional Near-Infrared Spectroscopy with Machine Learning in Healthy Adults: A Prospective Diagnostic-Accuracy (Feasibility/Validation) Study in Healthy Adults with Algorithm Development

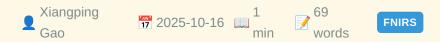


Summary: Background/Objectives: The YSK olfactory function (YOF) test is a culturally adapted psychophysical tool that assesses threshold, discrimination, and identification. This study evaluated whether functional near-infrared spectroscopy (fNIRS) synchronized with routine YOF testing, combined with machin...

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Enhanced Activation in the Dorsolateral Prefrontal Cortex and Inferior Parietal Lobule During Recovery from Body Dissatisfaction



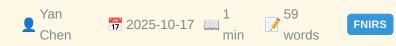
Summary: Previous studies have examined the neural mechanisms of body dissatisfaction. This study aimed to investigate the neural basis of recovery from body dissatisfaction. Sixty-seven young women participated in this study, engaging in a fat talk-a conversation known to induce body dissatisfaction-followe...

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Immediate modulation effects of Tongue Tri-needle on brain functional networks in infratentorial stroke patients with dysphagia: a randomized controlled trial



Summary: CONCLUSION: Infratentorial stroke patients with dysphagia exhibit disrupted functional connectivity within the fronto-temporo-sensorimotor network, which is associated with clinical impairment. Tongue Tri-needle multi-stage, selective reconfiguration of brain functional networks, particularly by mod...

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Riemannian geometry boosts functional near-infrared spectroscopy-based brain-state classification accuracy



Summary: CONCLUSION: To our knowledge, we are the first to demonstrate that the proposed Riemannian-geometry-based classification approach is both powerful and viable for fNIRS data, substantially increasing the accuracy in binary and multi-class classification of brain activation patterns.

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Sensitive and specific fNIRS-based approach for awareness detection in disorders of consciousness: proof of principle in healthy adults



Summary: CONCLUSION: This individualized diagnostic approach may have the potential to significantly enhance diagnostic accuracy for DoCs. It provides a noninvasive, efficient, and objective assessment, potentially reducing the rate of misdiagnosis rates. The practicality and minimal technical requirements o...

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Investigation of the Prognostic Value of Novel Laboratory Indices in Patients with Sepsis in an Intensive Care Unit: A Retrospective Observational Study





BRAIN COMPUTER INTERFACE

Summary: Background: This study aimed to evaluate the prognostic value of some novel laboratory indices in intensive care unit (ICU)-hospitalized sepsis patients. Methods: This retrospective, observational study included 400 patients with sepsis. The indices studied were the C-reactive protein/albumin ratio ...

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Effectiveness of Electroencephalographic Neurofeedback for Parkinson's Disease: A Systematic Review and Meta-Analysis

Andrew Cooke

1 63 min words

BRAIN COMPUTER INTERFACE

Summary: Background: Electroencephalographic (EEG) neurofeedback training is gaining traction as a non-pharmacological treatment option for Parkinson's disease (PD). This paper reports the first pre-registered, integrated systematic review and meta-analysis of studies examining the effects of EEG neurofeedba...

https://pubmed.ncbi.nlm.nih.gov/41096009/?

utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1rSUu-tbw4049Wgf RdKXdtNCvGW0IVBZFpHe7zaN4k4DwoD5&fc=None&ff=20251017173755&v=2.18.0.post9 +e462414

A Novel Grasping Robot Control Method Using Motion **Execution BCI Combining Knowledge Reasoning**



1 68 min words



BRAIN COMPUTER INTERFACE

Summary: Recently, with the growing number of disabled people, brain-controlled technology offers a novel way to help patients restore their daily abilities. However, the conventional brain-controlled system based on the motion related task lacks intelligence in real-world environments. To address above prob...

https://pubmed.ncbi.nlm.nih.gov/41100231/?

utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1rSUu-tbw4049Wgf RdKXdtNCvGW0lVBZFpHe7zaN4k4DwoD5&fc=None&ff=20251017173755&v=2.18.0.post9 +e462414

Advances in flexible high-density microelectrode arrays for brain-computer interfaces

Woon-Hong
Yeo

1
2025-10-16 min

61
BRAIN COMPUTER INTERFACE

Summary: Recent advances in flexible high-density microelectrode arrays (FHD-MEA) have revolutionized brain-computer interfaces (BCIs) by providing high spatial resolution, mechanical compliance, and long-term biocompatibility. This technology enables stable neural recording and precise stimulation, addressi...

https://pubmed.ncbi.nlm.nih.gov/41100980/?

utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1rSUu-tbw4049Wgf RdKXdtNCvGW0IVBZFpHe7zaN4k4DwoD5&fc=None&ff=20251017173755&v=2.18.0.post9 +e462414

Neural mechanism of the sexually dimorphic winner effect in mice

1 70 min words

BRAIN COMPUTER INTERFACE

Summary: The "winner effect," where prior victories increase the likelihood of future wins, profoundly shapes social hierarchy dynamics and competitive motivation. Although human literature suggests a less pronounced winner effect in females, the neural mechanisms underlying these sex differences remain uncl...

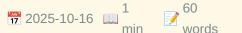
⊗ Read full article:

https://pubmed.ncbi.nlm.nih.gov/41101308/?

utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1rSUu-tbw4049Wgf RdKXdtNCvGW0lVBZFpHe7zaN4k4DwoD5&fc=None&ff=20251017173755&v=2.18.0.post9 +e462414

Artificial intelligence and computer-aided diagnosis in diagnostic decisions: 5 questions for medical informatics and human-computer interface research







BRAIN COMPUTER INTERFACE

Summary: OBJECTIVES: Artificial intelligence (AI) has the potential to transform medical informatics by supporting clinical decision-making, reducing diagnostic errors, and improving workflows and efficiency. However, successful integration of AI-based decision support systems depends on careful consideratio...

https://pubmed.ncbi.nlm.nih.gov/41101774/? utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1rSUu-tbw4049Wgf RdKXdtNCvGW0lVBZFpHe7zaN4k4DwoD5&fc=None&ff=20251017173755&v=2.18.0.post9 +e462414

Diffusion trajectory of atypical morphological development in autism spectrum disorder

Xujun 1 68
Duan min words

BRAIN COMPUTER INTERFACE

Summary: Brain development from childhood through adolescence is crucial for understanding autism spectrum disorder (ASD). Yet how functional networks regulate developmental changes in brain morphology remains unclear. Here, we analyzed gray matter volume (GMV) and functional connectivity (FC) in 301 individ...

https://pubmed.ncbi.nlm.nih.gov/41102402/?

utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1rSUu-tbw4049Wgf RdKXdtNCvGW0IVBZFpHe7zaN4k4DwoD5&fc=None&ff=20251017173755&v=2.18.0.post9 +e462414

A Moratorium on Implantable Non-Medical Neurotech Until **Effects on the Mind are Properly Understood**

2025-10-17 min 67 words





BRAIN COMPUTER INTERFACE

Summary: The development of non-medical consumer neurotechnology is gaining momentum. As companies chart the course for future implanted and invasive braincomputer interfaces (BCIs) in non-medical populations, the time has come for concrete steps toward their regulation. We propose three measures: First, a ...

https://pubmed.ncbi.nlm.nih.gov/41104262/?

utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1rSUu-tbw4049Wgf RdKXdtNCvGW0lVBZFpHe7zaN4k4DwoD5&fc=None&ff=20251017173755&v=2.18.0.post9 +e462414

Simple Prostatectomy is an Effective Option for BPH Patients With Hypocontractile Bladders







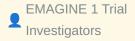


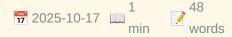
BRAIN COMPUTER INTERFACE

Summary: CONCLUSIONS: This is one of the first studies assessing outcomes of SP in patients with hypocontractile bladders. SP is an effective surgical option for patients with impaired detrusor function including those who are catheter dependent.

https://pubmed.ncbi.nlm.nih.gov/41104690/? utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1rSUu- $tbw4049Wgf_RdKXdtNCvGW0IVBZFpHe7zaN4k4DwoD5\&fc=None\&ff=20251017173755\&v=2.18.0.post9$ +e462414

Electromagnetic Stimulation to Reduce Disability After Ischemic Stroke: The EMAGINE Randomized Clinical Trial





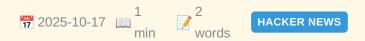
BRAIN COMPUTER INTERFACE

Summary: CONCLUSION AND RELEVANCE: This trial found that ENTF therapy is safe. Although the difference between groups was not statistically significant, ENTF therapy may reduce global disability in patients with severe baseline disability after ischemic stroke. These results warrant confirmation in a higher ...

⊗ Read full article:

https://pubmed.ncbi.nlm.nih.gov/41105410/?
utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1rSUu-tbw4049Wgf_RdKXdtNCvGW0IVBZFpHe7zaN4k4DwoD5&fc=None&ff=20251017173755&v=2.18.0.post9
+e462414

US car repossessions surge as more Americans default on auto loans



Summary: Comments



https://www.theguardian.com/business/2025/oct/17/us-car-repossessions-economy

US car repossessions surge as more Americans default on auto loans

Physkal 7 2025-10-17 min 13 words

Summary: Article URL: https://www.theguardian.com/business/2025/oct/17/us-car-repossessions-economy Comments URL: https://news.ycombinator.com/item?id=...

https://www.theguardian.com/business/2025/oct/17/us-car-repossessions-economy

Important Changes to the 2024 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



1 106 min 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



2 525 min words



ERP BOOT CAMP

Summary: Carrasco, C. D., Bahle, B., Simmons, A. M., & D., Luck, S. J. (2024). Using multivariate pattern analysis to increase effect sizes for event-related potential analyses. Psychophysiology, 61, e14570. https://doi.org/10.1111/psyp. 14570">https://doi.org/10.1111/psyp.14570 [<a h...

https://erpinfo.org/blog/2024/6/10/erp-core-decoding-paper

New software package: ERPLAB Studio

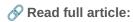






ERP BOOT CAMP

Summary: We are excited to announce the release of a new EEG/ERP analysis package, ERPLAB Studio</ a>. We think it's a huge improvement over the classic EEGLAB user interface. See our cheesy ...



https://erpinfo.org/blog/2024/6/11/erplab-studio

Recording and slides now available for ERPLAB Studio webinar







ERP BOOT CAMP

Summary: We held a webinar to demonstration ERPLAB Studio on 28 June 2024.Click here to access a recording.Click here to access a PDF of the slides.<...



https://erpinfo.org/blog/2024/6/28/recording-and-slides-now-available-for-erplab-studio-webinar

New Paper: Does the P3b component reflect working memory updating?







ERP BOOT CAMP

Summary: Carrasco, C. D., Simmons, A. M., Kiat, J. E., & D., Luck, S. J. (in press). Enhanced working memory representations for rare events. Psychophysiology//doi.org/10.1111/psyp.70038">https://doi.org/ 10.1111/psyp.70038 [<a href="https://doi.org/10.1101/2024.03.20...



https://erpinfo.org/blog/2025/3/20/new-paper-oddball

10-Day ERP Boot Camp to be held in Davis in Summer 2026







ERP BOOT CAMP

Summary: We have received another 5 years of funding from the National Institute of Mental Health, so we plan to hold ERP Boot Camps in each of the next 5 summers. The next one will be in Davis, California in the Summer of 2026. The specific dates will be announced around January 1, 2026, and the...



https://erpinfo.org/blog/2025/8/20/boot-camp-summer-2026

Education: Additional Resources







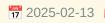
BRAIN

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...

https://brain.ieee.org/publications/neuroethics-framework/education/educational-and-training-resourceseducation/education-additional-resources/

Education: References









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...

https://brain.ieee.org/publications/neuroethics-framework/education/references/education-references/

Auditory Working Memory in Adolescents with Specific Learning Disorders

Salimi, Y., Makhsous, M., Rezayat,

1 2025-10-17 min words

BIORXIV NEUROSCIENCE

Summary: Specific Learning Disorders (SLD), including dyslexia, dyscalculia, and dysgraphia, are associated with deficits in executive functions such as auditory working memory (AWM). This study investigated AWM performance and metacognitive monitoring in adolescents diagnosed with SLD using an auditory dela...

Read full article:

https://www.biorxiv.org/content/10.1101/2025.10.16.682902v1?rss=1

Associations between volumes of grey matter regions and white matter hyperintensities with cognitive empathy in oldest-old adults

Chander, R. J., Grainger, S. A., Crawford, J. D., Jiang, J., Kochan, N. A., Numbers, K., Brodaty, H., Henry, J. D., Wen, W., Sachdev, P. S.

1 232 min words

BIORXIV NEUROSCIENCE

Summary: OBJECTIVES: To study the differential associations of regional volumes of grey matter (GM) and white matter hyperintensities (WMH) with behavioural and informantreported measures of cognitive empathy (CE), especially in brain regions understood to have functional connectivity involvement with CE ab...

https://www.biorxiv.org/content/10.1101/2025.10.16.682959v1?rss=1

Sexual dimorphism in sensorimotor transformation of optic flow

Nicholas, S., Klinge, K. S., Turnbull, L., Moran, A., Young, A., Ogawa, Y., Nordstrom,

2025-10-17

1 161 words

BIORXIV NEUROSCIENCE

Summary: Motion vision underpins a wide range of adaptive behaviours essential for individual and species survival. Some visual behaviours are sexually dimorphic, including for example male hoverfly high-speed pursuit of conspecifics, matched by improved optics, and faster photoreceptors. Other visual behavi...

https://www.biorxiv.org/content/10.1101/2025.10.16.682952v1?rss=1

Depression-like behavior following mild traumatic brain injury in adolescent rats: a role for limbic neuropeptides

Martin, C. R., Giacometti, L. L., Barson, J. R., Raghupathi,

1 2025-10-17 min 250 words

BIORXIV NEUROSCIENCE

Summary: Mild traumatic brain injury (mTBI) is common among adolescents because of their participation in contact sports and mTBI is more likely to lead to depression-related behaviors in girls than boys. Various neuropeptides, often within the limbic system, have been implicated in the regulation of depress...

https://www.biorxiv.org/content/10.1101/2025.10.16.682872v1?rss=1

Right-Lateralized Maladaptive Topological Reorganization in Hyperthyroidism

Chakraborty, P., Upadhyay, N., Kumar, P., Rana, P., Saha, S., Dsouza, M., Sekhri, T., Khushu, S., Kumar, M.



Summary: Hyperthyroidism (HT) has been associated with cognitive impairments, but the structural connectomic and molecular mechanisms underlying these deficits remain poorly understood. In this study, we investigated large-scale brain network reorganization using structural connectivity derived from diffusio...



https://www.biorxiv.org/content/10.1101/2025.10.16.682796v1?rss=1

Intracortical microstructure profiling: a versatile method for indexing cortical lamination

Paquola, C., Royer, J., Tsigaras, T., Cabalo, D. G., Hwang, Y., Hoffstaedter, F., Eickhoff, S. B., Bernhardt, B. C.



Summary: Intracortical microstructure profiling represents a powerful, scalable approach for investigating the laminar organisation of the human cortex on both in vivo and postmortem datasets. Building upon a long tradition of histological analysis, this method leverages surface-based intracortical sampling...

Read full article:

https://www.biorxiv.org/content/10.1101/2025.10.16.682836v1?rss=1

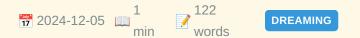
The impact of unemployment on dream content.



Summary: This study examines the relationship between employment status and dream content using a data set of 6,478 dream reports collected from Reddit. We used machine learning to analyze thematic differences between unemployed individuals and a control group. The results revealed that the dreams of unemplo...

http://doi.org/10.1037/drm0000310

From falling apart to disturbing dreams: A preliminary examination of self-fragmentation and nightmares.



Summary: Previous theory suggested a relationship between fragmentation of the self-structure and nightmares. This article examines this possibility by providing an overview of the theoretical rationale for their relationship and a preliminary empirical study exploring the relationships between a brief measu...

Read full article:

http://doi.org/10.1037/drm0000296

Anatomical connectivity-based parcellation of the human orbitofrontal cortex.







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...



http://doi.org/10.1037/bne0000628

The Wi-Fi Revolution (2003)







HACKER NEWS

Summary: Comments



https://www.wired.com/2003/05/wifirevolution/

Making Every Windows 11 PC an AI PC

JamesAdir 2025-10-17 min 13 words

Summary: Article URL: https://blogs.windows.com/windowsexperience/2025/10/16/making-every-windows-11-pc-an-ai-pc/
Comments URL: https://n...

https://blogs.windows.com/windowsexperience/2025/10/16/making-every-windows-11-pc-an-ai-pc/

IEEE Brain Annual Flagship Workshop a Success

① ieeebrain 7 2025-03-03 1 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



Summary: The IEEE Brain Workshop on AI for Neurotechnology was held on June 30, 2024, at the Pacifico Yokohama Conference Center in Japan. This event was part of the World Congress on Computational Intelligence (WCCI 2024) and was conducted in association with the International Joint Conference on Neural Net...

https://brain.ieee.org/braininsight-articles/ieee-brain-workshop-on-ai-for-neurotechnology/

Call for Papers: IEEE Brain Special Issue



Summary: In a unique interdisciplinary collaboration with the IEEE's Society on Social Implications of Technology (SSIT) and IEEE Brain, J-FLEX is joining forces to explore both the technology of the Internet-of-Medical-Things (IoMT) solutions and medical wearables/implantables.

https://brain.ieee.org/braininsight-articles/ieee-journal-on-flexible-electronics/

IEEE Brain Joins the American Brain Coalition

Summary: IEEE Brain is pleased to announce its acceptance as a nonprofit member of the American Brain Coalition (ABC), a prestigious alliance of over 150 organizations dedicated to advancing brain research, advocacy, and improving treatments for individuals affected by brain conditions. The ABC Board has ent...

https://brain.ieee.org/braininsight-articles/ieee-brain-joins-the-american-brain-coalition-as-a-nonprofit-member/

Call for Papers: IEEE Transactions on Human-Machine Systems



Summary: Special Issue on Brain Discovery and Neurotechnology: Featured Research from 2024 IEEE Brain Discovery & Neurotechnology Workshop This special issue is motivated by the success of the IEEE Brain Discovery and Neurotechnology Workshop held in October 2024. This annual workshop is sponsore...

https://brain.ieee.org/braininsight-articles/call-for-papers-ieee-transactions-on-human-machine-systems/

Evaluation on Human Perception of Various Vibrotactile Encoding Methods Through a High Density Haptic Feedback Interface

1 197 min words

TRANSACTIONS HAPTICS

Summary: High density (HD) haptic interfaces have become increasingly common for entertainment thanks to advancements in virtual reality technology, however their flexibility may make them a useful sensory substitution interface for motor rehabilitation. Yet little research has explored how users interpret d...

⊗ Read full article:

http://ieeexplore.ieee.org/document/10994678

Enhancing Video Experiences for DHH Individuals Through Sound-Inspired Motion Caption-Based Spatiotemporal Tacton

1 146 min words





TRANSACTIONS HAPTICS

Summary: When deaf and hard of hearing (DHH) individuals watch videos, captions are essential for them to understand the linguistic content. Current captions, however, are not suitable for conveying non-verbal sound information, such as background music, sound effects, or speech nuances. In this paper, we de...

Read full article:

http://ieeexplore.ieee.org/document/10946856

Call for 2025 Society Awards Nominations







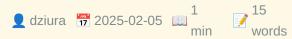


Summary: The post Call for 2025 Society Awards Nominations appeared first on IEEE EMBS.



https://www.embs.org/awards/society-awards/#new_tab

Bridging Biotech: Regional shifts and patterns







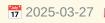
Summary: The post Bridging Biotech: Regional shifts and patterns appeared first on IEEE EMBS.



https://www.embs.org/blog-post/regional-shifts-and-patterns/

Welcoming Dr. Ana Kyani as the New Women in Biomedical **Engineering Chair for IEEE EMBS**









Summary: The post Welcoming Dr. Ana Kyani as the New Women in Biomedical Engineering Chair for IEEE EMBS appeared first on IEEE EMBS.

https://www.embs.org/blog-post/welcoming-dr-ana-kyani-as-wibme-chair-ieee-embs/

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











Summary: The post Ivan Lee, Appointed Editor-in-Chief of EMBC Proceedings</ a> appeared first on IEEE EMBS.

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

Photobiomodulation in stroke prevention and treatment: neuroprotective mechanisms and therapeutic challenges

BRAIN RESEARCH

Summary: Publication date: 1 December 2025Source: Brain Research, Volume 1868Author(s): Yuecheng Li, Lei Zhang, Jiaqiang Lin, Luodan Yang, Rui Duan

Read full article:

https://www.sciencedirect.com/science/article/pii/S000689932500544X?dgcid=rss_sd_all

Brain-wide patterns of oscillatory amplitudes represent naturalistic behavior



NEUROIMAGE

Summary: Publication date: 1 November 2025Source: NeuroImage, Volume 321Author(s): Duho Sihn, Sung-Phil Kim

https://www.sciencedirect.com/science/article/pii/S1053811925005245?dgcid=rss_sd_all

Investigating the effect of masking and background field removal algorithms on the quality of QSM reconstructions using a realistic numerical head phantom

1 min



NEUROIMAGE

Summary: Publication date: 1 November 2025Source: NeuroImage, Volume 321Author(s): Carlos Milovic, Patrick S. Fuchs, Mathias Lambert, Oriana Arsenov, Oliver C. Kiersnowski, Laxmi Muralidharan, Russell Murdoch, Jannette Nassar, Karin Shmueli

⊗ Read full article:

https://www.sciencedirect.com/science/article/pii/S1053811925005026?dgcid=rss_sd_all

Chronic radon exposure is associated with developmental alterations to neural and behavioral indices of cognitive control

min



NEUROIMAGE

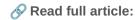
Summary: Publication date: 1 November 2025Source: NeuroImage, Volume 321Author(s): Haley R. Pulliam, Christine M. Embury, Maggie P. Rempe, Hannah J. Okelberry, Danielle L. Rice, Anna T. Coutant, Ryan Glesinger, Tony W. Wilson, Brittany K. Taylor

https://www.sciencedirect.com/science/article/pii/S1053811925005270?dgcid=rss_sd_all

Glia of the heart's nervous system







https://www.nature.com/articles/s41583-025-00974-7

Reply to: Altered effort and deconditioning are not valid explanations of myalgic encephalomyelitis/chronic fatigue syndrome







1 0 NATURE NEUROSCIENCE SUBJECTS words

https://www.nature.com/articles/s41467-025-64539-z

Altered effort and deconditioning are not valid explanations of myalgic encephalomyelitis/chronic fatigue syndrome





NATURE NEUROSCIENCE SUBJECTS



https://www.nature.com/articles/s41467-025-64538-0

Generation of synthetic TSPO PET maps from structural MRI images

Marco L. 1 250 Loggia min 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...

https://www.frontiersin.org/articles/10.3389/fninf.2025.1633273

Does spatialized audio enhance the creation of mental representations?

Lorenzo 1 164
Picinali min words



FRONTIERS NEUROSCIENCE

Summary: Navigating unfamiliar environments without vision is a considerable challenge for blind individuals, as it requires constructing accurate cognitive maps. Binaural audio feedback, which delivers spatialized auditory cues, has been proposed as a means of enhancing spatial navigation by leveraging the ...

https://www.frontiersin.org/articles/10.3389/fnins.2025.1660373

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

Maria Carla
Piastra

1
2024-06-14

min

64

words

OOSTENVELD ROBERT

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

https://pubmed.ncbi.nlm.nih.gov/38873838/?

utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1BUB2BG5RbxOblmhBbiJWEhGG43qlVrvGNHOTqBKva9wWrltM&fc=None&ff=20251017164202&v=2.18.0.post9+e462414

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



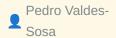
1 72 min words

OOSTENVELD ROBERT

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

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

One hundred years of EEG for brain and behaviour research







OOSTENVELD ROBERT

Read full article:

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

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







OOSTENVELD ROBERT

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

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

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

Krzysztof J
Gorgolewski

1 2024-09-23 min 82
words

OOSTENVELD ROBERT

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

https://pubmed.ncbi.nlm.nih.gov/39308505/?

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

1 65 min words

OOSTENVELD ROBERT

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

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

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

Luca 1 70
Pollonini 2025-01-27 min words

OOSTENVELD ROBERT

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

https://pubmed.ncbi.nlm.nih.gov/39870674/?

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



Lyuba
Zehl

Zehl

Zo25-06-26 min

Zostenveld robert

Oostenveld robert

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

Read full article:

https://pubmed.ncbi.nlm.nih.gov/40568426/?

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

Tim M
Tierney

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

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Optimal configuration of on-scalp OPMs with fixed channel counts







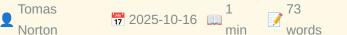
OOSTENVELD ROBERT

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

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

Monitoring Night-Time Activity Patterns of Laying Hens in Response to Poultry Red Mite Infestations Using Night-Vision Cameras







LOW VISION

Summary: The poultry red mite (PRM) feeds on hens' blood at night, disrupting sleep, harming welfare, and reducing productivity. Effective control may lie in dynamic Integrated Pest Management (IPM), which relies on routine monitoring and adaptation to farm conditions. This study investigated how PRM infesta...

https://pubmed.ncbi.nlm.nih.gov/41096523/?

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Clinical Potential of Essential Oils: Cytotoxicity, Selectivity Index, and Efficacy for Combating Gram-Positive ESKAPE Pathogens



Summary: (1) Background: Essential oils (EOs) have emerged as promising antibacterial agents due to their broad-spectrum activity and low risk of resistance development. Therefore, this review aimed to assess the effectiveness of EOs against Gram-positive ESKAPE pathogens, and to evaluate their safety and to...

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Artificial Intelligence-Enhanced Liquid Biopsy and Radiomics in Early-Stage Lung Cancer Detection: A Precision Oncology **Paradigm**

Shivaram P Arunachalam

1 2025-10-16 min 57 Low vision

Summary: CONCLUSION: The integration of AI with liquid biopsy and radiomics holds transformative potential for early lung cancer detection. This non-invasive, scalable, and individualized diagnostic paradigm could significantly reduce lung cancer mortality through timely and targeted interventions. As techno...

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https://pubmed.ncbi.nlm.nih.gov/41097693/?

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One-Hot Multi-Level Leaky Integrate-and-Fire Spiking Neural Networks for Enhanced Accuracy-Latency Tradeoff









Summary: Spiking neural networks (SNNs) hold significant promise as energy-efficient alternatives to conventional artificial neural networks (ANNs). However, SNNs require computations across multiple timesteps, resulting in increased latency, heightened energy consumption, and additional memory access overhe...

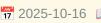
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Artificial intelligence and computer-aided diagnosis in diagnostic decisions: 5 questions for medical informatics and human-computer interface research









LOW VISION

Summary: OBJECTIVES: Artificial intelligence (AI) has the potential to transform medical informatics by supporting clinical decision-making, reducing diagnostic errors, and improving workflows and efficiency. However, successful integration of AI-based decision support systems depends on careful consideratio...

https://pubmed.ncbi.nlm.nih.gov/41101774/?

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OsiriXGPT: An Innovative AI Co-pilot Plug-In for Seamless **Deployment of Generative AI Models in Scan-to-Scan Reporting Workflows**







LOW VISION

Summary: Generative Artificial Intelligence (GenAI) has the potential to transform radiology by reducing reporting burdens, enhancing diagnostic workflows and facilitating communication of complex radiological information. However, research and adoption remain limited due to the lack of seamless integration ...

https://pubmed.ncbi.nlm.nih.gov/41102424/?

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Artificial intelligence-assisted glaucoma detection on color fundus images: with comorbidity and cross-institutional analysis



Summary: CONCLUSION: The proposed AI system can detect glaucoma on standard color fundus photographs with high accuracy across clinical environments and in the presence of comorbid eye diseases. The system may be a practical and affordable tool for large-scale glaucoma screening, particularly in institutions...

⊗ Read full article:

https://pubmed.ncbi.nlm.nih.gov/41102915/?

Rapid and accurate prediction of cycloplegic refraction in Chinese children: development and validation of machine learning models



LOW VISION

Summary: CONCLUSIONS: The ML models enable cSE prediction based on non-cycloplegic refraction data and ocular biometric parameters, providing a fast, practical method for estimating refractive error. Multicenter validation and targeted oversampling of rare refractive subgroups are required, however, before r...

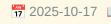
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3-Year Comparison Of Two Mix-And-Match Strategies: **Enhanced Monofocal And Trifocal Versus Enhanced Monofocal And Trifocal EDOF IOLs**







Summary: CONCLUSIONS: Combined implantation of enhanced monofocal and trifocal/ trifocal EDOF IOLs yields excellent distance and intermediate vision. Near visual acuity and spectacle independence was higher in the Isopure-HP group. Low incidence of photic phenomena and high patient satisfaction highlight the ...

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Donor Diabetes and 1-Year Descemet Membrane Endothelial Keratoplasty Success Rate: A Randomized Clinical Trial







LOW VISION

Summary: CONCLUSIONS AND RELEVANCE: The 1-year success rate in eyes undergoing DMEK with successfully prepared tissue was very high regardless of donor diabetes status. These results, supported by the separately reported finding that endothelial cell loss and cornea morphometry after 1 year were not affected...

Read full article:

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









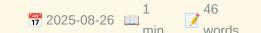
Summary: The development of highly sensitive, wide linear-range flexible pressure sensors is crucial for practical applications in human-computer interaction, physiological signal detection, and motion monitoring. However, traditional flexible pressure sensors often suffer from limited compressibility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

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











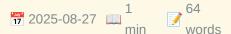
Summary: CONCLUSION: Sensory disability status influenced women's contraceptive behaviour in South Africa. Current family planning interventions should target women with sensory disabilities by prioritising accessible communication methods (e.g., braille, sign language), disability awareness training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

Read full article:

https://pubmed.ncbi.nlm.nih.gov/40855574/?

Explosion-powered eversible tactile displays







BRAILLE

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

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











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

Read full article:

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

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







BRAILLE

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

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

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











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

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https://pubmed.ncbi.nlm.nih.gov/40889233/?

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











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

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

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











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

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

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



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

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

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







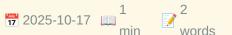


Summary: This study evaluated the effectiveness of an audiosensory performance method in enhancing oral health knowledge and status among visually impaired children aged 6-12 years in the National Capital Region (NCR), Delhi. An interventional study design was used, involving 251 participants equally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

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The Pivot





HACKER NEWS

Summary: Comments



https://www.antipope.org/charlie/blog-static/2025/10/the-pivot-1.html

The Pivot



Summary: Article URL: https://www.antipope.org/charlie/blog-static/2025/10/the-pivot-1.html Comments URL: https://news.ycombinator.com/item?id=45621074...

⊗ Read full article:

https://www.antipope.org/charlie/blog-static/2025/10/the-pivot-1.html

VibTac: A High-Resolution High-Bandwidth Tactile Sensing Finger for Multi-Modal Perception in Robotic Manipulation



Summary: Tactile sensing is pivotal for enhancing robot manipulation abilities by providing crucial feedback for localized information. However, existing sensors often lack the necessary resolution and bandwidth required for intricate tasks. To address this gap, we introduce VibTac, a novel multi-modal tacti...

Read full article:

http://ieeexplore.ieee.org/document/10965524

Age-Related Impact in Illusory Torque Cues Induced by **Asymmetric Vibrations**



TRANSACTIONS HAPTICS

Summary: Illusory pulling sensations in the translational or rotational direction are induced by asymmetric vibrations applied to the fingertips. Although previous studies have discussed the involvement of mechanoreceptors associated with skin deformation and spatial processing in the parietal association co...

http://ieeexplore.ieee.org/document/10955171

Editorial: Emerging practices in therapeutic targeting of neurodegenerative diseases by modulating protein kinases



BRAIN RESEARCH

Summary: Publication date: 15 November 2025Source: Brain Research, Volume 1867Author(s): Md.Imtaiyaz Hassan, Belgin Sever

Read full article:

https://www.sciencedirect.com/science/article/pii/S0006899325005190?dgcid=rss sd all

Altered social proximity in adult mice following prenatal stress Exposure: An exploratory link to cortical neurogenesis

1 min

BRAIN RESEARCH

Summary: Publication date: 1 December 2025Source: Brain Research, Volume 1868Author(s): Tsukasa Tomoe, Rei Sugiyama, Niina Kiriyama, Airi Otsuka, Munekazu Komada

https://www.sciencedirect.com/science/article/pii/S0006899325005463?dgcid=rss sd all

Faster adult implicit probabilistic statistical learning following childhood adversity





187 words

BIORXIV NEUROSCIENCE

Summary: According to deficit models, early life adversity disrupts normal development, leading to long-term emotional, behavioural, and cognitive difficulties. However, some evidence suggests that certain psychological skills may be preserved or even enhanced by early adversity. We hypothesised that implici...

https://www.biorxiv.org/content/10.1101/2025.10.15.682535v1?rss=1

Computational modelling of functional maturation of primary motoneuron firing properties in developing zebrafish

Gaudreau, S. F., Bui,

1 161 min words

BIORXIV NEUROSCIENCE

Summary: Several ion currents of zebrafish primary motoneurons undergo changes in expression level during early development. Similarly, the firing properties of primary motoneurons and their involvement during locomotor activity change during early development as locomotor control of developing zebrafish mat...

https://www.biorxiv.org/content/10.1101/2025.10.17.683092v1?rss=1

Psychedelic 5-HT_{2A} receptor agonism alters neurovascular coupling and differentially affects neuronal and hemodynamic measures of brain function

1 35 min words

NATURE NEUROSCIENCE

Summary: Nature Neuroscience, Published online: 13 October 2025; www.nature.com/articles/s41593-025-02069-z">doi:10.1038/s41593-025-02069-z</ p>Padawer-Curry et al. show that the hallucinogenic 5-HT2A receptor agonist DOI alters neurovascular coupling in mice, with implications for the...

Read full article:

https://www.nature.com/articles/s41593-025-02069-z

This Week in The Journal





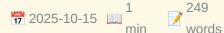


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Network Activity Shapes Inhibitory Synaptic Development in the Mouse Hippocampus







JOURNAL NEUROSCIENCE CURRENT

Summary: The proper development of excitatory/inhibitory (E/I) balance is critical for brain function, as any imbalance has been associated with myriad neuropsychiatric disorders. How this balance evolves during synaptic development remains unclear. To address this question, we examine how manipulations o...

http://www.jneurosci.org/cgi/content/short/45/42/e1182242025?rss=1

Stereoelectroencephalography Reveals Neural Signatures of Multisensory Integration in the Human Superior Temporal Sulcus during Audiovisual Speech Perception

Zhang, Y., Magnotti, J. F., Zhang, X., Wang, Z., Yu, Y., Davis, K. A., Sheth, S. A., Isaac Chen, H., Yoshor, D., Beauchamp, M. S.

2025-10-15 min 244
words

JOURNAL NEUROSCIENCE CURRENT

Summary: Human speech perception is multisensory, integrating auditory information from the talker's voice with visual information from the talker's face. BOLD fMRI studies have implicated the superior temporal gyrus (STG) in processing auditory speech and the superior temporal sulcus (STS) in integrating...

http://www.jneurosci.org/cgi/content/short/45/42/e1037252025?rss=1

Competition between Tool and Hand Motion Impairs Movement Planning in Limb Apraxia

Thibault, S., Yates, J. B., Buxbaum, L. J., Wong, A.

Thibault, S., Yates, J. B., Buxbaum, L. J., Wong, A.

Thibault, S., Yates, J. B., Buxbaum, L. J., Wong, A.

Thibault, S., Yates, J. B., Buxbaum, L. J., Wong, A.

JOURNAL NEUROSCIENCE CURRENT

Summary: Tool use is a complex motor planning problem. Prior research suggests that planning to use tools involves resolving competition between different tool-related action representations. We therefore reasoned that competition may also be exacerbated with tools for which the motions of the tool and th...

Read full article:

http://www.jneurosci.org/cgi/content/short/45/42/e0692252025?rss=1

Largely Intact But Less Reliable and Distributed Neural Representations of Subjective Value in Human Opioid Addiction

LoFaro, F. M., Gueguen, M. C. M., Kapoor, A., Alvarez, E. E., Bonagura, D., Konova, A. B.



Summary: Addiction, particularly opioid use disorder (OUD), is often characterized by heightened propensity for risk-taking. While tolerance for risk and uncertainty varies across individuals, the elevated risk-taking in people with OUD is assumed to stem from altered cognitive decision-making processes b...

http://www.jneurosci.org/cgi/content/short/45/42/e0679252025?rss=1

Metallothionein III Mediates Ca2+-Dependent Zn2+ Spikes to Inhibit Dendritic Arborization

Salvagio, L., Zhang, C., Rue, B. E., Doris, N., Koehring, C., Tyler, I., Vargas, R. S., Oh, W. C., Qin, Y.

1 2025-10-15 min 244 JOURNAL NEUROSCIENCE CURRENT words

Summary: Zinc is crucial for neuron function, but whether and how labile zinc ion (Zn²⁺) acts as an intracellular signaling molecule remains unclear. In this work, we investigate the relationship between Ca²⁺ and Zn²⁺ dynamics using fluorescence imaging. Our findings revea...

http://www.jneurosci.org/cgi/content/short/45/42/e0627252025?rss=1

Marmoset Anterior Cingulate Area 32 Neurons Exhibit Responses to Presented and Produced Calls during Naturalistic Vocal Communication

Johnston, K. D., Gilliland, R. E., Wong, R. K., Everling,

1 154 min words

JOURNAL NEUROSCIENCE CURRENT

Summary: Vocal communication is a complex social behavior that entails the integration of auditory perception and vocal production. Both anatomical and functional evidence have implicated the anterior cingulate cortex (ACC), including area 32, in these processes, but the dynamics of neural responses in ar...

http://www.jneurosci.org/cgi/content/short/45/42/e0405252025?rss=1

How the Ventromedial Prefrontal Cortex (VMPFC) Facilitates **Welfare Maximization in Social Contexts**





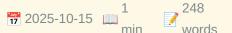




http://www.jneurosci.org/cgi/content/short/45/42/e0221252025?rss=1

Prenatal Downregulation of CB1 Cannabinoid Receptors in the Mouse Prefrontal Cortex Disrupts Cortical Lamination and **Induces a Transcriptional Signature Associated with Social** Interaction Deficits

Simon-Sanchez, S., den Boon, F., Garcia-Rincon, D., Skrempou, G., Paraiso-Luna, J., Aguilera, A., Nieto, M., Werkman, T. R., Guzman, M., Chameau, P., Galve-Roperh, I.







JOURNAL NEUROSCIENCE CURRENT

Summary: Endocannabinoid signaling exerts a neurodevelopmental regulatory role via CB₁ cannabinoid receptors (CB₁Rs), which control pyramidal neuron differentiation, migration, and axonal guidance. Here, we investigated the longlasting consequences of transient prenatal CB<sub>1</su...



http://www.jneurosci.org/cgi/content/short/45/42/e0120252025?rss=1

Layer 6 Corticothalamic Neurons Induce High Gamma Oscillations Through Cortico-cortical and Cortico-thalamocortical Pathways

1 249 min words Russo, S., Dimwamwa, E. D., Stanley, G.

JOURNAL NEUROSCIENCE CURRENT

Summary: Layer 6 corticothalamic (L6CT) neurons project to both cortex and thalamus, inducing multiple effects including the modulation of cortical and thalamic firing, and the emergence of high gamma oscillations in the cortical local field potential (LFP). We hypothesize that the high gamma oscillations...

http://www.jneurosci.org/cgi/content/short/45/42/e0094252025?rss=1

This Week in The Journal



1 0 min words



JOURNAL NEUROSCIENCE CURRENT

http://www.jneurosci.org/cgi/content/short/45/42/etwij45422025?rss=1

Statistical physics of large-scale neural activity with loops

David P. CarcamoChristopher W. LynnaDepartment of Physics, Yale University, New Haven, CT

■ 06511bQuantitative Biology Institute, Yale University, New Haven, CT 06511cWu Tsai Institute, Yale University, New Haven, CT 06510



Summary: Proceedings of the National Academy of Sciences, Volume 122, Issue 41, October 2025.

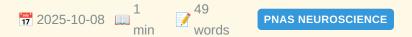
SignificanceExperimental advances provide recordings of neural activity at unprecedented scales. But to understand how this activity emerges from the correlations between neurons, we need models that can simul...

https://www.pnas.org/doi/abs/10.1073/pnas.2426926122?af=R

Transpupillary in vivo two-photon imaging reveals enhanced surveillance of retinal microglia in diabetic mice

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Summary: Proceedings of the National Academy of Sciences, Volume 122, Issue 41, October 2025.

SignificanceNumerous studies have developed imaging techniques for visualizing diverse cell types in the retina. However, these techniques often face challenges such as low resolution and the need for technica...

https://www.pnas.org/doi/abs/10.1073/pnas.2426241122?af=R

Editorial: Advancements in smart diagnostics for understanding neurological behaviors and biosensing applications



Correction: Prenatal substance exposure and infant neurodevelopment: a review of magnetic resonance imaging studies



⊗ Read full article:

https://www.frontiersin.org/articles/10.3389/fnhum.2025.1717377

RSA-TransUNet: a robust structure-adaptive TransUNet for enhanced road crack segmentation



Summary: With the advancement of deep learning, road crack segmentation has become increasingly crucial for intelligent transportation safety. Despite notable progress, existing methods still face challenges in capturing fine-grained textures in small crack regions, handling blurred edges and significant wid...

https://www.frontiersin.org/articles/10.3389/fnbot.2025.1633697

Approaches for retraining sEMG classifiers for upper-limb prostheses







FRONTIERS NEUROROBOTICS

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



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

DWMamba: a structure-aware adaptive state space network for image quality improvement







FRONTIERS NEUROROBOTICS

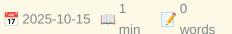
Summary: Overcoming visual degradation in challenging imaging scenarios is essential for accurate scene understanding. Although deep learning methods have integrated various perceptual capabilities and achieved remarkable progress, their high computational cost limits practical deployment under resource-cons...



https://www.frontiersin.org/articles/10.3389/fnbot.2025.1676787

Editorial: What makes us human: from genes to machine







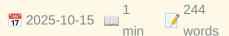
FRONTIERS NEUROSCIENCE



https://www.frontiersin.org/articles/10.3389/fnins.2025.1682082

Anodal transcranial direct current stimulation does not alter GABA concentration or functional connectivity in the normal visual cortex







FRONTIERS NEUROSCIENCE

Summary: IntroductionAnodal direct current stimulation (a-tDCS) of the visual cortex is a potential rehabilitation tool for vision disorders such as amblyopia and macular degeneration. However, the underlying neural mechanisms are currently unknown. When applied to the human motor cortex, a-tDCS reduces the ...

Read full article:

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A pipelined, resource-efficient convolutional neural network architecture for detecting and diagnosing Alzheimer's disease using brain sMRI



V. 1 2025-10-15 min 265 words

FRONTIERS NEUROSCIENCE

Summary: IntroductionAlzheimer's disease (AD) is a progressive neurological disorder that impairs memory and cognitive function in elderly individuals. Early detection is vital to slow disease progression and enable timely therapeutic intervention. Traditional diagnostic approaches for AD, however, often inv...

⊗ Read full article:

https://www.frontiersin.org/articles/10.3389/fnins.2025.1653565

Balancing accuracy and efficiency: co-design of hybrid quantization and unified computing architecture for spiking neural networks



Liang
Chen

1
2025-10-15
min

257
FRONTIERS NEUROSCIENCE





Summary: The deployment of Spiking Neural Networks (SNNs) on resource-constrained edge devices is hindered by a critical algorithm-hardware mismatch: a fundamental tradeoff between the accuracy degradation caused by aggressive quantization and the resource redundancy stemming from traditional decoupled hard...

Read full article:

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

Maria Carla
Piastra

1
2024-06-14

min

64

words

OOSTENVELD ROBERT

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

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



1 72 min words

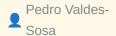


OOSTENVELD ROBERT

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

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One hundred years of EEG for brain and behaviour research







OOSTENVELD ROBERT

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







OOSTENVELD ROBERT

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

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

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

Krzysztof J
Gorgolewski

Sorgolewski

Gorgolewski

Sorgolewski

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Sorgolewski

Sorgolewski

Sorgolewski

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

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

1 65 min words

OOSTENVELD ROBERT

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

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

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

Luca 1 70
Pollonini 2025-01-27 min words

OOSTENVELD ROBERT

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

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



Lyuba
Zehl

Zehl

Zo25-06-26 min

Zostenveld robert

Oostenveld robert

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

Read full article:

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

Tim M
Tierney

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

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Optimal configuration of on-scalp OPMs with fixed channel counts







OOSTENVELD ROBERT

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

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

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

Thomas
Hummel

Thomas

Tactile Acuity

Thomas

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

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

Hiroyuki

1 75
min words

TACTILE ACUITY

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

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

Leah R

Bent

1

69

words

TACTILE ACUITY

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

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Directional vibro-tactile hazard warnings for drivers with vision impairments

Alex R

Bowers

1

80

min

words

TACTILE ACUITY

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

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







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

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









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

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

Paula Anne Newman-Casev

1 74 TACTILE ACUITY words

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

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

Sviatoslav N Bagriantsev

1 2025-09-13 min 58 words

TACTILE ACUITY

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

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

Charles M

Greenspon

1

86

words

TACTILE ACUITY

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

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









TACTILE ACUITY

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

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

Jianming 1 62
Xu min words



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

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



1 46 min words





BRAILLE

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

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Explosion-powered eversible tactile displays







BRAILLE

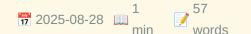
Summary: High-resolution electronic tactile displays stand to transform haptics for remote machine operation, virtual reality, and digital information access for people who are blind or visually impaired. Yet, increasing the resolution of these displays requires increasing the number of individually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

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









BRAILLE

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

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







BRAILLE

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

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









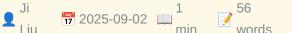
Summary: It has been argued in previous research that several competing pressures guide the directions of language evolution (economy vs. redundancy; arbitrariness vs. systematicity). For sign languages, however, the effects of competing pressures on their change of lexical systems remain largely unclear.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

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









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











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

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

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



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

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

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



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

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

Transcranial direct current stimulation (tDCS) for cognitive impairment in schizophrenia: A systematic review and metaanalysis of randomized controlled trials

Roberto Rodriguez
Jimenez

1

46

words

TDCS TACS TRNS

Summary: CONCLUSIONS: tDCS shows domain-specific potential for cognitive enhancement in schizophrenia, particularly in verbal learning. However, the small effect sizes, high heterogeneity, and limited methodological rigor of included trials warrant cautious interpretation. Future research should emphasize st...

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Cortical modulation by exogenous electric fields is consistent with electric dipoles

Maria V Sanchez-

1 65 words

TDCS TACS TRNS

Summary: Cortical activity can be modulated by endogenous and exogenous electric fields (EFs). Recent experimental and computational data suggested that endogenous EFmediated effects are compatible with electric dipoles, which contribute to the synchronization of neighboring cortical columns. Consistently, ...

Read full article:

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A deep learning approach to artifact removal in Transcranial **Electrical Stimulation: From shallow methods to deep neural** networks and state space models

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Summary: Transcranial Electrical Stimulation (tES) is a non-invasive neuromodulation technique that generates artifacts in simultaneous EEG recordings, hindering brain activity analysis. This study analyzes Machine Learning (ML) methods for tES noise artifact removal across three stimulation types: tDCS, tAC...

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Diffusion trajectory of atypical morphological development in autism spectrum disorder



1 2025-10-16 min 68





TDCS TACS TRNS

Summary: Brain development from childhood through adolescence is crucial for understanding autism spectrum disorder (ASD). Yet how functional networks regulate developmental changes in brain morphology remains unclear. Here, we analyzed gray matter volume (GMV) and functional connectivity (FC) in 301 individ...

Read full article:

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Primary stabbing headache in a tertiary headache centre

1 2025-10-16 min 58

TDCS TACS TRNS

Summary: INTRODUCTION: Primary stabbing headache (PSH) is a short-lasting head pain occurring spontaneously in the absence of underlying structural causes. Although it is a frequent disorder, with a reported lifetime prevalence of 35.2% in the general population, its pathophysiological underpinnings remain i...

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



1 63 min words



TDCS TACS TRNS

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

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High-intensity transcranial alternating current stimulation combined with pharmacotherapy for adolescent major depressive disorder: a prospective case report study



Summary: CONCLUSIONS: The combination of HI-tACS and pharmacotherapy demonstrated potential early effects in this small cohort of adolescents with MDD, particularly during the initial phase of treatment. These preliminary findings warrant further investigation through large-scale randomized controlled trials...

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https://pubmed.ncbi.nlm.nih.gov/41103740/?

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Non-invasive brain stimulation for suicidal ideation: a systematic review and metanalysis of the current literature









TDCS TACS TRNS

Summary: Data suggests that the available therapeutic tools are still insufficient to deal with suicidality. Non-Invasive Brain Stimulation techniques (NIBS) have entered the recognized guidelines for therapies in psychiatry due to the advantages related to safety and tolerability. The purpose of this review...

Read full article:

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Active and sham transcranial direct-current stimulation (tDCS) plus core stability on the knee kinematic and performance of the lower limb of the soccer players with dynamic knee valgus; two armed randomized clinical trial





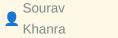




Summary: Dynamic knee valgus (DKV) is a prevalent risk factor for anterior cruciate ligament (ACL) injuries in soccer players, particularly during noncontact mechanisms. Transcranial direct-current stimulation (tDCS) and core stability exercises have shown promise in enhancing motor control and biomechanical...

https://pubmed.ncbi.nlm.nih.gov/41103970/?

Effect of Precision-based HD-tDCS Over Conventional HDtDCS in Young-onset Mania: Protocol for an Active **Comparison fMRI and TMS Study**







TDCS TACS TRNS

Summary: CONCLUSIONS: This study protocol aims to explore the effect of novel precision-based HD-tDCS in young-onset mania compared to conventional HD-tDCS, thereby allowing for the examination of precision neuromodulation in young-onset mania.

https://pubmed.ncbi.nlm.nih.gov/41104323/?

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Functional connectivity in whole-brain and network analysis differentiates minimally conscious from unresponsive patients: a resting-state fNIRS study











Summary: CONCLUSION: fNIRS could effectively detect abnormal brain network functional connectivity in DOC patients and could provide valuable insights for differentiating MCS and VS/UWS patients.

https://pubmed.ncbi.nlm.nih.gov/41088235/?

Predicting Individual Response to Acupuncture in Sensorineural Tinnitus Using Integrated Functional Near-Infrared Spectroscopy and Machine Learning: Protocol for a Model Development and Validation Study



Summary: CONCLUSION: This study represents the first attempt to integrate fNIRS detection with machine learning techniques for predicting acupuncture efficacy in SNT treatment. The methodology addresses several key challenges in acupuncture research through comprehensive data collection and advanced analytic...

https://pubmed.ncbi.nlm.nih.gov/41089742/?

Online Regulation of Task Difficulty based on Neuro- and **Motor-feedback to improve engagement in Visual-motor Task**



Rong 1 36
Song min words

Summary: CONCLUSION: Our findings suggest that the proposed NMF system can enable online neural activity regulation in visual-motor tasks and achieve enhanced integration between cognitive and sensorimotor areas, with the potential to improve the rehabilitation training outcomes.

https://pubmed.ncbi.nlm.nih.gov/41091617/?

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Effect of lower limb mirror visual feedback on cortical activation in healthy subjects: a self-controlled randomized trail



Li 1 31 words





Summary: CONCLUSION: LLMVF increases neural activity in the sensory and motor related areas, indicating that LLMVF can promote more activation of brain functional areas, which verifies the top-down positive effect of LLMVF.

https://pubmed.ncbi.nlm.nih.gov/41094487/?

TSFNet: Temporal-Spatial Fusion Network for Hybrid Brain-Computer Interface



Summary: Unimodal brain-computer interfaces (BCIs) often suffer from inherent limitations due to the characteristic of using single modalities. While hybrid BCIs combining electroencephalography (EEG) and functional near-infrared spectroscopy (fNIRS) offer complementary advantages, effectively integrating th...

https://pubmed.ncbi.nlm.nih.gov/41094934/?

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Diagnostic Efficacy of Olfactory Function Test Using Functional Near-Infrared Spectroscopy with Machine Learning in Healthy Adults: A Prospective Diagnostic-Accuracy (Feasibility/Validation) Study in Healthy Adults with Algorithm Development



Summary: Background/Objectives: The YSK olfactory function (YOF) test is a culturally adapted psychophysical tool that assesses threshold, discrimination, and identification. This study evaluated whether functional near-infrared spectroscopy (fNIRS) synchronized with routine YOF testing, combined with machin...

⊗ Read full article:

https://pubmed.ncbi.nlm.nih.gov/41095653/?

Enhanced Activation in the Dorsolateral Prefrontal Cortex and Inferior Parietal Lobule During Recovery from Body Dissatisfaction

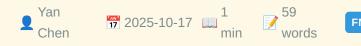


Summary: Previous studies have examined the neural mechanisms of body dissatisfaction. This study aimed to investigate the neural basis of recovery from body dissatisfaction. Sixty-seven young women participated in this study, engaging in a fat talk-a conversation known to induce body dissatisfaction-followe...

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https://pubmed.ncbi.nlm.nih.gov/41099370/?

Immediate modulation effects of Tongue Tri-needle on brain functional networks in infratentorial stroke patients with dysphagia: a randomized controlled trial



Summary: CONCLUSION: Infratentorial stroke patients with dysphagia exhibit disrupted functional connectivity within the fronto-temporo-sensorimotor network, which is associated with clinical impairment. Tongue Tri-needle multi-stage, selective reconfiguration of brain functional networks, particularly by mod...

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Riemannian geometry boosts functional near-infrared spectroscopy-based brain-state classification accuracy

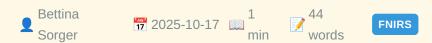


Summary: CONCLUSION: To our knowledge, we are the first to demonstrate that the proposed Riemannian-geometry-based classification approach is both powerful and viable for fNIRS data, substantially increasing the accuracy in binary and multi-class classification of brain activation patterns.

Read full article:

https://pubmed.ncbi.nlm.nih.gov/41104354/?

Sensitive and specific fNIRS-based approach for awareness detection in disorders of consciousness: proof of principle in healthy adults



Summary: CONCLUSION: This individualized diagnostic approach may have the potential to significantly enhance diagnostic accuracy for DoCs. It provides a noninvasive, efficient, and objective assessment, potentially reducing the rate of misdiagnosis rates. The practicality and minimal technical requirements o...

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Investigation of the Prognostic Value of Novel Laboratory Indices in Patients with Sepsis in an Intensive Care Unit: A Retrospective Observational Study





BRAIN COMPUTER INTERFACE

Summary: Background: This study aimed to evaluate the prognostic value of some novel laboratory indices in intensive care unit (ICU)-hospitalized sepsis patients. Methods: This retrospective, observational study included 400 patients with sepsis. The indices studied were the C-reactive protein/albumin ratio ...

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+e462414

Effectiveness of Electroencephalographic Neurofeedback for Parkinson's Disease: A Systematic Review and Meta-Analysis

Andrew Cooke

1 63 min words

BRAIN COMPUTER INTERFACE

Summary: Background: Electroencephalographic (EEG) neurofeedback training is gaining traction as a non-pharmacological treatment option for Parkinson's disease (PD). This paper reports the first pre-registered, integrated systematic review and meta-analysis of studies examining the effects of EEG neurofeedba...

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A Novel Grasping Robot Control Method Using Motion **Execution BCI Combining Knowledge Reasoning**

Wang

1 68 min words



BRAIN COMPUTER INTERFACE

Summary: Recently, with the growing number of disabled people, brain-controlled technology offers a novel way to help patients restore their daily abilities. However, the conventional brain-controlled system based on the motion related task lacks intelligence in real-world environments. To address above prob...

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Advances in flexible high-density microelectrode arrays for brain-computer interfaces

Woon-Hong
Yeo

1
2025-10-16 min

61
BRAIN COMPUTER INTERFACE

Summary: Recent advances in flexible high-density microelectrode arrays (FHD-MEA) have revolutionized brain-computer interfaces (BCIs) by providing high spatial resolution, mechanical compliance, and long-term biocompatibility. This technology enables stable neural recording and precise stimulation, addressi...

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Neural mechanism of the sexually dimorphic winner effect in mice

Hailan

1 70 min words

BRAIN COMPUTER INTERFACE

Summary: The "winner effect," where prior victories increase the likelihood of future wins, profoundly shapes social hierarchy dynamics and competitive motivation. Although human literature suggests a less pronounced winner effect in females, the neural mechanisms underlying these sex differences remain uncl...

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Artificial intelligence and computer-aided diagnosis in diagnostic decisions: 5 questions for medical informatics and human-computer interface research







BRAIN COMPUTER INTERFACE

Summary: OBJECTIVES: Artificial intelligence (AI) has the potential to transform medical informatics by supporting clinical decision-making, reducing diagnostic errors, and improving workflows and efficiency. However, successful integration of AI-based decision support systems depends on careful consideratio...

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Diffusion trajectory of atypical morphological development in autism spectrum disorder

Xujun 1 68
Duan min words

BRAIN COMPUTER INTERFACE

Summary: Brain development from childhood through adolescence is crucial for understanding autism spectrum disorder (ASD). Yet how functional networks regulate developmental changes in brain morphology remains unclear. Here, we analyzed gray matter volume (GMV) and functional connectivity (FC) in 301 individ...

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A Moratorium on Implantable Non-Medical Neurotech Until **Effects on the Mind are Properly Understood**

2025-10-17 min 67 words





BRAIN COMPUTER INTERFACE

Summary: The development of non-medical consumer neurotechnology is gaining momentum. As companies chart the course for future implanted and invasive braincomputer interfaces (BCIs) in non-medical populations, the time has come for concrete steps toward their regulation. We propose three measures: First, a ...

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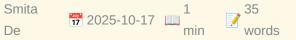
utm_source=BucketBot&utm_medium=rss&utm_campaign=None&utm_content=1rSUu-tbw4049Wgf RdKXdtNCvGW0lVBZFpHe7zaN4k4DwoD5&fc=None&ff=20251017162151&v=2.18.0.post9 +e462414

Simple Prostatectomy is an Effective Option for BPH Patients With Hypocontractile Bladders









BRAIN COMPUTER INTERFACE

Summary: CONCLUSIONS: This is one of the first studies assessing outcomes of SP in patients with hypocontractile bladders. SP is an effective surgical option for patients with impaired detrusor function including those who are catheter dependent.

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Electromagnetic Stimulation to Reduce Disability After Ischemic Stroke: The EMAGINE Randomized Clinical Trial

EMAGINE 1 Trial Investigators

1 2025-10-17 min 48 words

BRAIN COMPUTER INTERFACE

Summary: CONCLUSION AND RELEVANCE: This trial found that ENTF therapy is safe. Although the difference between groups was not statistically significant, ENTF therapy may reduce global disability in patients with severe baseline disability after ischemic stroke. These results warrant confirmation in a higher ...

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+e462414

Implicit learning of melodic structure: A role for pitch?

1 180 PSYCHOMUSICOLOGY words

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

http://doi.org/10.1037/pmu0000303

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

1 259 min 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...

http://doi.org/10.1037/pmu0000304

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

1 192 min 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 I...

http://doi.org/10.1037/pmu0000302

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

1 2023-10-12 min 227 PSYCHOMUSICOLOGY words

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 ...

http://doi.org/10.1037/pmu0000300

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

1 2023-07-10 min 202 PSYCHOMUSICOLOGY

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.

1 2023-08-03 min 217 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...

http://doi.org/10.1037/pmu0000299

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

1 155 min words





BEHAVIORAL NEUROSCIENCE

Summary: Individuals differ in sensitivity to the adverse consequences of their actions. We have shown that these differences can be linked to differences in correctly learning causal relationships between actions and their negative consequences. To further assess this, here we used a conditioned punishment ...

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.

273 BEHAVIORAL NEUROSCIENCE words

Summary: Deep brain stimulation (DBS) of the nucleus basalis of Meynert (NBM) has been preliminarily investigated as a potential treatment for dementia. The degeneration of NBM cholinergic neurons is a pathological feature of many forms of dementia. Although NBM stimulation has been demonstrated to improve I...

⊗ Read full article:

http://doi.org/10.1037/bne0000625

If starting from scratch, what would you change in Python. And bringing back an old discussion.



Summary: <!-- SC_OFF --><div class="md">I know that it's a old discussion on the community, the trade of between simplicity and "magic" was a great topic about 10 years ago. Recently I was making a Flask project, using some extensions, and I stop to think about the usage pattern of this library....

Read full article:

https://www.reddit.com/r/Python/comments/1o98n90/ if_starting_from_scratch_what_would_you_change_in/

Asking AI to build scrapers should be easy right?



Summary: Comments

https://www.skyvern.com/blog/asking-ai-to-build-scrapers-should-be-easy-right/

Exploring PostgreSQL 18's new UUIDv7 support



Summary: Comments

https://aiven.io/blog/exploring-postgresql-18-new-uuidv7-support

Show HN: We packaged an MCP server inside Chromium

felarof 7 2025-10-17 min 2 434 words

Summary: Hey HN, we just shipped a browser with an inbuilt MCP server!We're a YC startup (S24) building BrowserOS — an open-source Chromium fork. We're a privacy-first alternative to the new wave of AI browsers like Dia, Perplexity Comet. Since launching ~3 months ago, the #1 request has been to expose...

https://github.com/browseros-ai/BrowserOS/blob/main/docs/browseros-mcp/how-to-guide.mdx

Asking AI to build scrapers should be easy right?

suchintan 2025-10-17 min 13 HACKER NEWS

Summary: Article URL: https://www.skyvern.com/blog/asking-ai-to-build-scrapers-should-be-easy-right/ Comments URL: https://news.ycombinator.com/item?i...

https://www.skyvern.com/blog/asking-ai-to-build-scrapers-should-be-easy-right/

A cognitive approach to human–AI complementarity in dynamic decision-making



Read full article:

https://www.nature.com/articles/s44159-025-00499-x

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

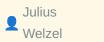


Summary: Previous studies have found electroencephalogram (EEG) amplitude and scalp topography differences between neurotypical and neurological/neurosurgical groups, being interpreted at the cognitive level. However, these comparisons are invariably accompanied by anatomical changes. Critical to EEG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

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



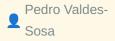
1 72 2024-07-02 min words OOSTENVELD ROBERT

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

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One hundred years of EEG for brain and behaviour research







OOSTENVELD ROBERT

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

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

Richard J A van

1 65 min words

OOSTENVELD ROBERT

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

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

Krzysztof J Gorgolewski 1 82 min words

OOSTENVELD ROBERT

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

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

Fanny Quandt

1 65 min words

OOSTENVELD ROBERT

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

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



1 70 min words

OOSTENVELD ROBERT

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

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