NAT'25
Towards Neuroadaptive HCI and AI

Date: 7th to 10th of April, 2025
Location: Abion Spreebogen Hotel, Berlin, Germany
Facilitator: Society for Neuroadaptive Technology & Brandenburg University of Technology

NAT'25: Towards Neuroadaptive HCI and AI

Background

Neuroadaptive technology (NAT) integrates real-time neurophysiological data into adaptive systems, creating a seamless feedback loop for intelligent software adjustments. By measuring electrocortical and neurovascular brain activity, NAT dynamically captures the user's psychological state, including cognition, emotion, and motivation. This technology provides unique insights into human information processing and intelligence, paving the way for more flexible and human-like machine intelligence.

Motivation

Emerging trends across various scientific disciplines highlight a growing interest in integrating context-sensitive brain information into Artificial Intelligence. NAT'25 aims to unite researchers from fields such as Physiological Computing, Applied Neurosciences, and Passive Brain-Computer Interfaces with experts in Artificial Intelligence, Machine Learning, and Intelligent Systems. The conference's primary objectives are to facilitate the exchange of research questions and discoveries between these domains and to identify shared goals and potential collaborations in Neuroadaptive Technology. Key areas of focus will include real-time signal processing, unsupervised versus supervised machine learning, designing neuroadaptive interactions, explainable AI (XAI), neuroadaptive applications, hybrid AI systems (combining deep learning and symbolic AI for applied neuroscience), ethical considerations of neurotechnology in real-world contexts (e.g., accountability and security), cloud-based data management solutions, and more.

Location

With a stunning view of the Spree River in the heart of Berlin, the AMERON Berlin ABION Spreebogen Waterside offers a unique setting, perfectly situated between the western city center (Ku'Damm) and the eastern city center (Alexanderplatz). As part of the new generation of the AMERON Collection, this 4-star hotel stands out for its individuality, exceptional aesthetic standards, and commitment to quality.

Scope

In addition to bringing together scientists from diverse research areas, NAT'25 extends invitations to industry representatives to share their market-oriented perspectives. The conference also welcomes representatives from national governments to engage in discussions about the legal and societal impacts of Neuroadaptive Technology, exploring ways to align our work and societies with these emerging advancements.

Participation

Participants of NAT'25 are encouraged to submit a short abstract outlining their research findings and/or perspectives on the integration of Neuroadaptive Technology and Artificial Intelligence. They will have the opportunity to present their work during the conference. NAT'25 welcomes both novel research contributions and previously published work to provide a comprehensive overview of relevant advancements across different fields. This approach supports the conference's mission of fostering interdisciplinary collaboration and inspiring cooperative research. Additionally, participants will have the chance to collaboratively develop publications that capture the conference's key outcomes, including proposed roadmaps, theoretical frameworks, and considerations of ethical and societal impacts.

Important Dates

Website open for contribution submission – 1st of December, 2024

Contribution submission deadline – 15th of January, 2025

Author feedback – 7th of February, 2025

Conference – 7th – 10th of April, 2025

Attendees of NAT'17 in Berlin

Registration

Please register via the main conference website neuroadaptive.org

Registration fees – Early Bird

Early Bird Standard
(before 1st of January 2025, CEST)
EUR 600,-

Early Bird Industry / Exhibitors
(before 1st of January 2025, CEST)
EUR 800,-

Early Bird PostDoc
(before 1st of January 2025, CEST)
EUR 500,-

Early Bird PhD/Student
(before 1st of January 2025, CEST)
EUR 450,-

Registration fees – Regular
Regular Standard
(before 8th of February 2025, CEST)
EUR 700,-

Regular Industry / Exhibitors
(before 8th of February 2025, CEST)
EUR 900,-

Regular PostDoc
(before 8th of February 2025, CEST)
EUR 600,-

Regular PhD/Student
(before 8th of February 2025, CEST)
EUR 500,-

Registration fees – Late
Late Standard
(after 8th of February 2025, CEST)
EUR 800,-

Late Industry / Exhibitors
(after 8th of February 2025, CEST)
EUR 1000,-

Late PostDoc
(after 8th of February 2025, CEST)
EUR 700,-

Late PhD/Student
(after 8th of February 2025, CEST)
EUR 600,-

Topics of Interest

BROAD AREAS

- Neuroadaptive
- Artificial Intelligence
- Applications

SPECIFIC TOPICS

- Passive BCIs
- Physiological Computing
- Affective Computing
- Neurofeedback
- Neuroethics

- Machine Learning
- Reinforcement Learning
- Deep Learning
- Autonomous Systems
- User Modelling

- Neurogaming
- Wearable Sensors
- Autonomous Driving
- Virtual Reality
- Robotics

NEUROADAPTIVE
HUMAN-COMPUTER
INTERACTION

NEUROADAPTIVE
TECHNOLOGY

Abstract Submission

Submissions to NAT'25 must be made through the official conference webpage neuroadaptive.org, using the provided template available on the submission page. All abstracts will undergo a blind review by the Program Committee, evaluated based on technical quality, relevance to conference topics, originality, significance, and clarity. To ensure anonymity, author names and affiliations should not be included in the submission, and bibliographic references must be adjusted accordingly. All accepted abstracts will be published in the conference proceedings.

Organizing Committee

Conference Chairs:

Thorsten O. Zander, Brandenburg University of Technology, Germany

Contact Information

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