NAT'22

BRINGING TOGETHER ARTIFICIAL AND HUMAN INTELLIGENCE

NEUROADAPTIVE TECHNOLOGY

Date: 9th to 11th of October, 2022
Location: Castle Lübbenau, near Berlin, Germany
Facilitator: Brandenburg University of Technology and Liverpool John Moores University

Background

Neuroadaptive technology (NAT) utilizes real-time measures of neurophysiological activity within a closed control loop to create intelligent software adaptation. Measures of electrocortical and neurovascular brain activity are quantified to provide a dynamic representation of the psychological state of the user, with respect to cognitions, emotions and motivation. As such, NAT can access unique aspects of human information processing, and human intelligence, which can subsequently be used to enable more versatile and more human-like forms of machine intelligence.

Motivation

Current trends in different scientific fields indicate an increased interest in integrating context-sensitive information from the human brain into Artificial Intelligence. NAT'22 is intended to bring scientists interested in Physiological Computing, Applied Neurosciences and Passive Brain-Computer Interfaces together with experts from the fields of Artificial Intelligence, Machine Learning and Intelligent Systems. The main goals of the conference are an exchange of research questions and findings from both fields and the identification of common goals and joint ventures in the domain of Neuroadaptive Technology, including: real-time signal processing, unsupervised vs. supervised ML, designing neuroadaptive interaction, explainable AI (XAI), neuroadaptive applications, hybrid AI systems (DL + symbolic AI) for applied neurosciences, ethics of neurotechnology in real world (responsibility for action, security), cloud-based solutions for data management and more.

Location

We are pleased to announce that the Third Neuroadaptive Technology Conference (NAT'22) will be held in Lübbenau, near Berlin, Germany, from October 9th to 11th, 2022. The venue for NAT'22 is the Lübbenau Castle, a fully-preserved castle ensemble in the middle of the UNESCO Biosphere Reserve of the Spree Forest, approximately an hour drive from Berlin-Brandenburg Airport.

Scope

In addition to scientists from different areas of research, representatives from companies are invited to attend NAT'22 and add their perspective from a market viewpoint. Furthermore, NAT'22 invites representatives of national governments to discuss the legal and societal impacts of NAT and how we can prepare our work and our societies accordingly.

Participation

Participants of NAT'22 are invited to submit a short abstract describing their research results and/or perspectives on the combination of NAT and Artificial Intelligence and will have the opportunity to present this work at the conference. NAT'22 welcomes novel research results and ideas, but also explicitly invites work that has been already published to provide an overview of relevant research in the different domains. This is intended to support the main idea of the conference to bring scientists from different fields together and inspire cooperative work. Furthermore, Participants of NAT'22 will have the opportunity to jointly work on publications describing the main outcomes of the conference, including concepts of roadmaps, theoretical concepts and ethical/societal considerations.

Important Dates

- Deadline for Abstracts 15.07.2022
- Feedback to authors 15.08.2022
- Early-bird registration 01.08.2022
- Conference October 9th-11th 2022

Attendees of NAT'17 in Berlin

Registration

Please register via the main conference website, neuroadaptive.org.

Early Bird Standard	EUR 300,- (conference, incl. lunch) + EUR 50,- for the Social Evening
Early Bird Industry/Exhibitors	EUR 530,- (conference, incl. lunch) + EUR 50,- for the Social Evening
Standard	EUR 430,- (conference, incl. lunch) + EUR 50,- for the Social Evening
Industry/Exhibitors	EUR 730,- (conference, incl. lunch) + EUR 50,- for the Social Evening

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

Abstract Submission

Submissions to the conference must be made through the webpage www.neuroadaptive.org. Submissions should use the template available on the submission webpage. All abstracts will be blind-reviewed by the Program Committee on the basis of technical quality, relevance to conference topics, originality, significance, and clarity. Author names and affiliations must not appear in the submissions and bibliographic references must be adjusted to preserve author anonymity. All accepted abstracts will be published in the conference proceedings.

Organizing Committee

Conference Chairs:

Thorsten O. Zander, Brandenburg University of Technology, Germany

Stephen H. Fairclough, Liverpool John Moores University, UK

Contact Information

neuroadaptive@b-tu.de