

Workshop: Current and future applications of non-invasive and invasive BCIs



**g.tec medical engineering Austria and
Czech Technical University in Prague – Department of Computer
Graphics and Interaction**

October 19th, 2015

Venue: Faculty of Electrical Engineering

Room: G205

Karlovo náměstí 13

121 35 Praha 2

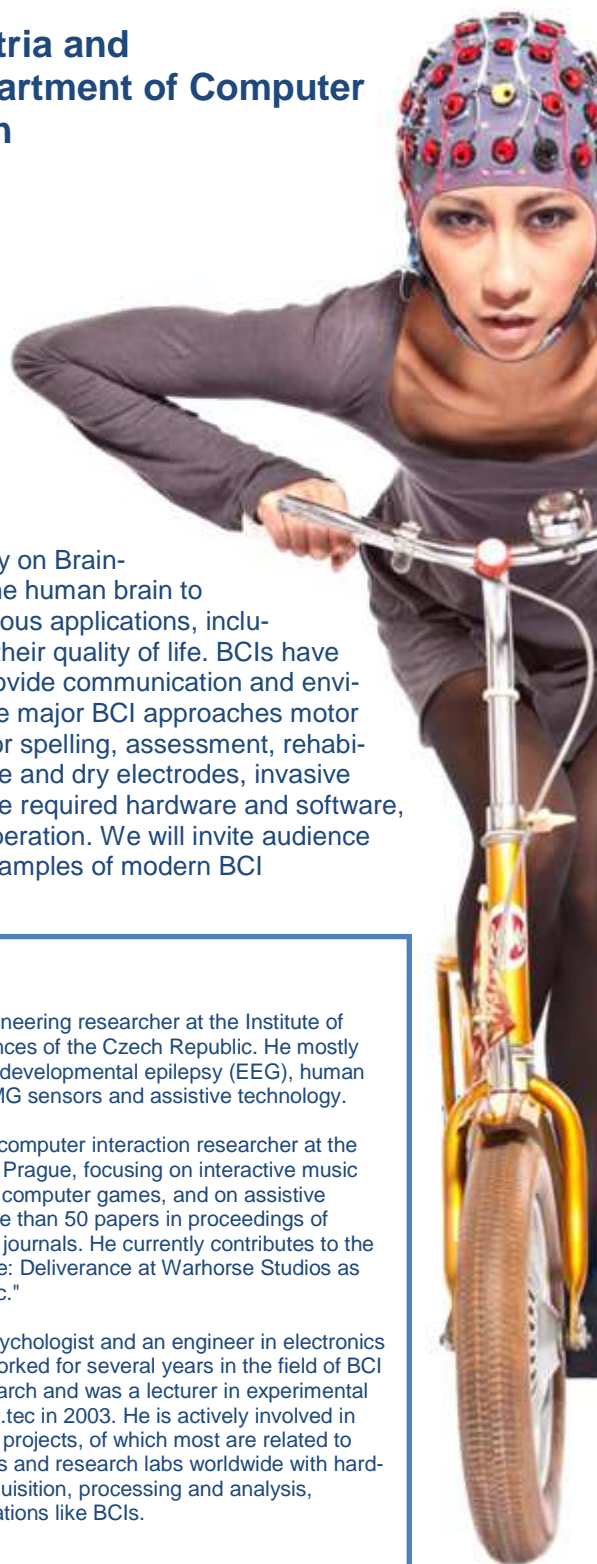
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About the Workshop

Research groups all over the world have been working enthusiastically on Brain-Computer Interfaces (BCIs), which provide a direct connection from the human brain to a computer. BCIs translate brain activity into control signals for numerous applications, including tools to help severely disabled users communicate and improve their quality of life. BCIs have been used to restore movement, assess cognitive functioning, and provide communication and environmental control. During this workshop, we will demonstrate the three major BCI approaches motor imagery, P300 and steady state visual evoked potentials (SSVEP) - for spelling, assessment, rehabilitation and robot control. We will also explain new directions like active and dry electrodes, invasive ECoG systems and advanced VR control. The audience will see all the required hardware and software, procedures for cap mounting, training and classifier setup, and BCI operation. We will invite audience members to participate in live demonstrations, providing real-world examples of modern BCI performance in field settings.



Program:

- 10:00 Introduction to major methodological approaches of BCI & introduction to hard- and software
- 11:00 **Posusta, Antonin; Sporka, Adam:** *Myoelectric Signals for Text Entry*
- 11:30 **Sieger, Tomas:** *Emotion-related neurons deep in the human brain*
- 12:00 Lunch break
- 13:00 Hands-on sessions: BCI live experiments
- 16:00 Final discussion & questions

Attendance is free of charge but registration is required due to limitation of space. Please contact Francisco Fernandes: fernandes@gttec.at
N.B.:The workshop will be held in English.

Speakers:

Antonin Posusta is a bioengineering researcher at the Institute of Physiology, Academy of Sciences of the Czech Republic. He mostly contributes to the research of developmental epilepsy (EEG), human computer interaction using EMG sensors and assistive technology.

Adam J Sporka is a human-computer interaction researcher at the Czech Technical University in Prague, focusing on interactive music and audio, including audio for computer games, and on assistive technology. He published more than 50 papers in proceedings of international conferences and journals. He currently contributes to the medieval RPG Kingdom Come: Deliverance at Warhorse Studios as the designer of adaptive music."

Gunther Krausz is a neuropsychologist and an engineer in electronics and telecommunication. He worked for several years in the field of BCI research and EEG basic research and was a lecturer in experimental psychology before he joined g.tec in 2003. He is actively involved in several international research projects, of which most are related to BCI. g.tec supplies universities and research labs worldwide with hard- and software for biosignal acquisition, processing and analysis, especially for real-time applications like BCIs.

Special thanks to Prof. Pavel Slavík, Prof. Zdeněk Míkovec and the hosts of the Workshop.



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Registration Form:

Please fill in and fax back: 0043 7251 22240 39

or email it to Francisco Fernandes: fernandes@gtec.at

Name & Degree (as to appear on conference materials):

Institution/Affiliation:

Department:

Business Address:

City: _____ State: _____ Zip: _____

Business Phone: _____

E-mail Address (important for receiving the confirmation)

