



Courses and research in cognitive science in Bratislava

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A few facts from CogSci history in Bratislava

- 1st Slovak monography related to cognitive science: Beňušková Ľ. et al.: *Quest for a Common Language in Cognitive Sciences* (in Slovak), Kalligram, 2000.
- 1st Slovak textbook Rybár J. et al. (eds.): *Kognitívne vedy* (Cognitive Sciences), Kalligram Bratislava 2002.
- Rybár et al. (eds.): *Jazyk a kognícia* (Language and Cognition), Kalligram Bratislava 2005.
- Kvasnička V. et al (eds). *Myseľ, inteligencia a život* (Mind, intelligence and life). STU in Bratislava, 2007.
- Kvasnička V. et al (eds). *Modely mysle* (Models of the mind). Európa Bratislava, 2008
- *Annual Czech-Slovak conference Cognition and Artificial Life* (since 2001)
- CogSci programme at Comenius University is up and running
- **Successful re-accreditation in 2015!**

Centre for Cognitive Science

People at the faculty (FMPI)

- [Farkaš Igor](#) (faculty) – AI and cogsci
- [Takáč Martin](#) (faculty) – AI and cogsci
- [Rybár Ján](#) (faculty) – psychology
- [Kamhal Dezider](#) (faculty) – philosophy
- [Zlatoš Pavol](#) prof. (faculty) – logic
- [Cimrová Barbora](#) (faculty) – cogsci, EEG
- [Kuzma Tomáš](#) (PhD student)
- [Gergel' Peter](#) (PhD student)

Other faculties of Comenius University

- [Cséfalvay Zsolt](#), prof., aphasia, dementia
Faculty of Education
- [Ostatníková Daniela](#), prof., hormones & cognition, Faculty of Medicine
- [Višňovský Emil](#), prof., Faculty of Philosophy

Slovak Academy of Sciences (SAS), Bratislava

- [Bašnáková Jana](#), Inst. of Experimental Psychology & Psycholinguistics, Nijmegen
- [Čavojová Vladimíra](#), Dr., Inst. of Exper. Psychology, decision making, emotions
- [Riečanský Igor](#), Dr., Inst. of Normal and Pathological Physiology, cog. neuroscience
- [Rosipal Roman](#), Dr., Inst. of Measurement Science, machine learning, cognitive neuroscience, BCI

Other universities

- [Sýkora Peter](#), prof., UCM Trnava, bioethics
- [Gáliková Silvia](#), prof., Trnava, consciousness
- [Gál Tomáš](#), PhD., altered states of mind

Slovak Society for Cognitive Science



Kontakt

Centrum pre KV

MEi:CogSci



Slovenská spoločnosť pre kognitívnu vedu

O nás

Slovenská spoločnosť pre kognitívnu vedu (SSKV) je občianskym združením, ktoré bolo začiatkom roka 2015 založené v Centre pre kognitívnu vedu na Fakulte matematiky, fyziky a informatiky Univerzity Komenského v Bratislave.

Poslanie

Základným poslaním SSKV je všestranne podporovať rozvoj kognitívnej vedy na Slovensku a zároveň vytvárať podmienky pre medzinárodnú spoluprácu s dôrazom na stredoeurópsky región.

[Stanovy SSKV](#)

Predsedníctvo

- **prof. Ing. Igor Farkaš, PhD. (predseda)**, Centrum pre kognitívnu vedu, KAI, FMFI UK, Bratislava
- doc. PhDr. Ján Rybár, PhD., Centrum pre kognitívnu vedu, KAI, FMFI UK, Bratislava
- RNDr. Martin Takáč, PhD., Centrum pre kognitívnu vedu, KAI, FMFI UK, Bratislava



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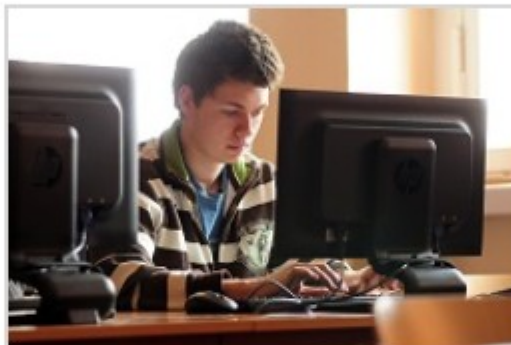
**NEWLY RE-ACCREDITED
STUDY PROGRAMMES**
AUGUST 26, 2015



**SPRING CONFERENCE ON
COMPUTER GRAPHICS**
MAY 1ST - 3RD 2013



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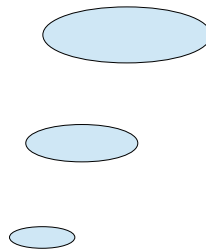
[Seminars](#)



New Trends in Cognitive Science

- Formed by two courses: (each worth 5 ECTS)
- **Grounded Cognition** (Igor Farkaš)
- **Cognitive Semantics and Cognitive Theory of Representation** (Martin Takáč)

We are looking forward to you!



Additional courses in English

- Introduction to Mathematics
- Introduction to Programming (in Matlab)
- Introduction to Computational Intelligence
- Theories of Consciousness
- Philosophy of AI
- And other courses...
- See the curriculum at

http://dai.fmph.uniba.sk/w/Master_program_in_Cognitive_Science/en

Our research in AI and CogSci

Cognition and Neural Computation group

MEi:CogSci



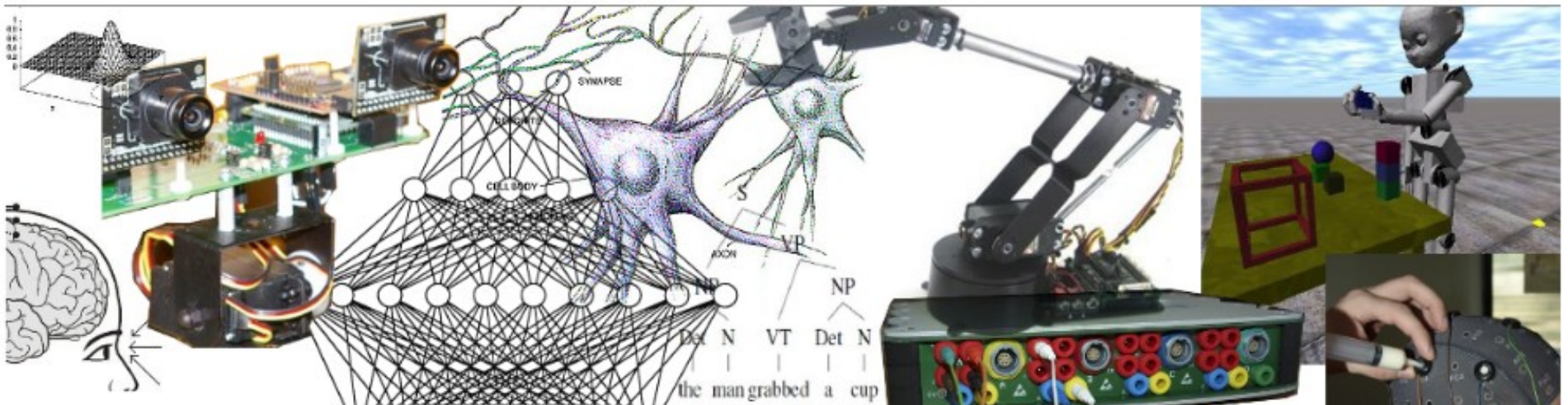
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CNC Seminar



CNC research in AI and CogSci

- Computational modeling / theoretical research
 - **Project:** From sensory-motor processes to higher cognition: Computational modeling of mental development in an embodied cognitive agent
 - Slovak Grant Agency for Science (2014-2016, Farkaš et al.)
- Experimental research (with EEG)
 - **Joint project:** Brain-computer interface with robot-assisted training for rehabilitation
 - With Slovak Academy of Sciences (R. Rosipal, PI) (2017-2017)
- Researchers - Igor Farkaš, Martin Takáč, Barbora Cimrová, Ján Rybár
- Doctoral students - Tomáš Kuzma, Peter Gergel'
- Master students - of cognitive science, and (applied) informatics

iCub simulator

- developed within EU project RobotCub
- publicly available since 2007
- licensed under GPL, it has been designed to reproduce, as accurately as possible, the physics and the dynamics of the robot and its environment
- uses Open Dynamics Engine (ODE) for simulating rigid bodies and the collision detection algorithms to compute the physical interaction with objects
- Useful for robotic experiments



Our EEG measurement system

g.USBamp – USB Biosignal Amplifier



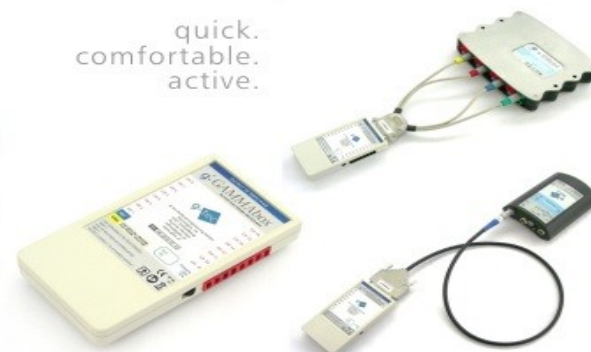
- multi-modal amplifier system
EEG, ECG, EMG, EOG, ...
respiration
other sensors
- simultaneous sample and hold
for all channels
- 16 analog inputs with 24 Bit, 38.4 kHz
per channel
- can be stacked for 32, 48, 64 channels
- fully DC coupled
- USB 2.0 interface
- FDA and CE approved



g. GAMMAsys
ACTIVE ELECTRODE SYSTEM



quick.
comfortable.
active.



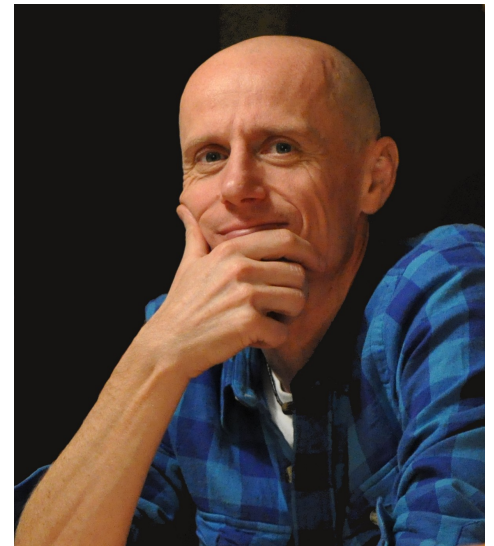
(donation of Humboldt foundation)

Computational and cognitive neuroscience

- Roman Rosipal, PhD
- Institute of Measurement Science, Slovak Academy of Sciences

Research interests:

- computational and cognitive neuroscience
- electrophysiological data analysis (EEG, EOG, EMG, ECG); event-related potentials; sleep process modelling;
- study of cognitive fatigue; brain-computer interfaces; vigilance, drowsiness and fatigue monitoring



Experimental psychology

- Dr. Vladimíra Čavojová
- Institute of Experimental Psychology, Slovak Academy of Sciences
- **Research interests:** Rationality, decision making, emotions



Philosophy and AI

- Prof. Emil Višňovský
- Faculty of Philosophy, Comenius Uni in Bratislava (CUB)
- Research interests:
 - social and moral norms,
 - philosophy of action,
 - philosophy of artificial intelligence



Philosophy of mind

- Prof. Silvia Gáliková
- Institute of Philosophy, Slovak Academy of Sciences
- **Research interests:** philosophy of science, philosophy of mind, consciousness



Cognitive Neuroscience

- MUDr. Igor Riečanský, PhD.
- Institute of Normal and Pathological Physiology
Slovak Academy of Sciences, Bratislava
- & Institute of Psychology, Uni Vienna



- **Research interests:**
 - brain mechanisms of mental processes (mind-brain problem, attention, perception),
 - cognitive neuroscience and neuropsychiatry

Education / Religion

- Ing. PhDr. Tomáš Gál, PhD
- Center for Information Technologies, Comenius University
- Research interests:
 - special education,
 - religiosity and cognition,
 - altered states of mind



Thank you for your attention



Bratislava can't wait to hear from you!