

# Zpravodaj pro kybernetiku a informatiku

**ČSKI** Česká společnost pro kybernetiku a informatiku

únor  
2013

Člen: CEPIS, ECCAI, ESSU, IAPR, IASS/AIS, IFAC, IFIP. Založena 1966.

Sekretariát: Pod vodárenskou věží 2, 182 07 Praha 8 – Libeň

tel: 2 6605 3901

fax: 2 8658 5789

e-mail: [cski@utia.cas.cz](mailto:cski@utia.cas.cz)

<http://www.cski.cz>

## Únorové kalendárium

6. P. Cintula, C. Noguera: 17 Shades of Algebraizability
13. M. Petrik: On Composing the Functions that Solve the Mulholland Inequality
20. S. Ratschan: Logic and Quantitative Systems Analysis
27. S. Žák: Nová hierarchie pro Turingovy stroje a cesta od hierarchií k branching programům

## Volná místa

### Tokyo Institute of Technology, Japan

At Tokyo Institute of Technology, we are seeking candidates for one or two positions as postdocs to conduct research in the general area of networked control systems. These positions are funded by Japan Science and Technology Agency under the CREST program on new generation power management systems. The applicants are expected to have strong backgrounds on systems and control theory and to be specialized in areas including networked control, multi-agent systems, communications, optimization, and power systems. He/she will work on fundamental research related to these areas and will also be involved in a team under this project with an emphasis on cyber security for power systems. The team is multi-disciplinary, consisting of members from several departments at Tokyo Tech and from the Central Research Institute of Electric Power Industry, Japan. The positions are available from April 2013 for two years with possibilities of further extensions.

Applicants should send a CV, a statement of research interest, and a list of two references. For further inquiries and submission of applications, please contact Dr. Hideaki Ishii ([ishii@dis.titech.ac.jp](mailto:ishii@dis.titech.ac.jp)).

### Eindhoven University of Technology

Within the Control Systems Group of the Department of Electrical Engineering, there is an open position for an assistant/associate professor in Dynamics and Control in Electrified Automotive Systems.

Candidates combine a strong interest in the electrical engineering aspects of automotive systems technology with a solid basis and expertise in model-based systems and control. Particular research subjects include (a) Monitoring, control and optimization of networked systems; (b) Vehicle energy and thermal management systems; battery management, and (c) Vehicle electrification; distributed estimation and control.

Candidates should have the capacity to develop a recognized research programme, cooperate in multidisciplinary teams within and outside the department, provide inspiring education in both BSc and MSc programmes and attract research funding.

The Control Systems group has a strong international staff and close cooperation with industrial research partners. The group covers four technology domains: industrial production processes, high-tech systems, power networks and automotive systems. The basis of systems and control research and competence in the group is in system identification, model approximation, (nonlinear) model predictive control, spatial-temporal systems and model-based control and optimization. The group provides education modules in the BSc and MSc programmes of Electrical Engineering, Automotive Systems, the MSc programme Systems and Control and the national PhD programme of the Dutch Institute of Systems and Control (DISC). Currently the group consists of about 30 people, among which 6 full-time academics.

For the application procedure, see <http://jobs.tue.nl/en/job/assistant-associate-professor-159864.html>

## Různé konference

**KEOD2013** – International Conference on Knowledge Engineering and Ontology Development, Vilamoura, Portugal, September 19 - 22, 2013. Paper submission deadline: March 12, 2013. <http://www.keod.ic3k.org/>

Vydává Česká společnost pro kybernetiku a informatiku pro potřeby svých členů. Neprodejné. Neprošlo korekturami ani jazykovou úpravou. Informace o členství v ČSKI na jejím sekretariátě. Příspěvky posílejte na adresu sekretariátu (přednostně emailem a v elektronické formě LaTeX).

Uzávěrka příštího čísla: 25. února 2013.

Texty z tohoto zpravodaje smějí být uveřejněny jinde jako celek i po částech. Prosíme ovšem o uvedení odkazu na ČSKI jako zdroj.

## Odborná skupina aplikované matematické logiky

Vás zve na semináře, které se konají vždy ve středu v zasedacím sále Ústavu informatiky AV ČR (místnost č. 318), Pod vodárenskou věží 2, 182 07 Praha 8 – Libeň, stanice metra C Ládví.

**Pozor! Začátek seminářů je posunut na 14 hodin!**

### Program:

6. února **Petr Cintula, Carles Noguera: 17 Shades of Algebraizability**  
Algebraizable logics have been deeply studied via their translation to an equivalent algebraic semantics. There are numerous strengthenings of this notion in the literature, which are often confused. The goal of this talk is to clarify these confusions by considering the overlooked condition of finiteness of the translation from logic to algebra. We obtain a hierarchy of 17 classes of algebraizable logics and show their separation examples.
13. února **Milan Petrik: On Composing the Functions that Solve the Mulholland Inequality**  
The open question whether the set of the functions that solve the Mulholland inequality is closed on composition is investigated with a negative answer. This question is related to another open question whether the dominance relation on the set of strict t-norms is transitive. Thus, a negative answer to this question is given, as well.
20. února **Stefan Ratschan: Logic and Quantitative Systems Analysis**  
One of the most important concepts in engineering is the notion of a model, that is, an abstract, and in our context formal description of a system. The classical systems models used in computer science are usually based on some form of automaton, very often with finitely many states. Reasoning about such models is usually done based on (modal, and especially temporal) logics. Nowadays, independently from several directions, computer scientists increasingly often see the necessity for formalisms that extend the classical approaches to modeling and reasoning in a quantitative way. Here, the term "quantitative" refers to the use of numerical domains such as the real numbers. In the talk I will present some such quantitative approaches to systems modeling and reasoning, concentrating on the main ideas and avoiding technical details.
27. února **Stanislav Žák: Nová hierarchie pro Turingovy stroje a cesta od hierarchií k branching programům**  
Krátce se seznámíme s jádrem konferenčního příspěvku Žák+Šíma "A Turing machine distance hierarchy" (LATA, duben 2013). Jedná se o novou míru složitosti výpočtů na Turingových strojích. Míra je půvabná (zachycuje dlouhé transfery informace na pásce Turingova stroje) a kromě toho souvislosti nalezené při prvním ohledání tématu kladou nové otázky. Poté učiníme dlouhou sérii neformálních poznámek, která zachytí historii jedné cesty od hierarchií k teorii branching programů a která se dotkne důležitých momentů jejího rozvoje až do dnešní doby (1978 - 2013). Zakończíme otázkou týkající se branching programů, která by snad mohla být výzvou pro kolegy pracující v matematické logice.