

Zpravodaj pro kybernetiku a informatiku

ČSKÍ Česká společnost pro kybernetiku a informatiku

březen
2014

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Profesor Tondl devadesátiletý

Prof. PhDr. Ing. Ladislav Tondl, Dr Sc oslaví 28. února devadesátiny. Bilancovat co vykonal v oblasti české filozofie vědy a techniky, jakož i sémiotiky, včetně zahraničních kontaktů s osobnostmi jmenovaných oblastí a též publikací, dále členstvím ve vědeckých společnostech a edičních radách, je třeba ponechat autorům sborníku na jeho počest: ten vyjde ve Filozofickém ústavu AV ČR. Sémiotická skupina ČSKÍ, k jejíž zakladatelům prof. Tondl patří, vydává jeho Rozmluvu a usuzování: tímto chce poděkovat za všechny podněty a znalosti, které jí po léta předává a popřát mu všechno dobré. K přání se přidává celá ČSKÍ, u jejíhož zrodu profesor Tondl stál.

Valná hromada ČSKÍ

V souladu se stanovami svolává předsednictvo ČSKÍ výroční valnou hromadu Společnosti na pátek 20. června 2014 v 15 hodin. Valná hromada se bude konat ve vile Lanna (V sadech 1, 16000 Praha 6).

Na programu valné hromady budou zprávy o činnosti a hospodaření ČSKÍ a diskuse o činnosti Společnosti.

V průběhu valné hromady budou slavnostně předány ceny vítězům soutěže Antonína Svobody.

Těšíme se nashledanou s co největším počtem členů.

Březnové kalendárium

4. B. Zitová: Jak to vidí počítač
5. P. Cintula, G. Metcalfe: Skolem and Herbrand theorems for substructural logics, Part II
11. T. Mrkvička: Obecné řešení problému vícenásobného testování pro Monte Carlo testy
12. P. Cintula, C. Noguera: Two-layer modal logics
19. N. Galatos, R. Cardona: The finite embeddability property for non-commutative knotted extensions of RL
25. J. Rataj: Náhodné množiny s konečným perimetrem
26. A. Přenosil: *název bude oznámen dodatečně*

Odborná skupina „Rozhodování a řízení za neurčitostí“

Vás srdečně zve na přednášku v budově ÚTIA AV ČR, Pod Vodárenskou věží 4, 182 08 Praha 8 – Libeň.

Typy a nabídky přednášek: M. Kárný (26605 2274, school@utia.cas.cz)

Informace o seminářích: <http://www.utia.cas.cz/AS/news/seminars>

RNDr. Barbara Zitová, Ph.D. ÚTIA AV ČR, v.v.i.

Jak to vidí počítač

Přednáška se koná 4. března od 14 hod. v místnosti č. 474.

Souhrn. Existuje předpoklad, že během roku 2014 bude pořízeno 880 miliard fotografií (Yahoo!). Každou minutu se nahrává na Youtube přes 100 hodin záznamu. Pro účely vědeckého zobrazování se používá široká škála modalit, produkujících dvou- i vícerozměrná data ve stále vyšším rozlišení. Uvedené trendy se odrážejí v přístupu ke zpracování obrazové informace, kdy volba konkrétního postupu je nahrazována algoritmicizací rozhodnutí, jak taková data zpracovávat na obecnější úrovni. Nedostatečnost jednotlivých řešení je často vyvážena množstvím zpracovávaných dat a použitých metod. Dostupné obrazové informace jsou využívány jako znalostní báze, která může být zpět začleněna do vývoje metod. V přednášce budou ukázány ilustrující aplikace z několika oblastí.

Odborná skupina pro stereologii

vás zve na *Seminář ze stochastické geometrie*.

Na semináři jsou referovány nové nebo aktuální výsledky z oboru stochastické geometrie, integrální geometrie, geometrické pravděpodobnosti, geometrické statistiky a stereologie.

Seminář se koná v úterý od 15:40 do 17:10 v seminární místnosti Katedry pravděpodobnosti a matematické statistiky MFF UK (Karlín, Sokolovská 83, 1. patro). Zájemci jsou srdečně zváni.

Program:

11. března Tomáš Mrkvička (JČU): Obecné řešení problému vícenásobného testování pro Monte Carlo testy
25. března Jan Rataj: Náhodné množiny s konečným perimetrem

Odborná skupina aplikované matematické logiky

Vás zve na semináře, které se konají vždy ve středu ve 14 hodin v zasedacím sále Ústavu informatiky AV ČR (místnost č. 318), Pod Vodárenskou věží 2, 182 07 Praha 8 – Libeň, stanice metra C Ládví.

Program:

5. března Petr Cintula, George Metcalfe: Skolem and Herbrand theorems for substructural logics, Part II
Herbrand and Skolemization theorems are obtained for a broad family of first-order substructural logics. These logics typically lack equivalent prenex forms, a deduction theorem, and reductions of semantic consequence to satisfiability. The Herbrand and Skolemization theorems therefore take various forms, applying either to the left or right of the consequence relation, and to restricted classes of formulas.
12. března Petr Cintula, Carles Noguera: Two-layer modal logics
The idea of two-layer modal logics is inspired by the treatment of probability inside mathematical fuzzy logic, pioneered by Hajek and recently studied by numerous authors in numerous papers of different levels of generality. Such logics are used in order to deal with a certain property of formulae of the base logic using a suitable 'upper' logic (the seminal example being the probability of classical events formalized inside Lukasiewicz logic). We provide a new general framework for two-layer modal logics that encompasses the current state. We show how one can construct such modal logic over an arbitrary non-classical logic (under certain technical requirements) with modalities interpreted by arbitrary measures. We equip the resulting logics with a semantics of measured Kripke frames and prove corresponding completeness theorems.
19. března Nick Galatos, R. Cardona: The finite embeddability property for non-commutative knotted extensions of RL

The finite embeddability property for a class of algebras states that every finite partial subalgebra of an algebra in the class can be embedded in a finite full algebra in the class. This gives a way for deciding quasiequations for finitely axiomatized varieties and thus yields the strong finite model property for substructural logics corresponding to varieties of residuated that have the FEP.

C. van Alten and W. Blok show that the FEP holds for various classes of residuated structures under either the assumption of integrality, or by the combination of commutativity and a knotted axiom. Unfortunately, the FEP for the subvariety axiomatized by a single knotted axiom fails.

We prove the FEP for knotted varieties which satisfy mild generalizations of commutativity, the most basic one being $xyx=xyx$. The

proof relies on an understanding of the underlying monoid that allows us to consider the essential monoid properties separated from the order properties. The monoid contribution is then shown to be finite, while the order contribution is controlled using the theory of well-ordered sets. The proof is set in the context of residuated frames.

26. března Adam Přenosil: název bude oznámen dodatečně

Odborná skupina pro sémiotiku

Sémiotická skupina oznamuje pokračování seminářů ve FÚ AV ČR, Jilská 1, Praha 1 a to v posledních útercích v měsíci. Nejbližší termín: 25. března v 17. 20 v zasedací síni ústavu; téma z pomezí sociologie a sémiotiky bude ohlášeno mailem.

Volná místa

Missouri University of Science and Technology, USA

Open PhD Positions, Advanced Systems Research Laboratory

We are searching for exceptional PhD students with a strong background in systems, controls, and robotics. These students are expected to perform research on (1) safety-critical autonomous systems, (2) multiagent systems and robotics, and (3) modular large-scale systems. Our intention is to give our strong guidance in order to maximize the chances of our students of building a rewarding research career. If you are interested, please send an email to Prof. Tansel Yucelen at yucelen@mst.edu including your background, your interests and strengths (theoretical and experimental), your resume, and a publication of yours. You can visit <http://www.asrl.us/> for our webpage.

The work performed by our laboratory is focused on the creation of new information, control, and decision algorithms that reveal advanced systems such as highly capable autonomous vehicles and networked multivehicle systems. These systems are envisioned to elevate human society as well as to perform safety-critical operations with more robots and less humans. We place a strong emphasis both on theoretic research and experimentation for addressing fundamental and open real-world technological problems. Our aim is to be recognized as one of the top research laboratories in the nation by significantly advancing the knowledge and training science-based engineers and professionals to shape the future of our society.

PhD Scholarship in quantum control at University of New South Wales, Australia

Project title: Robust control of quantum ensembles

Supervisors: Dr Daoyi Dong and Prof Ian Petersen
<https://research.unsw.edu.au/people/mr-daoyi-dong>
<http://seit.unsw.adfa.edu.au/staff/sites/petersen/P1.html>

Quantum ensembles have wide applications in emerging quantum technology including quantum computation, long-distance quantum communication, and magnetic resonance imaging. The thesis project aims to develop new theories and control algorithms to enhance control capabilities and robustness in the engineering of quantum ensembles. The project also involves possible collaboration with Professor Herschel Rabitz's group at Princeton University.

The successful applicant, subject to admission to the PhD degree program, will be awarded a UNSW Canberra Research Training Scholarship with an annual tax-free stipend of \$26,392 (2014 rate). This scholarship is for a period of 3 years, subject to satisfactory progress reviews. The successful applicant would be expected to be available to commence their studies no later than Session 2, 2014 and must be on campus and enrolled at UNSW Canberra in the relevant PhD program by 31 August 2014. Potential students with strong background of quantum physics or control theory are encouraged to apply for this scholarship. Prospective students should contact Daoyi Dong (daoyidong@gmail.com) with their academic transcript, a CV and English test scores (if necessary). Applications will be accepted until a suitable candidate is found.

UNSW Australia (the University of New South Wales) is one of Australia's leading research and teaching universities and a founding member of the prestigious Group of Eight (Go8) research-intensive universities in Australia and a member of the Universities 21 international consortium. UNSW Australia is an Australian university with a global vision to bring our students a truly world-class learning experience; we regularly collaborate with pioneering universities around the world. The Canberra campus of UNSW Australia is located at the Australian Defence Force Academy (ADFA).

For further information, please contact
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School of Engineering and Information Technology
UNSW Australia, Canberra ACT 2600 Australia

Delft University of Technology, The Netherlands

The Delft Center for Systems and Control (www.dcsc.tudelft.nl) at the Delft University of Technology, The Netherlands has three vacancies for PhD positions on: 1. Distributed model predictive control of stochastic systems 2. Distributed optimization for multi-agent systems 3. Robust model predictive control of fuel cell cars in smart energy systems For these positions we are looking for candidates with an MSc degree in systems and control or applied mathematics, and with a strong background or interest in control, optimization, and smart energy systems. The candidates are expected to work on the boundary of several research domains. A good command of the English language is required. We offer the opportunity to do scientifically challenging research in a multi-disciplinary research group. The appointments will be for up to 4 years. As an employee of the university, successful applicants will receive a competitive salary, as well as excellent secondary benefits. More information on these positions and on how to apply can be found at <http://www.dcsc.tudelft.nl/vacancies.html> or by contacting Tamas Keviczky (t.keviczky@tudelft.nl) for the first two positions or Bart De Schutter (b.deschutter@tudelft.nl) for the third position.

Università degli Studi del Sannio, Italy

Post Doc Positions available at the Department of Engineering Università degli Studi del Sannio, Benevento, Italy Referents: Prof. Luigi Glielmo (email glielmo@unisannio.it), Prof. Francesco Vasca (email vasca@unisannio.it), Dr. Carmen Del Vecchio (email c.delvecchio@unisannio.it), Dr. Luigi Iannelli (email luigi.iannelli@unisannio.it) The Automatic Control Group of the Università degli Studi del Sannio offers post doc scholarships dealing with the following research areas: 1. Optimization and control methods of energy networks (c.delvecchio@unisannio.it); 2. Non linear analysis and stability of epidemiological models (c.delvecchio@unisannio.it); 3. Advanced techniques for modelling and control of power converters (luigi.iannelli@unisannio.it or vasca@unisannio.it) 4. Modeling and control of automotive transmissions (vasca@unisannio.it or luigi.iannelli@unisannio.it) Problems to be investigated in the above research topics are related to Industrial or Applied Research projects, and the achieved results are expected to have a practical applicability. Our ideal candidate has a sound knowledge of control and optimization methods and an interest in both theoretical research and applications to practical problems are desired. Research experience is expected in at least one of the following areas: model predictive control, dynamic optimization, stochastic optimization, control systems design based on optimization methods. Candidates with a Ph.D. in Engineering, Mathematics or Physics with a focus on control or optimization are preferable, and they should have a good record of high-impact international publications. The salary and the scholarship extension will be determined according to candidate profile and curriculum. Interested candidates may send detailed CV, a list of publications and two reference letters (or two contacts to whom we can ask references) to the email address reported in correspondence of each research topic. The selected candidate will join a friendly team of 8 PhD students, 4 post Docs and 5 Professors with several expertise in identification, control and optimization of dynamical systems. The attracting but not distracting environment of the town of Benevento is an additional plus.

Různé konference

WORLDCOMP'14 - The 2014 World Congress in Computer Science, Computer Engineering, and Applied Computing, Monte Carlo Resort, Las Vegas, USA, July 21-24, 2014. Paper submission deadline: March 15, 2014
<http://www.world-academy-of-science.org/>

DICTAP2014 - The Fourth International Conference on Digital Information and Communication Technology and its Applications, University of the Thai Chamber of Commerce, Bangkok, Thailand, May 6-8, 2014. Paper submission deadline: April 6, 2014. <http://sdiwc.net/conferences/2014/dictap2014/>

SIMULTECH 2014 - 4th International Conference on Simulation and Modeling Methodologies, Technologies and Applications, Vienna, Austria, August 28 - 30, 2014. Paper submission deadline: April 10, 2014.
<http://www.simultech.org/>

ICIUS 2014 - The 2014 International Conference on Intelligent Unmanned Systems, Montreal, Quebec, Canada, September 29 - October 1, 2014. Paper submission deadline: April 8, 2014. <http://www.icius2014.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: 26. března 2014.
Texty z tohoto zpravodaje smějí být uveřejněny jinde jako celek i po částech. Prosíme ovšem o uvedení odkazu na ČSKI jako zdroj.