

# Zpravodaj pro kybernetiku a informatiku

**ČSKÍ** Česká společnost pro kybernetiku a informatiku

říjen  
2006

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## Říjnové kalendárium

3. M. Šmíd: Portfolio selection problems
4. P. Hájek: Fuzzy logika a přirozená čísla
4. H. Ševčíková: Bayesian Melding in Urban Simulations
5. Pattern Recognition and Computer Vision Colloquium
6. D. Chetverikov: Fusing Spatial, Pictorial and Photometric Data to Build Photorealistic Models
9. K. Mls: Fuzzy kognitivní mapy a na člověka orientovaná reprezentace znalostí
11. P. Pták: Extending weakly additive measures
17. A. Heřmánek: Efficient FPGA Desing: Implementation of Finite Interval Constant Modulus Algorithm
18. I. Kramosil: Aditivní posibilitické míry

### Odborná skupina aplikované matematické logiky

Vás zve na semináře, které se konají vždy ve středu v 9:00 hod. v zasedacím sále Ústavu informatiky AV ČR (místnost č. 318), Pod vodárenskou věží 2, 182 07 Praha 8 – Libeň, stanice metra C Ládví.

#### Program:

4. října Petr Hájek: Fuzzy logika a přirozená čísla
11. října Pavel Pták: Extending weakly additive measures
18. října Ivan Kramosil: Aditivní posibilitické míry

### Výzkumné centrum Data - Algoritmy - Rozhodování Odborná skupina „Rozhodování a řízení za neurčitostí“

<http://as.utia.cz/dcu/DCU.php>

Vás srdečně zvou na pravidelné úterní přednášky v místnosti č. 474 v budově ÚTIA AV ČR, Pod vodárenskou věží 4, 182 08 Praha 8 – Libeň.  
Tipy a nabídky přednášek: M. Kárný (26605 2274, school@utia.cas.cz)

#### Martin Šmíd

(Dept. of Econometrics  
Institute of Information Theory and Automation, AS CR  
Pod vodárenskou věží 4, 182 08 Prague 8)

#### Portfolio selection problems

Přednáška se koná 3. října 2006 od 14:00 hod.

*Souhrn.* At the seminar, the single-stage portfolio selection problem will be formulated. We will discuss the implications given that all the investors decide according to its solution. Further, we will present multi-stage and continuous-time generalizations of the problem. Finally, we will briefly mention several recent attempts trying to deal with drawbacks of the standard portfolio choice theory.

#### Antonín Heřmánek

(Dept. of Signal Processing  
Institute of Information Theory and Automation, AS CR  
Pod vodárenskou věží 4, 182 08 Prague 8)

#### Efficient FPGA Desing:

#### Implementation of Finite Interval Constant Modulus Algorithm

Přednáška se koná 17. října 2006 od 14:00 hod.

*Souhrn.* We present the optimization of iterative algorithms with matrix operations or nested loops for hardware implementation in Field Programmable Gate Arrays (FPGA), using Integer Linear Programming(ILP).The method is

demonstrated on an implementation of the Finite Interval Constant Modulus Algorithm. It is an equalization algorithm, suitable for modern communication systems (4G and behind). For the floating-point calculations required in the algorithm, logarithmic number system arithmetic libraries was used in the FPGA implementation.

### Odborná skupina pro rozpoznávání - CPRS Výzkumné centrum Data - Algoritmy - Rozhodování Oddělení rozpoznávání ÚTIA AV ČR

Vás srdečně zvou na přednášky

#### Hana Ševčíková

(University of Washington and UTIA Department of Pattern Recognition)

#### Bayesian Melding in Urban Simulations

Přednáška se koná 4. října 2006 od 14:00 hod., v ÚTIA AV ČR,  
Pod vodárenskou věží 4, 182 08 Praha 8 – Libeň, místnost č. 474 (4. patro)

*Souhrn.* At CUSPA (Center for Urban Simulation and Policy Analysis), University of Washington, we have developed a sophisticated open source simulation software, called UrbanSim, that simulates evolution in land use over a (possibly long) period of time. It has been used in several regional agencies throughout the USA, as well as in several European countries. It is implemented as a system of models simulating behavior of different types of agents, such as households and jobs, in one year increments. The system is a part of the Opus project (Open Platform for Urban Simulation) which has been developed as a collaborative platform for researchers, modelers, developers and users involved in land use, transportation and environmental planning in urbanizing regions throughout the world.

Although the nature of the simulation system, including model structure, input parameters and data, is subject to uncertainty, UrbanSim - as many other simulation systems - essentially provides point predictions. Thus, it does not provide policy makers with information about the confidence of the predictions. As a result, uncertainty may be underestimated, and decisions may be made that are riskier than the policy-maker thinks they are.

In this talk, I will describe UrbanSim including its model components. I will introduce a method for assessing uncertainty about quantities of interest using urban simulation models, called Bayesian melding. In a case study I will compare results from our method with a method of a simple repetition of simulation runs. It will be shown that the simple repeated runs method gives distributions of quantities of interest that are too narrow, while Bayesian melding gives well calibrated uncertainty statements.

This is joint work with Adrian Raftery (University of Washington, currently at UTIA Department of Adaptive Systems) and Paul Waddell (University of Washington).

#### Prof. Dmitry Chetverikov

(Computer and Automation Institute, Budapest)

#### Fusing Spatial, Pictorial and Photometric Data to Build Photorealistic Models

Přednáška se koná 6. října 2006 od 11:00 hod., v ÚTIA AV ČR,  
Pod vodárenskou věží 4, 182 08 Praha 8 – Libeň, místnost č. 3 (přízemí)

*Souhrn.* The Geometric Modelling and Computer Vision lab of MTA SZTAKI, Budapest, is working on several projects related to the automatic fusion and high-level interpretation of 3D sensor data for building models of real-world objects and scenes. Our major goal is to create rich and geometrically correct, scalable photorealistic 3D models based on multimodal data obtained using a laser scanner, a camera and illumination sources. In this talk, we present a sophisticated software system that processes and fuses geometric, pictorial and photometric data using genetic algorithms and efficient methods of computer vision.

## Gerstnerova laboratoř a Odborná skupina pro umělou inteligenci

zvou všechny zájemce na semináře, které se konají vždy v pondělí od 11:00 hod. ve Vyčichlově knihovně: ČVUT - Fakulta elektrotechnická, Katedra kybernetiky, budova E, 1. patro, místnost č. 112, Karlovo náměstí 13, Praha 2

### Program:

**9. říjen 2006 Karel Mls: Fuzzy kognitivní mapy a na člověka orientovaná reprezentace znalostí**

Cílem přednášky je představit teoretické základy fuzzy kognitivních map (FCM), jejich východiska, formální modely a hlavní oblasti využití. V další části se zaměříme na aplikační možnosti FCM jako univerzálního nástroje pro zaznamenávání a zpracování expertních znalostí. Konkrétní výsledky budou demonstrovány na příkladu využití FCM pro podporu diagnostikování v psychiatrické praxi.

## Odborná skupina pro rozpoznávání - CPRS Centrum strojového vnímání (CMP) katedry kybernetiky ČVUT FEL

pořádají ve čtvrtek 5. října od 9 hodin

### Autumn 2006 Pattern Recognition and Computer Vision Colloquium

Kolokvium se koná v místnosti č. 205, FEL ČVUT, Karlovo nám. 13, Praha 2, budova G.

Další informace viz <http://cmp.felk.cvut.cz/cmp/events/colloquium-06.10.05/>.

## Odborná skupina pro sémiotiku a katedra filozofie FF ZČU

pořádají dne 22. listopadu 2006 symposium

### Komunikace a význam

k výročí J. S. Milla.

Zamýšlené příspěvky ohlašujte na adresu: [semiotik@kfi.zcu.cz](mailto:semiotik@kfi.zcu.cz).

## Různé konference

**DCCA2007** – The 1st International Conference on Digital Communications and Computer Applications, March 19-22, 2007, Jordan University of Science and Technology, Irbid, Jordan. Submissions deadline: November 1, 2006. <http://www.cis.just.edu.jo/dcca2007>

**Telehealth 2007**, May 30 - June 1, 2007, Montreal, Quebec, Canada. Submissions deadline: January 15, 2007. <http://www.iasted.org/newsletter/2007/telehealth1.htm>

**UM2007** – 11th International Conference on User Modeling, June 15-29, 2007, Corfu, Greece. Submission deadline for posters and papers: November 1, 2006. <http://www.iit.demokritos.gr/um2007>

**MCU'2006** – Machines, Computations and Universality, September 10-15, 2007, Orleans, France. Submissions deadline: March 4, 2007. <http://www.univ-orleans.fr/lifo/Manifestations/MCU07/>

**SEC 2007** – 22nd IFIP TC-11 International Information Security Conference, May 14-17, 2007, Sandton, South Africa. Submissions deadline: November 1, 2006. <http://www.ifip.org/Cfp/Cfp-SEC%202007.htm>

**WWW2007** – 16th International World Wide Web Conference, May 8-12, 2007, Banf, Alberta, Canada. Submissions deadline: November 20, 2006. <http://www2007.org/index.php>

**NGI 2007** – 3rd EURO-NGI Conference on Next Generation Internet Networks, May 21-23, 2007, Trondheim, Norway. Paper Submission Deadline: December 31, 2006. <http://www.q2s.ntnu.no/eurongi2007/index.php>

**TASE 2007** – 1st IEEE IFIP International Symposium on Theoretical Aspects of Software Engineering, June 6-8, 2007, Shanghai, China. Submissions Deadline: January 5, 2007. <http://www.sei.ecnu.edu.cn/TASE2007/>

**MSC2007** – IEEE Multi-conference on Systems and Control, October 1-3, 2007, Suntec City Convention Centre, Singapore, brings together two international conferences: 16th IEEE Conference on Control Applications (CCA) and the 22nd IEEE International Symposium on Intelligent Control (ISIC). Submissions Deadline: November 15, 2006. <http://msc2007.nus.edu.sg/>

**CT07** – SIAM Conference on Control and its Applications, June 29 - July 1, 2007, Hyatt Regency San Francisco Airport, San Francisco, California, USA. Submissions Deadline: November 28, 2006. <http://www.siam.org/meetings/ct07/>

**CAB 2007** – 10th Symposium on Computer Applications on Biotechnology,

June 4-6, 2007, Cancun, Mexico. Draft papers submission deadline: October 27, 2006. <http://www.cab2007.org>

**IEMDC 2007** – IEEE International Electric Machines and Drives Conference, May 3-5, 2007, Antalya, Turkey. Submissions Deadline: October 30, 2006. <http://www.iemdc07.org>

**STOC 2007** – The 39th ACM Symposium on Theory of Computing, June 11-13, 2007, San Diego, California, USA. Submissions Deadline: November 20, 2006. <http://research.microsoft.com/research/theory/feige/homepagefiles/stoc07.htm>

**AIME 07** – 11th Conference on Artificial Intelligence in Medicine, July 7-11, 2007, Amsterdam, The Netherlands. Abstract Submission Deadline: January 23, 2007 Paper Submission Deadline: January 31, 2007. <http://www.aimeurope.eu/aime07>

## Volná místa

### University of Melbourne AU

A number of post-doc positions and one PhD scholarship are now available in the areas of Sensor Networks and Biomedical Engineering respectively.

The Research Fellows and PhD candidate will work under the direction of A/Professor M. Palaniswami, convener of ARC Research Network on Intelligent Sensors, Sensor Networks and Information processing (ISSNIP) at the Electrical and Electronic Engineering Department. The incumbents are expected to undertake research in collaboration with other staff and students in the Department and in collaboration with staff and students from research network participants.

The Sensor Network post-docs will be expected to develop and implement new learning and security algorithms for application in sensor networks. The candidate should have a sound knowledge of implementation issues in Sensor Networks. Together with a PhD degree in a relevant discipline (e.g. Electrical Engineering, Computer Science, Mathematics, or relevant inter-disciplinary topic), the candidate should have strong analytical skills, good communication skills and experience in the application of designed algorithms on sensor hardware.

The Biomedical Engineering post-doc and PhD candidate, respectively, will conduct research in the areas of biomedical signal processing and machine learning. The successful applicants will be expected to develop new signal processing algorithms for the diagnosis of sleep apnoea. Together with a PhD degree (for post-doc) in a relevant discipline (e.g. Electrical Engineering, Computer Science, Mathematics), the applicants will have strong analytical skills, good communication skills and experience in biomedical signal processing.

For further details regarding this position and the application process, see: <http://www.sensornetworks.net.au>

For enquiries contact: Palaniswami. Email: [swami@ee.unimelb.edu.au](mailto:swami@ee.unimelb.edu.au)

### University of Waterloo Canada

The Department of Electrical and Computer Engineering at the University of Waterloo is expanding and currently has more than a dozen openings including one specifically in the "control and mechatronics" area. For more information and a link to the online application page, please visit <http://ece.uwaterloo.ca/Home/positions/ECEpositions.htm>

### Wright State University USA

The Department of Electrical Engineering at Wright State University, Dayton, Ohio invites applications for tenure-track faculty positions at all levels. Exceptional candidates are being sought in all areas in electrical engineering, wireless engineering, RFIC design, VLSI, nanotechnologies, intelligent sensors, sensor signal exploitation, and intelligent control. Applicants must anticipate an earned Ph.D. in electrical or computer engineering or closely related discipline by the start date. Applicants for assistant professor are expected to show propensity for scholarship, generating research programs, and teaching. Consideration for higher ranks requires significant additional experience and demonstrated proficiency in scholarship, sponsored research, and teaching commensurate with the levels of performance described in the department bylaws. Departmental information, including a link to the bylaws, is available at [www.engineering.wright.edu/ee](http://www.engineering.wright.edu/ee). Submit application with a brief statement of research and teaching interests; a complete vita; names and contact information of 3 references; and supporting information to Chair, Faculty Search Committee (Ad Code), Dept. of Electrical Engineering, WSU, Dayton, OH 45435. Review of applications will begin 10/27/2006. WSU is an AA/EO Employer.

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: 24. října.

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