

# Zpravodaj pro kybernetiku a informatiku

**ČSKÍ** Česká společnost pro kybernetiku a informatiku

Číslo  
5/2000

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

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

Tel: 02-6605-3901

Fax: 02-858-5789

Email: cski@utia.cas.cz

<http://www.cski.cz>

## Červnové kalendárium

5. M. Wurst, M. Pavlík: **Machine Learning in Multi-agent systems**
6. M. Tichý, B. Kovář: **Implementation of Fast and Reliable Algorithms in ProDaCTool Project**
13. P. Materna: **Smysl, denotát a reference**
20. T. Brandejský: **Alternativní metody vytváření fuzzy modelů**
26. M. Kulich: **Použití neuronových sítí pro stavbu mapy v inteligentní robotice**

## Odborná skupina pro sémiotiku

pořádá přednášku

Prof. P. Materna

**Smysl, denotát a reference**

v úterý 13. června 2000 od 16:00 hod. Přednáška se koná ve Filosofickém ústavu AV ČR, Jilská 1, Praha 1.

## Rozhodování a řízení za neurčitosti

Program pracovního semináře pořádaného ÚTIA AVČR spolu s odbornou skupinou pro rozhodování a řízení za neurčitosti ČSKÍ:

Milan Tichý, Bohumil Kovář

(ÚTIA <tichy@utia.cas.cz>, <kovar@utia.cas.cz>)

### Implementation of Fast and Reliable Algorithms in ProDaCTool Project

Přednáška se koná 6. 6. 2000 od 14:00 hod., v ÚTIA AVČR, Pod vodárenskou věží 4, 182 08 Praha 8 – Libeň, místnost č. 208.

*Souhrn.* ProDaCTool is the acronym for Decision Support Tool for Complex Industrial Processes Based on Probabilistic Data Clustering. Use of parallelism (both at rough and fine granularity) for factorized algorithms will be the principal approach to accelerate significantly the processing and learning phases of the system. It is supposed that the PVM (Parallel Virtual Machine) will be used for parallel implementation, at least in the first phase of work (rough granularity parallel implementation).

The lecture will be focused on software aspect of the project realization.

Tomáš Brandejský

(FD ČVUT <brandejsky@fd.cvut.cz>)

### Alternativní metody vytváření fuzzy modelů

Přednáška se koná 20. 6. 2000 od 14:00 hod., v ÚTIA AVČR, Pod vodárenskou věží 4, 182 08 Praha 8 – Libeň, místnost č. 208.

*Souhrn.* Vedle obecně známých Mamdaniho a Sugenovských modelů existují i další druhy modelů, které slibují možnost slučovat naměřená a expertní data či kombinovat znalosti ve formě fuzzy pravidel se znalostmi v podobě algebraických vztahů. Tato přednáška se bude konkrétně zabývat metodami EQM (expertní kvalitativní modely), PP a AOFULV („per partes“ metody neboli metody algebraických operací s fuzzy jazykovými proměnnými). Na závěr budou stručně zmíněny možnosti rozšíření fuzzy logiky ve smyslu zachycení další neurčitosti — ignorance. Bude též diskutován smysl takového rozšíření pro modelování systémů.

Semináře se konají pravidelně 1. a 3. úterý (případně i další) v měsíci ve 14:00 v místnosti č. 208 v ÚTIA AVČR.

Snahou organizátorů je dosáhnout výměny informací a základních myšlenek mezi podobory kybernetiky a informatiky zaměřenými na rozhodování, rozpoznávání a řízení za neurčitosti. Přednášky by proto neměly vyžadovat detailní specializované znalosti probírané oblasti. *Informace, tipy a nabídky přednášek:*

L. Jirsa (02/6605 2302, jirsa@utia.cas.cz), M. Kárný (02/6605 2274, school@utia.cas.cz) [rozhodování a adaptivita]

J. Ježek (02/6605 2387, jezek@utia.cas.cz) [řízení a systémy]

P. Tichavský (02/6605 2292, tichavsk@utia.cas.cz) [stochastická informatika]

## Gerstnerova laboratoř a Komise pro ECCAI

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:

### 5. června 2000 M. Wurst, M. Pavlík (GL FEL ČVUT):

#### Machine Learning in Multi-agent systems

Within the seminar we will review possibilities of applying Machine Learning to performance improvement of multi-agent systems. Special attention will be given to methods which seem suitable for ProPlanT, a Multi-Agent System developed at the Gerstner Laboratory. Experiments show, that sometimes it is very difficult to predict behavior of a Multi-Agent System in advance. Applying Machine Learning and Data Mining methods helps to identify some repeating patterns of the community behaviour, communication bottlenecks or unreliable agents. This type of knowledge is to be used for optimization of the system during run-time. For verification of the suggested ML and KDD methods there was designed an original generator of tasks for ProPlanT, which will be described in detail.

### 26. června 2000 M. Kulich (GL FEL ČVUT):

#### Použití neuronových sítí pro stavbu mapy v inteligentní robotice

Přednáška prezentuje možnosti využití neuronových sítí ve zpracování (segmentaci) senzoričkových dat v robotice. Řešená úloha se zabývá robustními postupy vhodnými k nalézání hranic objektů v 2D datech, která byla pořízena hloubkoměrnými senzory. Cílem úlohy je dosáhnout polygonální aproximace obecné křivočáry. Výsledky dosažené při praktických experimentech budou porovnány s výsledky získanými klasickými segmentačními technikami.

## Volná místa

### Postdoctoral position biomedical signal-processing and neuroimaging

The Computational Neuroscience Group of the Laboratory of Neuro- and Psychophysiology, Medical School of the Catholic University of Leuven, Belgium (<http://simone.neuro.kuleuven.ac.be>), invites applications for a post-doctoral position in the area of biomedical signal-processing and neuroimaging (functional Magnetic Resonance Imaging).

Desired profile: The highly qualified applicant should possess a Ph.D. degree in the field of signal-processing, image-processing, statistics, or neural networks. He/she should be familiar with Principal Components Analysis (PCA), Independent Components Analysis (ICA), projection pursuit, or related techniques, and have a profound knowledge of both uni-variate statistics, such as t-tests, F-tests, and multi-variate statistics, such as ANOVA, ANCOVA, and MANCOVA. Programming skills are an asset (C, Matlab, ...), as is a familiarity with UNIX and PC platforms.

We offer:

1) A challenging research environment. The applicant will have access to data from state-of-the-art Magnetic Resonance scanners and advanced statistical tools

such as SPM (Statistical Parameter Mapping) for examining brain activity in both human and monkey.

2) An attractive income. The applicant will receive 2150 USD or 2375 Euro per month, including a full social security coverage and housing. This is comparable to the salary of an associate Professor at the University. Housing will be taken care of by the host institute.

3) Free return airline ticket, economy class (maximum 1350 USD or 1500 Euro) and a reimbursement of all costs incurred for shipping luggage to Belgium (maximum 900 USD or 1000 Euro).

Send your CV (including the names and contact information of three references), bibliography and how to contact you by mail/fax/email/phone to: Prof. Dr. Marc M. Van Hulle, K.U.Leuven, Laboratorium voor Neuro- en Psychofysiologie, Faculteit Geneeskunde, Campus Gasthuisberg, Herestraat 49, B-3000 Leuven, Belgium, Phone: + 32 16 345961, Fax: + 32 16 345993, E-mail: marc@neuro.kuleuven.ac.be, URL: <http://simone.neuro.kuleuven.ac.be>

**Umeå University in Sweden** offers frontline research in several scientific fields spanning from humanities and social sciences over science and technology to medicine. The University has about 3800 employees and 24000 students. The Faculty of Science and Technology has about 800 employees and about 5000 students. The faculty holds all of the classical subjects in science and big efforts are spent in building up the technological area. Umeå Institute of Technology is part of the Faculty of Science and Technology.

The Faculty of Science and Technology and the Institute of Technology invites applicants for two or more faculty positions at the level of Assistant Professor Computing Science and Applied Mathematics

- one position as Assistant Professor directed to women, dnr 3152-989-00

- one or more positions as Assistant Professor, dnr 3152-986-00

Computing science and applied mathematics are strategic areas within the faculty and Umeå Institute of Technology. Umeå Institute of Technology has given priority to the following subject areas (examples): data communication and distributed systems; virtual reality and scientific visualization; software, interaction and cognition; parallel and scientific computing; signal processing/time series analysis; bioinformatics; computer intensive statistical methods.

Applicants should submit a curriculum vitae, copies of degree certificates, a statement of previous research achievements and teaching merits, a list of publications and reprints numbered according to the list, a short research plan maximum 4 pages and a list of referees, all in four copies.

In order to qualify for the position you should have a doctoral degree or equivalent, which preferably is not more than 5 years old. The position is for two years, normally with a two years prolongation.

Applications are to be sent to the Registrar, Umeå University, SE-901 87 Umeå, Sweden, quoting Ref. no. 3152-986-98 or 3152-989-00. Closing date for the applications is June 22, 2000.

Further details are given by Faculty director of studies Anders Lundin, Umeå Institute of Technology, Tel +46-90 786 9934, E-mail: anders.lundin@tfe.umu.se and Faculty Officer Erik Sundbom, Faculty of Science and Technology, Dean's Office, Tel +46-90-786 5513, E-mail: erik.sundbom@adm.umu.se.

#### **Postdoctoral researcher at department of computer science, University of York**

James Cussens has recently been awarded an EPSRC-funded 1-year research grant starting 1st Oct 2000 to investigate methods for inducing stochastic logic programs. A postdoctoral post is therefore available within the Artificial Intelligence group.

This post requires a post-doctoral researcher with a background in statistical analysis of complex models. Ideally this would be combined with experience of logic programming. The post would suit someone interested in extending existing probabilistic models such as Bayes nets and probabilistic context-free grammars. Knowledge of statistical computational linguistics would be an advantage as would some familiarity with inductive logic programming.

The appointment is for a period of one year starting 1st October 2000. Funds on the grant allow us to appoint at the maximum point on the Grade IA scale (24,479 GBP per annum).

It is expected that James will be working with David Page (Departments of Computer Science and Biostatistics and Medical Informatics) at the University of Wisconsin for the latter half of the project. The researcher appointed on this project should be able to join James on this visit should they wish to do so.

Informal enquiries may be made to: James Cussens (jc@cs.york.ac.uk, Tel: +44 1904 434732).

MORE INFORMATION ABOUT THE PROJECT CAN BE FOUND AT <http://www.cs.york.ac.uk/jc/research/slps/>

CLOSING DATE FOR APPLICATIONS WILL BE 12 JULY 2000. Interviews are expected to be on 3rd August.

Formal applications can be made by sending THREE copies of a letter of application and a full curriculum vitae, together with the names and addresses of three referees, to the Personnel Office, University of York, Heslington, York YO10 5DD, UK. Please quote reference number 6035. Email applications will NOT be accepted.

## **Kalendář konferencí ICSC/NAISO**

### **NAISO Congress on INFORMATION SCIENCE INNOVATIONS (ISI'2001)**

American University in Dubai, U.A.E. - March 17-21, 2001

<http://www.icsc.ab.ca/isi2001.htm>

ISI'2001 consists of:

- Symposium on CLINICAL TRIALS (CT'2001)  
<http://www.icsc.ab.ca/161-info.htm>
- Symposium on E-BUSINESS AND BEYOND (EBB'2001)  
<http://www.icsc.ab.ca/162-info.htm>
- Symposium on INTELLIGENT AUTOMATED MANUFACTURING (IAM'2001)  
<http://www.icsc.ab.ca/163-info.htm>
- Symposium on ENGINEERING OF NATURAL AND INTELLIGENT SYSTEMS (ENAI'2001)  
<http://www.icsc.ab.ca/164-info.htm>
- Symposium on INTELLIGENT QUALITY MANAGEMENT AND METROLOGY (IQQM'2001)  
<http://www.icsc.ab.ca/165-info.htm>
- Workshop on INFORMATION SYSTEMS FOR MASS CUSTOMIZATION (ISMC'2001)  
<http://www-wi.cs.uni-magdeburg.de/mc/ismc2001/>
- Workshop on AUTONOMOUS ARTIFICIAL SYSTEMS EXPLORING HOSTILE ENVIRONMENTS (AASEHE'2001)  
<http://www.gmd.gr.jp/JRL/events.html>
- Workshop on DOCUMENT IMAGE ANALYSIS AND UNDERSTANDING (DIAU'2001)  
<http://www.icsc.ab.ca/160-work.htm>
- ROBOT SOCCER CHAMPIONSHIP (FIRA-ISI'2001)  
<http://www.icsc.ab.ca/160-fira.htm>

### **ICSC Congress on COMPUTATIONAL INTELLIGENCE-METHODS AND APPLICATIONS (CIMA'2001)**

University of Bangor, Wales, U.K. -

June 19-22, 2001

<http://www.icsc.ab.ca/cima2001.htm>

CIMA'2001 consists of:

- Symposium on FUZZY LOGIC AND APPLICATIONS (FLA'2001)  
<http://www.icsc.ab.ca/171-info.htm>
- Symposium on ADVANCES IN INTELLIGENT DATA ANALYSIS (AIDA'2001)  
<http://www.icsc.ab.ca/172-info.htm>
- Symposium on ADVANCED COMPUTING IN BIO MEDICINE (ACBM'2001)  
<http://www.icsc.ab.ca/173-info.htm>
- Symposium on ADVANCED COMPUTING IN THE FINANCIAL MARKET (ACFM'2001)  
<http://www.icsc.ab.ca/175-info.htm>
- Workshop on GRANULAR COMPUTING (GrC'2001)  
<http://www.icsc.ab.ca/175-info.htm>

### **ICSC Congress on SOFT COMPUTING (SOCO'2001) and INTELLIGENT SYSTEMS FOR INDUSTRY (ISFI'2001)**

University of Paisley, Scotland, U.K. -

June 26-29, 2001

<http://www.icsc.ab.ca/soco2001.htm>

### **Third WORLD MANUFACTURING CONGRESS (WMC'2001)**

Rochester Institute of Technology, N.Y., USA - September 24-27, 2001

WMC'2001 consists of:

- Symposium on MANUFACTURING SYSTEMS (ISMS'2001)  
<http://www.icsc.ab.ca/191-info.htm>
- Symposium on MANUFACTURING TECHNOLOGY (ISMT'2001)  
<http://www.icsc.ab.ca/192-info.htm>
- Symposium on MANUFACTURING MANAGEMENT (ISMM'2001)  
<http://www.icsc.ab.ca/193-info.htm>

For information on further events, publications, further details and updated events please follow the above links or visit our homepage at:

<http://www.icsc.ab.ca>

---

Vydává Česká společnost pro kybernetiku a informatiku pro potřeby svých členů. Neprodejně. 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 nebo v kódu Kamenických). Uzávěrka příštího čísla: 22. září 2000.

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