# NEWSLETTER

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# Adaptive Game AI

# 100 SIKS Theses

# BaMaS: Bachelor Master Connections Site

*News from the Belgium-Netherlands Association for Artificial Intelligence*

## Games All Around

*Editor-in-chief*

This issue witnesses an important shift in the domain of computer-games research, namely from traditional board games to commercial games. Whereas a lot of research in AI has already been devoted to the first type of games, this is hardly the case for the second type. Graphics and sound are mostly of top-quality, but the behaviour of the characters is mostly disappointingly weak. One of the researchers trying to improve the quality of the characters using adaptation techniques is Pieter Spronck, who recently succesfully defended his Ph.D. thesis "Adaptive Game AI". In concordance with his thesis defense a symposium was organised entitled "Machine Learning for Commercial Game AI". This issues reports both on Spronck's thesis and defense as well as on the symposium.

Anyway, the coming months are very interesting for computer-game researchers. We soon have the "traditional" 13th World Computer Chess Championship in Reykjavik, Iceland (August 13-21), shortly followed by the 10th Computer Olympiad and 11th Advances in Computer Games conference in Taipei, Taiwan (September 3-9). A few weeks later the 4th International Conference on Entertainment Computing is held in Sanda, Japan (September 19-21). Reports on all these events will be included in the October 2005 issue of the *BNVKI Newsletter*.

**Pieter Spronck's Ph.D. thesis:** http://www.cs.unimaas.nl/p.spronck/Pubs/ThesisSpronck.pdf
**13th World Computer Chess Championship:** http://www.cs.unimaas.nl/icga/news/wccc/2005/
**10th Computer Olympiad and:** http://www.cs.unimaas.nl/olympiad2005/
**11th Advances in Computer Games conference:** http://www.iis.sinica.edu.tw/Conference/ICGA2005/
**4th International Conference on Entertainment Computing:** http://ist.ksc.kwansei.ac.jp/ICEC2005/

We are glad to inform our readers that the BNVKI acquired the domain names bnvki.org and bnaic.org, linking to the appropriate sites with information on our BNVKI organisation and on all BNAIC conferences, respectively.
**BNAIC conferences**: http://www.bnaic.org
**BNVKI organisation:** http://www.bnvki.org

**Note added**
Recently we were informed on the sad news of the death of former ECCAI president dr. Robert Milne. He died on Mount Everest on Sunday, June 5, 2005 (see http://www.aiai.ed.ac.uk/project/everest/ for more information). The Everest was his last challenge after having climbed the highest summits on each continent. In the next issue we will publish an extended *In Memoriam*.

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The photographs in this issue are by courtesy of Ria Coolen, Peter Geurtz and Annette Schade.

Pictures on the front cover and previous page: screenshots from *Neverwinter Nights* by courtesy of Pieter Spronck.

The deadline for the next issue is: **August 1, 2005**.

## BNVKI-Board News

*Han La Poutré*

In the last couple of years, the number of conferences, workshops, and other meetings in artificial intelligence and computer science has grown considerably. This is an indication of increased activity in our research area and of a period of substantial growth. It shows that AI and computer science are very much alive and full of energy.

On the downside, however, it seems that at this moment, the growth in the number of scientific meetings may actually go a bit too fast: it may actually grow a bit faster than the community does. We can observe this by, e.g., the fact that nowadays, an average researcher is surprised if the submission deadline of a conference is not extended. Extension was a common thing this year, for small workshops as well as large conferences. On its own, this is not a bad thing, but at least it may be an indication that too many publication and meeting possibilities currently exist, since authors are just not yet ready with their next paper, after their previous one.

Hopefully, this phenomenon is only temporary or just some kind of coincidence, and will vanish again. E.g., mainly long-term conferences and workshops will remain in the future. If not, the community should think about this issue: do we really want this and how do we handle this. At least, it is something for reflection in the upcoming time.

In artificial intelligence, we enjoy our binational conference BNAIC as an interesting scientific meeting place. We will enjoy the already 17th version of this conference this year. When you read this, it is already too late to submit a paper to it. But this was not the main message of this column, of course.

## Adaptive Game AI

*Ph.D. thesis by Pieter Spronck*

*Marc Ponsen*
*Landgraaf, the Netherlands*

Games have long been an attractive area for artificial intelligence (AI) research. Game research, in particular in analytical games such as Chess, Checkers and Othello, brought major advancements to the field. For these types of games, scientists were able to design computer players that can outperform even the best human players. Humans were not so much outsmarted, they were beaten by mere enumeration. For instance, a chess computer can calculate thousands of moves and evaluate their effect in just a few seconds. When allowing chess computers to 'think' long enough, it can look up the best move. This can hardly be considered as true human-like intelligence. Fortunately for humans, there still exist games for which brute processing power is not sufficient to win, and where humans are still superior over computers.

Currently, more and more AI researchers are slowly moving away from analytical games, and are focussing their attention on a new breed of games: interactive computer games (e.g., Quake, The Sims, Tombraider, etc.). These games are often far more realistic (close to real-world environments and situations) and complex compared to analytical games. For example, a pawn in chess can only move in one direction and the entire board only includes 64 identical cells (besides their color). In contrast, computer players in interactive computer games can move freely through gigantic virtual worlds with varying terrain (e.g., cities, forests, etc.). These games offer a whole new range of AI challenges and according to several prominent AI researchers, they are the ideal testbed to implement and evaluate true human-like intelligence (contrary to the narrow domain of analytical games).

Pieter Spronck is one of the pioneers working on AI in interactive computer games. In his Ph.D. thesis, called *Adaptive Game AI* he evaluates the necessity and current state of this so-called game AI. He claims that the current performance of computer players in interactive computer games is poor. The people designing these games typically focus on the 'looks' (e.g., graphics and sounds) and focus less on the 'brain' (e.g., the intelligence of computer players inside these games) of games.

A major flaw of game AI is that often opponent behavior is static and predictable. Computer players cannot change their beliefs over time, and are unable to learn from their mistakes. Consequently, human players can quickly and easily find ways to consistently beat the computer player.

In his thesis, Pieter Spronck proposed to solve the problem described in the previous paragraph by implementing an 'Adaptive Game AI'. An adaptive game AI has the ability of self-correction (resolve contra-productive behavior) and even the ability of creativity (successfully adapt to changing situations). He describes several different approaches for implementing adaptive game AI and discusses their requirements. His main contribution is a technique called 'dynamic scripting', a

technique inspired by standard reinforcement learning techniques. In short, dynamic scripting rewards good behavior and punishes bad behavior. This allows computer players to adapt to the human opponent during the game. Dynamic Scripting was implemented and evaluated in several computer games. The results were encouraging and met all the requirements affiliated with adaptive game AI, as discussed in Pieter Spronck's thesis. Therefore, we may see a next generation of interactive computer games that include smart, adaptive computer opponents using the dynamic-scripting technique.

## A Report on Pieter Spronck's Ph.D. Thesis Defense and the "Machine Learning for Commercial Game AI" Symposium

*Yngvi Björnsson*
*Reykjavik University*

Pieter Spronck successfully defended his Ph.D. thesis on May 20, 2005 at the Universiteit Maastricht, The Netherlands. His thesis work was on adaptive game AI in commercial computer games.

Game-playing is one of the oldest areas of investigation in artificial intelligence and has been at the forefront of AI research ever since the birth of the first computers, over half a century ago. Strategic board games such as *chess*, *checkers*, *Go* have traditionally been the central test-bed for this line of research. However, in the past few years the research focus has gradually moved away from such games and more towards commercial video games such as role-playing and real-time strategy games. Such games are typically more interactive and fast-paced than board games and consequently pose new interesting research problems on their own. Pieter's Ph.D. thesis is a clear sign of this paradigm shift, and to my knowledge this is one of the first Ph.D. works to exclusively focus on game AI in commercial games.

In his thesis Pieter explores the question of how adaptive machine learning methods – in particularly evolutionary methods – can improve effectiveness and quality of complex game AI. He investigates several techniques and approaches to make learning techniques in games more efficient, effective, and robust. He also explores the use of adaptive methods to make game-play more balanced. He uses a variety of test beds, ranging from home-made games and simulated environments to full-scale open source RTS and commercial role-playing games. Overall the results of his work show a strong promise for adaptive game AI. What stands out in my view as the most promising aspect of his work is the novel idea of *dynamic scripting*.

Pieter Spronck receives congratulations from his promotores Prof. Jaap van den Herik and Prof. Eric Postma.

### SYMPOSIUM

On May 19, the day before Pieter's thesis defense, IKAT/SIKS organized a symposium titled *Machine Learning for Commercial Game AI*. The aim of the symposium was to present state-of-the-art of research into artificial intelligence for commercial games. This was an interesting and informative conference featuring several excellent talks (the only complaint I have, if any, is the mysterious disappearance of the refreshments that were intended for the participants during the break; I cannot help wonder if any of the many students who were roaming the halls of the building did notice anything suspicious!?).

The featured speakers at the workshop were David W. Aha from Naval Research Laboratory and Jonathan Schaeffer, a professor and the head of the GAMES research group at University of Alberta. Prof. Jaap van den Herik formally opened the symposium. They are all prominent researchers within the AI research community.

In his opening talk David Aha introduced *TIELT*, a test-bed for integrating and evaluating learning techniques. *TIELT* is a freely available and fully supported tool that offers an application programming interface for simulators and decision systems, especially focusing on complex strategy games. What I found to be of a particular interest was the fact that a highly anticipated commercial RTS game, EMPIRE EARTH II, offers a partial support for *TIELT*. Hopefully this is an important step towards a closer cooperation between the game industry and the academia in the future.

Yngvi Björnsson (yours truly), an associate professor at Reykjavik University and a former member of the GAMES group at University of Alberta, next gave a talk on how user input can be used to speed up the convergence of reinforcement learning. This is of a particular relevance for mobile gaming platforms where there are both limited CPU and memory resources.

Jonathan Schaeffer's talk was about a pattern-based game scripting tool called *ScriptEase*. The tool is intended for non-programmers to write interactive stories in RPG games. The tool already includes a front-end for *Bioware's* popular game NEVERWINTER NIGHTS, and a front-end for QUAKE is already underway. A part from the usual game-playing users that might be interesting in writing their own game worlds using this tool, the tool has interestingly also been used as a pilot project for high-school students as a part of their English education curriculum!

Sander Bakkes, a student at the Universiteit Maastricht, then discussed a mechanism for online learning of team behavior in QUAKE III using evolutionary algorithms. He introduced a new technique for learning best-response strategy by exploiting relevant game-play experiences.

Jeroen Donkers gave the next talk. He did his Ph.D. thesis at the Universiteit Maastricht on opponent-modeling in board games and is now an assistant professor there. His talk was on how opponent modeling can be utilized in commercial games. Apparently there are many interesting opportunities and new challenging research questions to be investigated for opponent modeling in commercial games.

The last speaker was Pieter Spronck. He talked about how to objectively measure entertainment value of commercial games and how machine learning can be used to adapt the game AI to the level of the human player. Some work has been done previously on objective measures of fairness in board games but very different measures are needed for commercial games.

Finally, I like to thank Pieter and his family for their kind hospitality and Pieter for inviting me to be on his thesis defense committee. I first had the pleasure to meet Pieter when he came to visit the GAMES group at University of Alberta in the summer of 2003. He was then already deeply engaged with his research and was working on a new technique he had developed called dynamic scripting, which was later to become one of the main contributions of this thesis work. His talent, hard-work, and enthusiasm earned him the respect of the fellow researchers at the GAMES group that worked with him. His hard-work has now less than two years later resulted in a solid Ph.D. thesis. Congratulations!

## Leo Coolen, an Obituary

*by Jaap van den Herik*
*IKAT, Maastricht*

With much regret we communicated the passing away of Professor Leo Coolen to our readership in the previous issue of the *BNVKI Newsletter*. The sad news reached us at the moment that the Newsletter was made ready for print so that only a few lines were open to include the message.

Leo Coolen was General Director of NWO (Netherlands Organisation for Scientific Research) and, since 1997, External Professor Telecommunication at the Institute for Knowledge and Agent Technology (IKAT) of the Faculty of General Sciences. In his capacity of teacher in Telecommunication and Telematics, he was involved in the Knowledge Engineering programme and closely involved in several A.I. developments, both inside and outside the Netherlands. For instance, he was a member of the Advisory Council of the Research School SIKS. He was active in the tUL (transregional University of Limburg) and lectured the subject of Telematics, both in Maastricht and Diepenbeek, at the same time. In the early hours of Thursday April 28th, 2005, Prof. ir. L.A.A.M. Coolen passed away in his sleep.

Thanks to his efforts, many contacts, both inside and outside the academic community, were established. He could contribute in so many ways due to the variety in his career. In 1974, Leo Coolen (1949) passed his study at the Eindhoven University of Technology cum laude. From 1974 to 1975 he worked as an employee at an Engineering Office in Amsterdam. From 1975 he worked at KPN Research (Dr. Neher Laboratory), from 1992 until 2000, he was General Director of KPN Research. After that he became General Director of the KPN software House and President of the Curatorium of the Centre for Mathematics and Computer Science (CWI). He was member of the Board of Technical Sciences of the Royal Academy of Arts and Sciences (KNAW) and director of the Royal Holland Society of Science and Humanities.

He was amiable, wise, and a man of principle. This combination made him an extraordinary person. His wife Ria underlines this in the mourning card, by saying: "The most interesting man I had to let go." They had been together for more than thirty years.

One thing is for sure, he would have made the same statement if he would have lost her. Leo Coolen had one small specialty: he knew everything there is to know about antennas. Moreover, his own antenna worked flawlessly in his social life. He was an understanding man; he listened even better and made judgements on basis of rationality.

Leo Coolen was an accurate and serious man who showed a great deal of commitment to his work and especially the people he worked with. We are extremely grateful for his dedication and loyalty.

His cremation took place on Tuesday, May 3rd, at the Crematorium Ockenburgh, The Hague.

Prof.ir. Leo Coolen.

## 100 SIKS Theses

*Jaap van den Herik*
*IKAT, Maastricht*

We start with offering the Research School SIKS our sincere congratulations. The Ph.D. thesis announcement below contains the 100th Ph.D. thesis, prepared and (to be) defended under the aegis of SIKS. In particular we would like to send our congratulations to the SIKS Director Professor John-Jules Meyer who worked very hard over the years to achieve the current recognition for the Research School SIKS. Indeed, SIKS is doing very well and that is owing to all its members, its students, its professors, and its supporting employers. However, an exception may be made for the Director who almost always attended the SIKS courses, who stimulated the SIKS Ph.D. students, and who had a major part in the number of one hundred Ph.D. students who completed their theses. For your detailed information number 100 is Anders Bouwer, who will defend the thesis *Explaining Behaviour: using Qualitative Simulation in Interactive Learning Environments*. The supervisors will be Professor Bob Wielinga and Professor Joost Breuker, Assistant promoter will be Dr. Bert Bredeweg.

Professor Wielinga is still going strongly forwards. Together with his long-time companion Professor Breuker he has now almost completed a renowned series of KADS theses on behaviour, of course it is on artificial behaviour. *Explaining Behaviours* can be seen as the first step towards *Consciousness Explained*. Although we have already a famous description (by Daniel Dennett) on this topic, it is for sure that many Ph.D. theses can be written on this topic. So, we wish the research group at the University of Amsterdam a fruitful investigation over the next five years.

As you may understand, success has many fathers. So, our congratulations may go to SIKS, Meyer, the Universiteit van Amsterdam, Bouwer, Wielinga, Breuker, and Bredeweg.

The attention for numbers let almost go unnoticed the quality and other specifics. For instance, the trio professores Professor De Bra, Professor Houben and Professor Paredaens deliver two Ph.D. students on June 20. Congratulations with this success.

As readers can see in the list of announcements below we have an announcement which we received later, but which we still would like to communicate, namely the Ph.D. defence by Elisabeth Ogston at the Vrije Universiteit Amsterdam. For your information, this is also a SIKS Ph.D. defence.

Finally, we congratulate all Ph. D. defendees with the milestone reached and wish them a fruitful career as Doctor (Dr.).

**Elisabeth Ogston** (April 5, 2005). *Agent Based Matchmaking and Clustering – A Decentralized Approach to Search*. Vrije Universiteit Amsterdam. Promotores: Prof.dr. F.M.T. Brazier, Prof.dr.ir. M.T. van Steen.

**Flavius Frăsincar** (June 20, 2005). *Hypermedia Presentation Generation for Semantic Web Information Systems*. Technische Universiteit Eindhoven. Promotores: Prof.dr. P. de Bra, Prof.dr.ir. G-J. Houben, Assistant Promotor: Prof.dr. J. Paredaens.

**Richard Vdovják** (June 20, 2005). *A Model-driven Approach for Building Distributed Ontology-based Web Applications*. Technische Universiteit Eindhoven. Promotores: Prof.dr. P. de Bra, Prof.dr.ir. G-J. Houben, Assistant Promotor: Prof.dr. J. Paredaens.

**Jeen Broekstra** (July 4, 2005). *Storage, Querying and Inferencing for Semantic Web Languages*. Vrije Universiteit Amsterdam. Promotor: Prof.dr. F. van Harmelen.

**Anders Bouwer** (July 6, 2005). *Explaining Behaviour: using Qualitative Simulation in Interactive Learning Environments*. Universiteit van Amsterdam. Promotores: Prof.dr. B.J. Wielinga, Prof.dr. J.A.P.J. Breuker, Assistant Promotor: Dr. B. Bredeweg.

**Fred Hamburg** (November 24, 2005). *Een Computermodel voor de Ondersteuning van Euthanasiebeslissingen*. Universiteit Leiden. Promotores: Prof.dr. H.J. van den Herik, Prof.dr. E.O. Postma, Prof.dr. H.M. Dupuis.

As readers may have noticed, recently dr.ir. G.-J. Houben has been appointed as a Professor at the Vrije Universiteit Brussel. The *BNVKI Newsletter* congratulates him wholeheartedly with this success and looks forward to his inaugural address and to the new energy and performances which he surely will transfer to his students owing to the recently received dignity.

Below the official acceptance of the professorial duty is announced for Professor Catholijne Jonker. Her official address is determined to be at July 8. In two previous issues of this newsletter we paid ample attention to her appointment. So, it is a reason to keep it brief this time. We congratulate Catholijne warmly with the official acceptance and wish her many successful years in Nijmegen.

### INAUGURAL ADDRESSES

Catholijne Jonker. *Het organiseren van een buurtfeestje: De synergie van Cognitiewetenschap, Artificiële Intelligentie en aangrenzende wetenschappen*. Radboud Universiteit Nijmegen, July 8, 2005.

**Section Editor**
**Richard Starmans**

## Spring Course Datamining in Maastricht

From June 27-July 1, 2005 a 5-days course on **Data mining** will be organized at the Universiteit Maastricht. For all details on aims, course content, course material and location, please check: http://www.cs.unimaas.nl/datamining/2005/general.htm.

As a result of the cooperation between SIKS and the organizers of the course, SIKS-Ph.D. students can participate without paying fee. Participating in this course is a part of the advanced components stage of SIKS' educational program. However, the number of places available is limited. SIKS has reserved a number of places, primarily intended for those Ph.D. students working in the field of Computational Intelligence (machine learning, neural and evolutionary computing, datamining / intelligent data analysis, adaptive / self-organizing / fuzzy systems, quantitative / statistical empirical research, probabilistic reasoning / Bayesian networks, pattern and image recognition / intelligent search algorithms / games). Other SIKS-Ph.D. students are not excluded. However, if the number of applicants exceeds the number of places available, the students working on the course topics come first.

### REGISTRATION

SIKS-Ph.D. students interested in taking the course, should **NOT** contact the local organization, but register at http://www.siks.nl/act/inschrijving_DM.html and confirm in their mail that their supervisor supports their participation!

Hotel accomodation (bed, breakfast, lunch and dinner) **is not part of the arrangement.** Participants must make their own arrangements.
**Deadline: June 7, 2005**

You will receive a notification whether you can participate as a SIKS-Ph.D. student as soon as possible.

## Agent Systems Summer School for SIKS-Ph.D. Students

From July 18-22, 2005, the seventh edition of the European Agent Systems Summer School (EASSS 2005) takes place in Utrecht.

Details on program and location can be found at http://www.agentlink.org/happenings/easss/2005/about.html.

As a result of the cooperation between SIKS and the EASSS 2005 organisation, SIKS-Ph.D.-students can participate without paying entrance fee. The summerschool is part of the advanced components stage of the school's educational program and therefore Ph.D. students working in the field of agent systems are strongly encouraged to participate. However, there is a fixed number of places available for SIKS-Ph.D. students at the summerschool, and therefore an early registration is required. A free participation as a SIKS-Ph.D. student is only possible by submitting the electronic registration form that can be found at http://www.siks.nl/act/inschrijving_easss.html.

Ph.D.-students will receive a notification whether they can participate as soon as possible. So, do not contact the EASSS organisation for questions about this SIKS-arrangement and do not use the registration form at the EASSS-site. For all questions regarding SIKS and its educational program, please contact office@siks.nl.

## Advanced SIKS Course "Business Process Integration"

### INTRODUCTION

On September 19 and 20, 2005 the School for Information and Knowledge Systems (SIKS) will organize an Advanced Course "Business Process Integration". The course takes two days, will be given in English and is part of the so-called Advanced Components Stage of the Educational Program for SIKS-Ph.D. students. Although the course is primarily intended for SIKS-Ph.D. students, other participants are not excluded. However, their number of passes will be restricted and depends on the number of students taking the course. The course is given by experienced lecturers from the Netherlands and abroad actively involved in the research areas related to the topics of the course.

### LOCATION

Enschede. More details on the conference center will be provided soon. The course is connected to the EDOC'05 conference.

### SCIENTIFIC DIRECTOR

Dr. Hans Weigand (UvT)

### LOCAL ORGANIZER

Dr. Pascal van Eck (UT)

### ABOUT THE COURSE

Business processes often span different organizational functions and increasingly cross organizational boundaries. The way business processes integrate different functions, or web services, and the way business processes interface with each other is receiving more and more interest from researchers and practitioners. Business Process Integration includes topics like data integration, web transactions, cross-organizational workflow, supply chain integration, business process management and contract-based coordination. In this course, the focus will be on the process and contract aspects.

The 2-day course is an advanced course in the area of e-business systems, one of SIKS' eight research foci (see http://www.siks.nl/newfoci.html).

### REGISTRATION

To be announced.

## SIKS Basic Course "Research Methods and Methodology for IKS".

### INTRODUCTION

In November 2005, the School for Information and Knowledge Systems (SIKS) organizes the annual three-day course "Research methods and methodology for IKS". The location will be announced later. The course will be given in English and is part of the new Educational Program for SIKS-Ph.D. students, that started in 2003. Although the course is primarily intended for SIKS-Ph.D. students, other participants are not excluded. However, their number of passes will be restricted and depends on the number of SIKS-Ph.D. students taking the course.

"Research methods and methodology for IKS" is relevant for all SIKS-Ph.D. students (whether working in computer science or in information science). The primary goal of this hands-on course is to enable these Ph.D. students to make a good research design for their own research project. To this end, it provides an interactive training in various elements of research design, such as the

conceptual design and the research planning. But the course also contains a general introduction to the philosophy of science (and particularly to the philosophy of mathematics, computer science and AI). And, it addresses such divergent topics as "the case-study method", "elementary research methodology for the empirical sciences" and "empirical methods for computer science".

**PROGRAMME**

The programme is not available yet.

**COURSE COORDINATORS**

Hans Weigand (UvT), Roel Wieringa (UT), John-Jules Meyer (UU), Richard Starmans (UU).

**REGISTRATION**

To be announced.

## AI EDUCATION

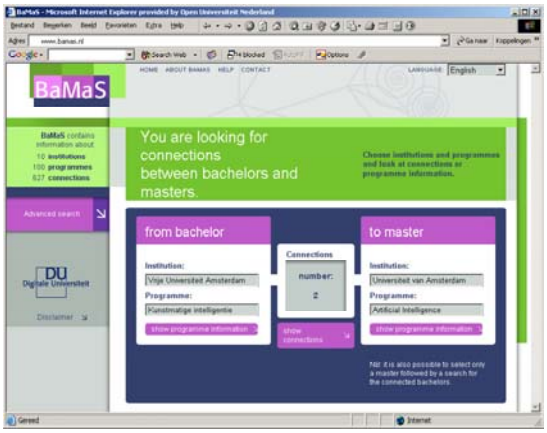
### Section Editor
### Evert van de Vrie

## BaMaS: Bachelor Master Connections Site

*Evert van de Vrie*
*Open Universiteit Nederland, Heerlen*

BaMaS (www.bamas.nl) is the on-line information system on the links and connection programmes between bachelor and master programmes. Following a bachelor programme at a university a student can continue his education in a related master programme, at his own or at another university. However, after completion of a bachelor programme at a polytechnic, he can continue his studies with a master programme at either a polytechnic or more often at a university instead. To be admitted to a university master in some cases there are no extra obligations apart from completing the bachelor programme, but in other cases a student may well have to complete one or more connection courses. In case he wishes to proceed to a less-related master programme, a full connection programme may be required.

In BaMaS all information on links and connection programmes is accumulated and presented. For each bachelor programme one can thus check, which master programmes can be entered without any further obligations, or for which master programmes completion of a connection programme is required. It is also possible to select a master programme and check which bachelor programmes will allow to start with that specific master, with or without a connection programme. Apart from information on the links or connection programmes BaMaS also offers limited information on the bachelor and master programmes themselves. For extended information one is directed to information sites of the respective institutions. The information on programmes and their links is inserted by the institutions themselves, and is as recent as possible. Information is available in Dutch and in English.




The initiative for the development of BaMaS was taken by the "Digital University". During the development phase the project was managed by the Open University of the Netherlands. As of the 1st of May 2005 participants in BaMaS are: Twente University, University of Amsterdam, Free University, Open University of the Netherlands, Saxion Polytechnic, Fontys Polytechnic, Polytechnic In-Holland, and the Polytechnics of Amsterdam, Utrecht and Rotterdam. As of this date BaMaS contains information on programmes and connections between the Computer Science Departments of these participants. It is intended that information on all Dutch Computer Science and Artificial Intelligence programmes is entered in BaMaS in the course of 2005. Subsequently information on other domains will be incorporated in BaMaS so that ultimately all bachelor and master programmes in the Netherlands are presented in BaMaS.

Since bachelor and master programmes are not limited to the Netherlands, but exist in all of Europe, and one of the reasons for introducing the bachelor-master system in Europe was to enhance the opportunities for continuing studies after a bachelor with a master in another institution or even country, the long-term perspective of BaMaS is definitely European.

Institutions willing to participate in BaMaS and willing to publish information on programmes and links are asked to send a mail to beheer.bamas@ou.nl after which they will receive information on options and obligations.

## LOKweb Three Years in Operation

*Evert van de Vrie*
*Open Universiteit Nederland, Heerlen*

LOK ('Landelijk Onderwijsweb Kennistechnologie' or 'Knowledge Engineering Web') is now for three years in use at the Dutch Universities. LOK contains over 100 educational tasks in Artificial Intelligence and Knowledge Engineering. Each task is fully self-contained, meaning that all instructions, all tools, software or data collections for performing the tasks are included. Study-time for the tasks ranges from 2 up to 40 hours. LOK-tasks can be implemented in courses at universities and polytechnics. Faculties can arrange their own courses and where suitable LOK-tasks can be inserted, complementing colleges, workshops or self-study.

The tasks in LOK are developed by the domain specialists of the various institutions that participate in the LOK-initiative. The advantage is a re-use of educational material. The advantage for the developing specialists is that there is more profit on their efforts; the advantage for the participating institutions is the free use of high quality educational materials.

Today six universities participate in LOK: Rijksuniversiteit Groningen, Universiteit Utrecht, Universiteit van Amsterdam, Vrije Universiteit, Universiteit Maastricht and Open University of the Netherlands. The start of LOK was in September 2002, so it is now in use for the third year. An investigation is executed on the use and maintenance of LOK. It is concluded that over 2,000 times a year a student from one of the participating institutions is downloading and executing a LOK-task. In more than 50% of the cases a task developed on another institution is made, so that is the real profit of the LOK-initiative.

Maintenance of the tasks is now starting to happen after 3 years of operation of LOK. Tasks are updated, due to new developments or experiences in applying the tasks.

A report of the investigation (in Dutch) is available at: http://www.open.ou.nl//lokproject/Rapportage_gebruik_2004_2005.doc

The LOKweb can be found at: www.ou.nl/lok.

For information about LOK or for participation, please contact: Evert.vandeVrie@ou.nl.


## Annual Meeting of the Artificial Intelligence Studies in the Netherlands (KION)

*Annette Schade*
*Universiteit Maastricht*

On the 8th of June 2005, a KION meeting was held in Maastricht. The Universiteit Maastricht was the host this year. The main subject of the meeting was the new system of quality assurance. The meeting was attended by staff members of the universities of Groningen, Utrecht, Nijmegen, Amsterdam (both universities) and Maastricht.

Two years ago the QANU (Quality Assurance Netherlands Universities) was set up in order to audit the universities. The QANU was formerly a department of the VSNU but has now become independent. After examination by the QANU a report will be offered to the NVAO (the Dutch and Belgium Organ for Accreditation) with a proposal whether or not to accredit the programs examined. Dutch and Belgium studies for AI will be audited separately. The studies for AI have to write a self-report according to a format, edited by the NVAO. The deadline for handing in these reports is June 1, 2006 for AI studies. For each bachelor and each master program a report has to be written. However, it is allowed to lift some items, for instance description of the internal quality assessment system, to a higher aggregation level.

After this general introduction to the subject matter, each university gave an impression of the latest developments of their AI studies with respect to the number of students, the implementation of the bachelor master structure, the position among other 'competing' studies, and the organisational changes. There are differences in introduction of the bachelor master structure. Some implemented it gradually, others started all-round. All master studies take two years, except the ones in Maastricht. The masters in Maastricht at the Faculty of General Sciences take one year. This period is due to the association with the University of Diepenbeek Belgium, organised in the Transnational University of Limburg.

The aim of the meeting was to combine forces in order to create a clear profile for the AI studies. It is important to look for similarities and differences. One committee will work on this profile, while another committee will develop a proposal for a review committee. After lunch in the main building of the Universiteit Maastricht, Frank Wamelink, coordinator of the audits by the QANU, gave an overview of the differences between the former and the new quality assurance systems.

The timetable for the next audit might read as follows:

| | |
|---|---|
| October 2005: | the QANU project leader for AI studies is determined. |
| January 2006: | KION proposes candidates for the review committee. |
| February 2006: | determination of the review committee. |
| May/June 2006: | first meeting of the review committee. |
| May 2006: | audit program. |
| Sept.-Nov. 2006: | audits. |

Finally, the attendants of the KION meeting were asked to look for candidates for the thesis price. During the BNAIC on the 17th and 18th of October in Bruxelles, the winner will be appointed.

Participants of the KION Meeting at Maastricht.

## SECTION KNOWLEDGE SYSTEMS IN LAW AND COMPUTER SCIENCE

**Section Editor**
**Marie-Francine Moens**

## IT Changes the Administration of Justice

**Dory Reiling (World Bank Group)**

*Report by Martine Boon*
*Vrije Universiteit Amsterdam*

Mrs. Dory Reiling LLM gave a presentation on how IT changes the administration of justice. Dory Reiling, who is also a vice-president of the Amsterdam district court and a deputy justice with the court of appeal in The Hague, started off by giving a clear insight into her work as Senior Counsel in Justice Reform in the World Bank Group in Washington DC. At the World Bank, Dory Reiling works in the Legal Vice-Presidency, in the practice group for justice reform. Her primary task is to advise justice reform projects in developing countries all over the world on best practices, including the use of IT and artificial intelligence in the courts.

The World Bank combats poverty in a different way. Improving the justice systems in developing countries is crucial to poverty reduction because they support the business climate needed for economic growth. The World Bank therefore encourages the appliance of technology in courts all over the world. IT is defined by Dory Reiling as: "all technology with which information is stored, exchanged and made available". One of Dory Reiling's core tasks is to give advice on the implementation of technology in local courts in developing countries. In order to do this, she has travelled a lot, for example to Georgia, Nepal, Benin, Sri Lanka and Macedonia. The advice that is given by Dory Reiling regarding the implementation of technology in the administration of justice of a country is part of the development program for the entire country.

Dory Reiling's presentation was divided into three parts. First of all, she discussed the effects of IT to the administration of justice. Secondly, she sketched the improvements that IT can bring to the administration of justice and thirdly she discussed

several innovations concerning the use of IT in courtrooms.

### EFFECTS

First of all, Dory Reiling explained that the introduction of IT in courtrooms has several important effects. The introduction of IT into an organisation generally entails a different governance structure of an organisation. For a successful implementation of IT in an organisation, questions like "Who decides on the use of IT?", "Who has the required funding?" and "Who decides which IT is being developed?" need to be answered. Dory Reiling stressed that the use of IT requires discipline on the one hand, but on the other hand also the capacity to change.

With regard to the administration of justice, one of the consequences of the introduction of IT into society is that certain types of cases are no longer brought to court. For example, in the US, the introduction of on-line payment has amounted to far fewer money claims being brought before the courts.

The introduction of IT may not only imply that more cases can be dealt with in a shorter period of time, but one may also have to look at cases in a different way.

### IMPROVEMENTS

As Dory Reiling explained, there are many ways in which technology can improve the administration of justice. Improvements should amount to a better adherence to the ideal of fair and public hearing by an independent and impartial tribunal as laid down in article 10 of the Universal Declaration of Human Rights and article 6 of the European Convention on Human Rights (ECHR). For example, the introduction of IT can increase the consistency of judgements, the speed a case is dealt with by a court and access to justice: If cases are judged more consistently, fewer cases will be tried in court, which will also reduce the time it takes a court to take a decision after a case has brought before a court. This in turn amounts to a better access for citizens to the legal system.

### INNOVATION

Finally, Dory Reiling discussed four examples of IT which will lead to new ways of working in the administration of justice: Online Dispute Resolution (ODR), mediation, video conferencing and multimedia. Dory Reiling mentioned "SquareTrade" as an example of a successful ODR project. SquareTrade is the on-line dispute resolution facility eBay offers to its customers. According to Dory Reiling, one of the success factors of SquareTrade is that the parties' reputations as buyers and sellers is at stake in the dispute-resolution process. Mediation by email is another possible innovative way to solve disputes on-line. Dory Reiling explained that computer programs have been designed to calculate win-win situations. These may support mediation processes. Both of the above innovations potentially reduce the number of court cases.

In case judges do have to decide a case in court, IT can also provide apt solutions. Dory Reiling illustrated that especially in cross-border cases, video conferencing can prevent long delays caused by witnesses or defendants having to be transferred to the courtroom. Currently, multimedia can be used to record witness statements. Dory Reiling described a particular example from Australia. Land claims by Aboriginals are heard on location in remote areas. Since the Aboriginals have an oral culture, the witness statements consist of song, dance, group conversations and the like. These expressions are recorded, and entered into the court record.

At the end of this interesting presentation, Dory Reiling concluded that the introduction of technology and artificial intelligence in the administration of justice results in standardisation, and therefore more consistent judgements, which leads to faster decisions and greater access to courts. More information on the work of Dory Reiling can be found on her website: www.doryreiling.com.

## ANNOUNCEMENTS

## Call for Papers 12th Research Symposium on Emerging Electronic Markets (RSEEM 2005)

*2-3 September 2005*
*Free University Amsterdam*

The annual Research Symposium on Emerging Electronic Markets (RSEEM) is a forum to present and discuss current and ongoing research. In order to stimulate a lively discussion the number of participants will be limited to around 30.

### FOCUS THEME

The focus theme of RSEEM 2005 is "Governance of Electronic Markets". In recent years electronic markets went through many changes; Business-to-

Business marketplaces (e.g., Covisint, Elemica) as well as Consumer-to-Consumer marketplaces (e.g., eBay). Some business models of electronic marketplaces turned out to be very successful, whereas others failed. The services provided by the marketplace operator appear to be crucial for the success of the marketplace success. Many of these services are facilitated by the rule-setting governance structure of the operator of the marketplace; e.g., how the operator governs the order fulfilment, payment, reputation mechanisms of buyers and sellers, dispute resolution, etc. A crucial issue seems to be which governance structures facilitate the most viable marketplace. An interesting new research challenge is how governance structures that foster collaborative relations (control, trust and social capital) between marketplace operators and the trading partners, have an impact on market performance. So-called collaboration electronic marketplaces are emerging, in particular in the B-to-B field, which assume and facilitate cooperative relations among the trading partners. In C-to-C marketplaces reputation mechanisms and web-site features seem to be a key success factor.

#### TOPICS

Invited topics include but are not limited to: marketplace operators as facilitators of electronic market relations; trust and social capital in electronic markets; governance and control mechanisms for electronic markets; negotiation support systems for electronic markets; auction mechanisms for electronic markets; business models for electronic markets; collaborative relationships in electronic markets; taxonomy of relations in electronic markets; mobile services for electronic markets; reputation mechanisms for electronic markets; country and industry specific aspects of electronic markets.

#### IMPORTANT DATES

Submission of extended abstracts (< 1500 words): May 23, 2005
Notification of acceptance: June 15, 2005
Submission of full or work-in-progress papers: August 15, 2005

#### SUBMISSION INSTRUCTIONS

All paper submissions to RSEEM 2005 must be in English and should not have been published before. Conceptual as well as empirical research is welcome.

The first submission of extended abstracts should not exceed 1500 words. Contact information of the corresponding author has to be included. Acceptance will be based on relevance, originality, and suitability for discussion. Based on the decision of the programme committee, submissions of full papers (based on the RSEEM style sheet) are required before August 15. Papers accepted for presentation will be included in the proceedings.
There are no rigid guidelines regarding paper length for the final research papers. We suggest the final papers to have between 10 and 15 pages.

#### CONTACT AND SUBMISSIONS

All submissions and questions should be addressed to: Yao-Hua Tan [ytan@feweb.vu.nl].

#### VENUE

The conference venue will be held at the Free University.

#### REGISTRATION

Registration fee is expected to be around 350 euro including accommodation for 2 nights and all meals.

#### HOTEL

Best Western Eden Hotel is located in the centre of Amsterdam near the famous Rembrandtsplein. There are good public transport connections to the hotel from Schiphol Airport (approx. 40 mins by public transport) as well as from the hotel to the Free University.

## Natural Computing and Applications Workshop (NCA 2005)

in conjunction with the 7th International Symposium on Symbolic and Numeric Algorithms for Scientific Computing (SYNASC-2005)

*September 25-29, 2005*
*Timisoara, Romania*

#### WORKSHOP DESCRIPTION

Natural Computation is a field of research that is concerned with the use of nature-inspired paradigms for solving computational problems. The world of natural computation is diverse and fascinating. It tries to combine the computing carried out in computer science with the computing observed in nature.

NCA'05 invites authors to submit their original and unpublished work that demonstrates current research in all areas of natural computation and their applications in science, technology, business and commerce. Submitted papers have to be original, containing new and interesting results.

### TOPICS

Suggested topics for papers include, but are not limited to, the following: evolutionary computing; neural computing; molecular computing (DNA computing, membrane computing); quantum computing; information processing in cells and tissues; immunocomputing; swarm intelligence; computation with words; granular computation; artificial life; hybrid systems and other intelligent systems inspired by nature; natural computing applications in knowledge discovery, business, science, finance, and operations research.

### SUBMISSION OF PAPERS

Papers of up to 8 pages must be submitted electronically in Latex format (IEEE paper style) to dzaharie@info.uvt.ro. All papers will be peer reviewed by at least two or more independent referees of the program committee of NCA'05 and accepted on the basis of their scientific merit and relevance to the Workshop topics. Papers accepted for presentation will be published in the SYNASC'05 post-proceedings (IEEE Computer Press).

### WORKSHOP DEADLINES

Submission of papers: June 1, 2005
Notification of acceptance: July 1, 2005
Final paper: September 1, 2005
Registration: September 1, 2005

### LOCAL ORGANIZER

Daniela Zaharie - West University of Timisoara, Romania, dzaharie@info.uvt.ro

## Call for Papers 16th International Conference on Applications of Declarative Programming and Knowledge Management (INAP2005)

*October 22-24, 2005*
*Fukuoka, Japan*

Declarative Programming is an advanced paradigm for the modeling and solving of complex problems. This specification method has got more and more attraction over the last years, e.g., in the domains of databases and the processing of natural language, for the modeling and processing of combinatorial problems, and for establishing systems for the Web.

INAP2005 is a communicative and dense single-track conference for intensive discussion of applications of important technologies around Prolog, Logic Programming, Constraint Problem Solving and closely related advanced software. It comprehensively covers the impact of programmable logic solvers in the Internet society, its underlying technologies, and leading edge applications in industry, commerce, government, and societal services.

We invite the submission of papers on the described fields, especially, but not excluding, in different aspects of Declarative Programming, Constraint Processing and Knowledge Management as well as their use for Distributed Systems and the Web: knowledge management, e.g., knowledge modeling, data mining; decision support, deductive databases; distributed systems and the web, e.g., agents and concurrent engineering, semantic web; constraints, e.g., constraint systems, extensions of constraint (logic) programming; theoretical foundations, e.g., deductive databases, nonmonotonic reasoning; systems and tools for academic and industrial use; knowledge-based web services – logic solvers and applications.

### PUBLICATIONS

All accepted papers will be published in a technical report. Selected papers will be published in a post-conference proceedings volume in the Springer Lecture Notes in Artificial Intelligence (LNAI) series
(http://www.springer.de/comp/lncs/index.html).

### IMPORTANT DATES

Deadline for Submission: August 1, 2005
Notification of Authors: August 24, 2005
Final Versions of Papers: September 12, 2005

### PLANNED SESSIONS

Track 1: Constraints (chair: Ulrich Geske)

- CP and IP/OR and local search
- CP systems
- Optimization and simulation of complex problems in industry, medicine, and office

Track 2: Knowledge Management (chair: Dietmar Seipel)

- Knowledge modeling and knowledge base management
- Answer set programming and its applications
- Data mining

Track 3: Applications (chair: Osamu Takata)

- Web agents and industrial web applications
- Information systems for industry, commerce, government and societal services
- Systems and tools for education and research

### SUBMISSIONS

Authors are invited to submit an electronic soft-copy of their paper in either Adobe PDF or Postscript format by email. Please use the submission page (http://inap.dialogengines.com/Submission/) to establish the first contact.

Authors are strongly encouraged to use LaTeX2e and the Springer llncs class file, available at LNCS Authors and Editors page (http://www.springer.de/comp/lncs/authors.html).

Submissions must be written in English and can be up to 10 pages long. All submissions must be original work. Submissions must be unpublished and not submitted for publication elsewhere. Work that already appeared in unpublished or informally published workshops proceedings may be submitted.

Please, indicate clearly your preference for one of the tracks of the conference.

More information: http://inap.dialogengines.com.

## Call for Papers 5th International Conference on Hybrid Intelligent Systems (HIS'05)

*November 6-9, 2005*
*Rio de Janeiro, Brazil*

Hybridization of intelligent systems is a promising research field of computational intelligence focusing on synergistic combinations of multiple approaches to develop the next generation of intelligent systems. A fundamental stimulus to the investigations of Hybrid Intelligent Systems (HIS) is the awareness that combined approaches will be necessary if the remaining tough problems in artificial intelligence are to be solved. Neural computing, machine learning, fuzzy logic, evolutionary algorithms, agent-based methods, among others, have been established and shown their strength and drawbacks.

Recently, hybrid intelligent systems are getting popular due to their capabilities in handling several real-world complexities involving imprecision, uncertainty and vagueness.

HIS'05 builds on the success of previous HIS events: HIS'04 was held in Kitakyushu, Japan, HIS'03 in Melbourne, Australia, HIS'02 in Santiago, Chile, and HIS'01, the first event, in Adelaide, Australia. All events attracted participants from over 30 countries. HIS'05 is, therefore, the fifth International Conference that brings together researchers, developers, practitioners, and users of soft computing, computational intelligence, multi-agents, and several other intelligent computing techniques. The objectives of this international meeting are to increase the awareness of the research community of the broad spectrum of hybrid techniques, to bring together AI researchers from around the world to present their cutting-edge results, to discuss the current trends in HIS research, to develop a collective vision of future opportunities, to establish international collaborative opportunities, and as a result to advance the state of the art of the field.

HIS'05 invites authors to submit original and unpublished work that demonstrates current research in hybrid intelligent systems research and their applications in science, technology, business and commerce. Submitted papers have to be original, containing new and original results. The assessment criteria will be heavily weighted towards originality, potential impact and relevance to HIS'05 themes. All papers will be peer reviewed by three independent referees of the international program committee of HIS'05.

### TOPICS

Theoretical advances in hybrid intelligent system architectures; interactions between neural networks and fuzzy inference systems; hybrid learning techniques (supervised/unsupervised/reinforcement learning); artificial neural network optimization using global optimization techniques; fuzzy inference system optimization using global optimization algorithms; hybrid systems involving support vector machines, rough sets, Bayesian networks, probabilistic reasoning, minimum message length, etc.; hybrid computing using neural networks/fuzzy systems/evolutionary algorithms; hybrid optimization techniques (evolutionary algorithms, simulated annealing, tabu search, GRASP etc.); hybrid of soft computing and statistical learning techniques; integration with intelligent agents (architectures, environments, adaptation/learning and knowledge management); hybrid models using inductive logic programming, logic synthesis, grammatical inference, case-based reasoning etc.; hybrid approaches and applications; robotics and automation; biomimetic applications; bioinformatics; web intelligence; image and signal processing; adaptive systems; data mining; behavioral simulations; affective computing; soft computing for control and automation; multi-agent systems; knowledge management; communication and networking; business systems and financial engineering; power engineering.

We invite you to submit a full paper of 6 pages, for oral presentation, A4 size, IEEE 2 columns format, using MS Word/LaTeX; proposal to organize a technical session (see the Call for Events Proposals in the conference Web page for more information).

Submitted papers have to be original, containing new results.

The proceedings of the conference will be published by IEEE Computer Society and will be available during the conference. It is assumed that all accepted manuscripts will be presented at the conference. All accepted papers must be accompanied by a full paid registration in order to appear in the proceedings.

All full papers are to be submitted in PDF electronically via the web site. Hard copies should be sent only if electronic submission is not possible.

#### JOURNAL PUBLICATION OPPORTUNITIES

a) *International Journal on Hybrid Intelligent Systems* (IJHIS)
   Papers addressing strong HIS theoretical developments (based on the referee recommendations) after substantial revision may be considered for publication in the IJHIS (http://ijhis.hybridsystem.com).
b) *Applied Soft Computing*
   Extended versions of 10 application papers of the conference will also be invited for a "fast track" submission for the Elsevier Science *Applied Soft Computing* Journal (http://www.elsevier.com/ locate/inca/621920).
c) *International Journal of Knowledge Management* (IJKM), World Scientific, Singapore
   Extended versions of 6 to 8 selected papers of the conference will also be invited for submission to the IJKM (http://www.worldscinet.com/jikm/jikm.shtml).
d) *Neural Computing and Applications*, Springer-Verlag London
   Extended version of selected papers on hybrid aspects of neurocomputing will also be invited for submission to the *Neural Computing and Applications* journal.

#### IMPORTANT DATES

| | |
|---|---|
| Sessions/tutorial proposals: | June 12, 2005 |
| Paper Submission (full paper): | July 1, 2005 |
| Notification of Acceptance: | August 1, 2005 |
| Authors' Registration: | August 19, 2005 |
| Camera-Ready Papers: | August 19, 2005 |

#### INFORMATION

Conference URL: http://his05.hybridsystem.com
Mirror Site: http://www.ica.ele.puc-rio.br/his05

## Call for Papers JURIX 2005

## The 18th Annual Conference on Legal Knowledge and Information Systems

*December 8-10, 2005*
*VUB Brussels, Belgium*

JURIX is a broad forum for research on information technology as applied to the law, and in particular on the development and application of artificial intelligence in the legal domain. Since 1988 JURIX has organized annual international conferences on current research in the field.

#### AT THE CROSSROADS OF ARTIFICIAL INTELLIGENCE AND E-GOVERNMENT

The 18th international JURIX Conference on Legal Knowledge Systems will focus on two major themes and their integration: Artificial intelligence and e-government. Currently we see several artificial-intelligence technologies maturing (e.g., computational modeling of reasoning, natural-language processing, information retrieval, information extraction in multimedia, machine learning, electronic agents, reasoning with uncertainty). Many research groups worldwide study their integration in and adaptation to legal knowledge and information systems. Parallel to this development, e-government applications are gradually gaining ground among local, national, European and international institutions. This conference will especially focus on the integration of both study fields and attention will go to fundamental research questions still to be solved as well as to practical applications.

#### TOPICS

Conference proposal themes will include, but are not limited to, the following topics and categories: computational models for legal reasoning and argumentation; case-based legal reasoning, deontic reasoning and normative reasoning; automated mediation, negotiation and dispute resolution; specialized knowledge representations and logics for law; dealing with dynamic, incomplete, contradictory or fragmented sources of legal knowledge; semantic web technologies and knowledge management for e-government; legal ontology creation and knowledge extraction; document standards and electronic publishing of legal information; automated semantic indexing, information extraction and categorization of legal documents; natural-language processing of legal sources; legal discourse modeling and legal reasoning; question-answering retrieval in law and governmental services; support systems for citizens and administration in e-government; legal electronic

agents and their coordination; automated contracting; mobile support systems of legal services; visualization and presentation of legal information for efficient consultation; mining of legal and evidentiary information (data, text and image); artificial intelligence in police and intelligence services; Impact of artificial intelligence on law, legal procedures and legal institutions.

We welcome full papers and workshop/tutorial/ demonstration proposals.

**SUBMISSIONS**

Consult the conference website for the submission of papers:
http://www.starlab.vub.ac.be/events/JURIX05
Proposals for workshop, tutorials and demonstrations are also invited. Please send a short description of the topic and the organizers to the Program Chair by email (Marie-France.Moens@law.kuleuven.be).

**ANNOUNCEMENT OF PROCEEDINGS**

The conference proceedings will be published by IOS Press (Amsterdam, Berlin, Oxford, Tokyo, Washington DC) in their series "Frontiers in Artificial Intelligence and Applications" before the Conference. The JURIX conferences are held under the auspices of JURIX: The Foundation for Legal Knowledge Based Systems (http://www.jurix.nl).

**IMPORTANT DATES**

| | |
|---|---|
| Paper submission: | September 4, 2005 |
| Notification of acceptance: | October 8, 2005 |
| Final paper (camera-ready): | October 23, 2005 |
| Workshop proposal submission: | September 4, 2005 |
| Tutorial and demonstration proposal submission: | September 18, 2005 |

The conference is organized by the Vrije Universiteit Brussels – STAR Lab, Belgium in collaboration with the Katholieke Universiteit Leuven – ICRI, Belgium.

## Call for Papers 2005 International Conference on Computational Intelligence and Security (CIS2005)

*December 15-19, 2005*
*Xi'an, China*

The International Conference on Computational Intelligence and Security (CIS) is an annual international conference to bring together researchers, engineers, developers and practitioners from academia and industry to share the experience, and exchange and cross-fertilize ideas on all areas of computational intelligence and information security. This conference serves as a forum for the dissemination of state-of-the-art research, development, and implementations of systems, technologies and applications in these two broad fields. CIS is co-sponsored by IEEE (Hong Kong) Computational Intelligence Chapter, Hong Kong Baptist University, Xidian University, and Guangdong University of Technology.

The technical areas include, but are not limited to: computational intelligence; information security and applications.

**IMPORTANT DATES**

| | |
|---|---|
| Submission of Papers: | July 31, 2005 |
| Notification of Acceptance: | September 1, 2005 |
| Final Camera-Ready Papers: | September 25, 2005 |

**PAPER SUBMISSION AND PUBLICATION**

Prospective authors are invited to submit high-quality manuscripts written in English. The submission of a paper implies that the paper is original and has not been submitted to elsewhere for possible publication. All submissions will be peer-reviewed by experts in the field based on originality, significance, quality and clarity. Authors should use the Latex style files or MS-Word templates provided by the Spring Lecture Notes to format their papers. The length of a submitted paper should not exceed 10 pages in the Lecture Notes format. All accepted papers will appear in the conference proceedings, published by Springer as Lecture Notes in Artificial Intelligence (http://www.springeronline.com/lncs) that are indexed by SCI-Expanded. Furthermore, selected papers will be considered for publication in an international journal, after expansion and/or revision.

Authors should submit a soft copy of their manuscripts with the pdf format only to the conference via the online submission system. For more details, please visit the conference web site at: http://www.comp.hkbu.edu.hk/~cis05.

**FURTHER INFORMATION**

For any enquiry or comment please contact:
Secretariat of CIS-05
Department of Computer Science
7/F, Sir Run Run Shaw Building
Hong Kong Baptist University
Kowloon Tong
Hong Kong

URL: http://www.comp.hkbu.edu.hk/~cis05

## CONFERENCES, SYMPOSIA WORKSHOPS

Below, the reader finds a list of conferences, symposia and workshops, and websites or addresses for further information.

**JULY 16-21, 2006**
2006 IEEE World Congress on Computational Intelligence, Sheraton Vancouver Wall Centre, Vancouver, Canada.
http://www.wcci2006.org

**JULY 25 OR 26, 2005**
International Workshop on Organizations in Multi-Agent Systems. To be held at the Fourth International Joint Conference on Autonomous Agents & Multi-Agent Systems (AAMAS 2005). Utrecht, The Netherlands.
http://ooop.emse.fr

**SEPTEMBER 2-3, 2005**
Twelfth Research Symposium on Emerging Electronic Markets (RSEEM 2005), Vrije Universiteit Amsterdam, Amsterdam.
Information: ytan@feweb.vu.nl

**SEPTEMBER 19-22, 2005**
The 2005 IEEE/WIC/ACM International Joint Conference on Web Intelligence (WI'05) and Intelligent Agent Technology (IAT'05), Compiègne University of Technology, Compiègne, France.
http://www.comp.hkbu.edu.hk/WI05/
http://www.hds.utc.fr/WI05
http://www.comp.hkbu.edu.hk/IAT05/
http://www.hds.utc.fr/IAT05

**SEPTEMBER 19-23, 2005**
Ninth International IEEE EDOC Conference (EDOC 2005). Enschede, The Netherlands.
http://www.edocconference.org

**SEPTEMBER 25-29, 2005**
Natural Computing and Applications Workshop (NCA 2005), Timisoara, Romania.
Information: dzaharie@info.uvt.ro

**OCTOBER 17-18, 2005**
17th Belgian-Dutch Conference on Artificial Intelligence. Brussels, Belgium.
http://como.vub.ac.be/bnaic2005

**OCTOBER 22-24, 2005**
16th International Conference on Applications of Declarative Programming and Knowledge Management (INAP2005), Fukuoka, Japan
http://inap.dialogengines.com

**OCTOBER 31 – NOVEMBER 4, 2005**
The 2nd International Workshop on Grid Computing and its Application to Data Analysis (GADA'05), Ayia Napa, Cyprus.
http://www.cs.rmit.edu.au/fedconf/gada/2005/paper

**NOVEMBER 6-9, 2005**
Fifth International Conference on Hybrid Intelligent Systems (HIS'05), Rio de Janeiro, Brazil.
http://his05.hybridsystem.com
http://www.ica.ele.puc-rio.br/his05

**NOVEMBER 10-11, 2005**
EADTU Working Conference 2005, Rome, Italy.
http://www.eadtu.nl/conference-2005/files/first_announcement_conf2005.pdf
http://www.eadtu.nl/conference-2005/files/first_announcement_conf2005.pdf

**NOVEMBER 10-12, 2005**
International Symposium on Health Informatics and Bioinformatics (HIBIT'05). Belek, Antalya, Turkey.
http://hibit05.ii.metu.edu.tr

**NOVEMBER 14-18, 2005**
4th Mexican International Conference on Artificial Intelligence (MICAI 2005). Monterrey, Mexico.
http://www.MICAI.org/2005

**NOVEMBER 23-25, 2005**
2005 International Conference on Cyberworlds. Nanyang Executive Centre, Singapore.
http://www.ntu.edu.sg/sce/cw2005

**DECEMBER 8-10, 2005**
The 18th Annual Conference on legal Knowledge and Information Systems (JURIX 2005), Brussels, Belgium.
Information:
Marie-France.Moens@law.kuleuven.be

**DECEMBER 15-19, 2005**
2005 International Conference on computational Intelligence and Security (CIS2005), Xi'an, China.
http://www.comp.hkbu.edu.hk/~cis05

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