CoLogNET Newsletter

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Editorial

Welcome to the sixth issue of the CoLogNET newsletter, the official newsletter of the Network of Excellence of Computational Logic.

This issue includes a variety of interesting contributions. You will come across reports on European research programs, upcoming meetings in the areas of logic and natural language processing, logic and multi-agent systems, formal methods, and many other topics.

Of particular interest is the report on TRain, a worldwide research effort aimed at developing a theory about the Railway Domain. Finally, the newsletter provides calendar information about upcoming events related to the network.❖

Antonis Kakas and Marinos Georgiades
University of Cyprus

Inside This Issue

2nd CoLogNET-ElsNET Symposium - Questions and Answers: Theoretical and Applied Perspectives

Logic and Natural Language Processing

Valentin Jijkoun
LIT, University of Amsterdam

Introduction

The symposium, organized by the Logic and Natural Language Processing Area of the European Network of Excellence in Computational Logic and Network of Excellence in Human Language Technology, was a very successful meeting bringing together researchers from very different, at the first glance, areas but all interested in the same ubiquitous and challenging phenomenon: certain strings of tokens being answers to other strings of tokens called “questions”.

The program of the one-day symposium was as dense (3 invited talks, 7 paper presentations and 4 presentations at the poster session) as it was diverse. The topics discussed ranged from architectures of Question Answering (QA) systems, the role of syntactic resources and semantic ontologies in QA, to possible definitions of the logical concept of answerhood. It was interesting and informative to see how similar problems and tasks are addressed in different contexts and similar research questions are answered from very different and often complementary perspectives.

In the invited talk, Karen Spark Jones gave a broad historic overview of the Question Answering task, which since its emergence more than 40 years ago has been considered a good application for investigating computational theories of language processing and meaning representation.

While being tractable (as the impressive performance

Continued on page 8

Executive Council Report

Heike Scheuerpflug

The majority of activities in the network over the past four months were related to the preparation of the second review which was scheduled for January 2004 in Brussels and its results.

Review Meeting

In collaboration with the European Commission the second review meeting was held on 26 January in Brussels. Jutta Eusterbrock (GER), Manuel J. Fernandez Iglesias (ES) and Marie Redmond (IRL, rapporteur) were invited to review the progress of CoLogNET. The reviewers and the Commission described the overall appraisal of the project as follows: *The project has been working for the past year on a range of activities designed to consolidate and enhance the network and as well as the education activities. Extensive time and resources have been spent on developing the portal web site and to publicising and promoting links with industry in order to encourage technology transfer.*

Among the main achievements of the second year of the project the reviewers listed:

- Success in the promotion of a network on Formal Methods in industry (ForTIA).
- Promotion of computational logic among researchers through workshops.
- Organization of a publication scheme with the participation of major publishers (Springer, Kluwer, North Holland, OUP.)
- Organization of a trans-national educational program on computational logic.

However, the second review report objected to the network's implementation of the portal of computational logic. Despite our believe to be in line with the relatively vaguely defined recommendations set out in the first review report, the Commission and the reviewers strongly recommended a re-design of the website in the second review. "The portal web site ***www.colognet.org*** needs to be re-designed and re-launched. This aspect of the project is critical to the overall success of the project as it will be instrumental in building a community of practitioners and researchers in Computational Logic in Europe and worldwide." This criticism appears to be justified and we started immediately to implement their recommendations.

CoLogNET Portal

Our opinions about the portal are divided and so are the different proposals for improvement. This is why a website task force was set up to decide on the information architecture and a complete re-design to comply with the web accessibility guidelines of the World Wide Web Consortium (W3C). The website task force (WTF) consists of Jörg Siekmann (DFKI GmbH Saarbrücken) Francesca Rossi (University of Padova), Odinaldo Rodriguez (King's College, London), Vesna Sabljakovic (TU Vienna), Daniel Kurushin (TU Vienna), Vincent Jacobs (University of Utrecht), Daniel Cabeza Gras (UPM, Madrid) and Heike Scheuerpflug (DFKI GmbH Saarbrücken). The WTF will report to the Executive Council of CoLogNET. A website task force meeting was held on 25 and 26 March in Saarbrücken. Proposals for a re-design were presented by EURICE, SMART Design, TU Vienna. The different proposals were discussed and evaluated at the meeting. The WTF opted for the approach of TU Vienna and the Lixto technology to realise the data integration, implementation of the search facilities & re-design.

Technology Transfer

The formal methods task force (TF1) sponsored and organized a full-day meeting at FM 2003, the 12th International FME Symposium, Pisa, Italy, September 8-14, 2003, devoted to formal methods and industry. This industrial day(I-Day) provided a unique opportunity for engineers and managers in industry to share their experience, technology. The I-Day aimed at all formal methods researchers wishing to keep in touch with the needs of practitioners. The industrial day took part at September 9, 2003. The welcome session was chaired by John Fitzgerald, Centre for Software Reliability, Newcastle; Dines Björner, Techn. University of Denmark and two sessions were organized with invited talks, a presentation of FM industrial papers and an I-Day Closing session (Dines Björner, John Fitzgerald and Kouichi Kishida, SRA Japan). About 45 participants took part in the all day meeting. Topics for the day included the FM market, state of the art and

future directions, the role of formal specifications and logics in phases of development including design and testing, technology transfer, suggested areas for academic research and tools development. The I-Day sessions were closed by a talk of Kouichi Kishida, SRA, Japan. Title: “Lookong Back to the Future – Thoughts on Paradigm Shift in Software Development.” The major event at the Industrial Day at Pisa was the formal founding of ForTIA, the Formal Techniques Industry Association. ForTIA has currently 30+ members worldwide. Up to now the members are from Japan (39), India, Russia (2), Northern America (2) and the rest from Europe.

TF 2 organised several high-level industrial events:

- A CoLogNet Workshop about Implementation Technology for Computational Logic Systems (ITCLS 2003) at FM 2003 with one invited speaker from industry

- The FACS’03 workshop about formal aspects of component software at FM 2003 The workshop was organised by the International Institute for Software Technology, the United Nations University. The objective of this workshop was to bring together researchers in the areas of software engineering and formal methods to clarify and discuss the issues in component-based software development. The workshop had some 40 registered participants and 3 invited speakers: Manfred Broy (Technical University of Munich, Germany), He Jifeng (UNU/IIST, Macau), Tom Maibaum (King's College, London University, UK)

- Invited talk of Mr. Mark Wallace, the deputy director of IC PARC (London), a research center of Imperial College which is mainly devoted to constraint logic programming languages at CP 2003, Kinsale, His talk was on “Languages versus Packages for Constraint Problem Solving”. Mark Wallace is. A Eclipse School was co-located with CP 2003. The purpose of the Eclipse school was to introduce the features of Eclipse which supports more than just finite domains.

- Invited speaker, Dr. Werner Ceuster at the 2nd COlogNET-ELSNET Symposium co-located with the 14th Amsterdam Colloquium, held on 18th December 2003, University of Amsterdam.

Summary & Outlook

The second periodic progress report including cost statements was submitted to the Commission on 02 March 04 but no feedback has been received so far. The amendment contract was forwarded to the consortium for signature on 18 March 04. The amendment contract will be counter-signed by the Commission and then sent to the consortium. The time frame for the implementation of the recommendations set out in the second review report submitted on 13 February 04 is rather tight. This effort demands all resources available in the network to meet the online review scheduled for the end of June. The next Executive Council meeting is scheduled for 23 April 04 at King’s College, London. The main objective of this meeting is to decide on the future of CoLogNET. A website and ERASMUS MUNDUS workshop will be co-located with the EC meeting in London and all partners are invited to participate in the workshops. ❖

FQAS 2004 - Sixth International Conference on Flexible Query Answering Systems

Lyon, France

2004, June 24-26

http://www.fqas2004.org/

FQAS is the premier conference for researchers and practitioners concerned with the vital necessity to provide easy, flexible, and intuitive access to information for every type of need. This multidisciplinary conference draws on several research areas, including databases, information retrieval, knowledge representation, soft computing, multimedia, and human-computer interaction. Held every two years, the conference provides a medium for exchanging scientific research and technological achievements accomplished by the international community. The previous events were held in Roskilde, Warsaw, and Copenhagen.

TRain Announcement

Martin Penicka
Czech Technical University

With this announcement we wish to make you interested in joining and contributing to TRain, a worldwide research effort aimed at developing a theory, a set of coordinated, integrated, theories, about the Railway Domain - ie., "all" that 'goes before' requirements, let alone computing systems development for railway applications.

We kindly refer you to a collection of some 30 web pages. They are, we believe, well-structured, and can be reached by clicking on to **http://www.imm.dtu.dk/~db/colognet/train/**

Web pages on "**Frequently Asked Questions**" (FAQ) and on "**Organisation**" should answer most questions that you might have. If you believe you are research-wise or otherwise interested in the train effort, please **consider joining**

What is the TRain Effort?

The TRain Effort is a proposal put forward for the formation, worldwide, of an Open, Free Consortium of

- railway people and institutions (companies, industries),
- academics (ie., people, researchers, scientists), and research centers, within computer & computing science and software engineering, transportation science and engineering, reliability and safety engineering, and operations research,

on the subject of exploring, creating and freely propagating (publishing, on the net, etc.) a Domain Theory for the Railway Infrastructure.

Why this Train Effort?

This effort relies on four dimensions:

The Railway Industry Justification:

- IT applications (computing systems, for all aspects of railways, and especially for integrated, cross-related tactical and operational management, monitoring and control, etc) become more and more important.
- The design of these computing systems is hard, too very hard: Often fraught with cost overruns, late deliveries, and erroneous software, etc.
- Requirements for such systems are usually badly formulated.

It is claimed that a proper, widely accepted Domain Theory for Railways can help ameliorate the above situation:

- Before computing systems can be designed one must understand the requirements:
- Before requirements can be formulated one must understand the domain

Today's computing systems for the railway infrastructure are not developed on the basis of anywhere near a reasonable understanding of the railway domain.

The Computing Science Justification:

We need a grand challenge project in order to gather enough momentum to make progress along the road to industrially scalable and useful, integrated formal techniques.

The Science Justification:

- There is no domain theory for such an important domain as that of railways.
- The natural sciences, so reveals "their name", has domain theories: Physics (mechanics, thermodynamics, electricity), biology, etc.
- Is it not time for man-made structures to have their domain theories?

Towards a Science of Man-made Infrastructure Components:

- We deploy the name 'infrastructure' - really without knowing its deeper, possible meanings.
- Transportation is one such infrastructure component.
- There are other infrastructure components such as financial service industry, health-care, and public administration.
- It seems high time someone started!

Sociological and Psychological justification:

- It can be done.
- It is fun! ❖

Logic and Law

R.A. Kowalski and M. Sergot
Imperial College, London.

In the December 2003 issue of the CoLOgNET Newsletter, Dov Gabbay advocates the promotion of research in logic and law. We strongly support his call for work in this area.

Dov refers to our work on the formalisation of the British Nationality Act (BNA) [1], as one of the earlier attempts to apply logic to law. We are grateful for this reference to our work, but are obliged to draw attention to a number of inaccuracies.

Dov refers to our formalisation of the BNA as using Horn clause logic, which "is not rich enough to allow for the wealth of nuances and interpretations/explanation/ revision so common in legal reasoning." In fact, we used Horn clause logic augmented with negation as failure. This is not mere pedantry. The use of negation of failure was essential in order to represent rules and exceptions, and other forms of defaults, and to provide a simple treatment of `burden of proof'.

Moreover, one reason for choosing the BNA specifically was that it was a new piece of legislation at the time. Its purpose was essentially to provide clear(er) definitions of legal concepts (such as British citizen). The core definitions, at least, admitted a reasonably clear interpretation that could be formalised. We were also able to avoid the further complications of trying to interpret large bodies of associated case law. (The representation of case law, in some aspects, has been addressed in other projects since.)

The main motivation of our work on the BNA was to study knowledge representation issues. Perhaps our main contribution was to point out that legislation of this type typically has the form of logic programs - implications with non-disjunctive conclusions. But more importantly, the BNA confirmed the need for a number of extensions of logic programming. It motivated and led directly to later work, by ourselves and by others, on topics such as the event calculus, implications with negative conclusions, abduction, and argumentation [2].

Dov says that our work "drew strong critical reaction from the Law community". This is not exactly so. The work raised some considerable interest in parts of the legal profession but was not regarded as controversial. The same techniques, often in even simpler form, are employed today in commercial systems in law and in public administration (notably in Australia). In the field of AI and Law, where the simplifying assumptions and background were well understood, the work was generally well received. The most notable attack on our work, reported in the Guardian newspaper [3], was by Philip Leith in the Computer Journal [4]. It criticised our work as viewing the legal process as the rigid application of rules embodying a single interpretation of the legislation. We (and others) argued that this criticism misrepresented our approach. At best, logic can only formalise one interpretation of the written law. To be useful in practice, it needs, in particular, to be combined with some way of dealing with undefined conditions, such as "being of good character".

Dov writes that he thinks that logic programmers certainly "do not realize (or believe) that law is an area of potentially evolutionary significance to logic". Unfortunately, we do not understand what he means by this, and so are unsure whether we agree with him or not. We are also not sure what recent new developments in logic he is referring to (which is of course consistent with his assertion) - except to say that papers on logic and law presented at conferences are not restricted to forms of Horn clause logic. Dov himself has been a co-author of papers at these conferences.

In any case, as one of us wrote [5] in response to the Guardian newspaper article: "We have always emphasised that the use of logic and logic programming in any context needs to be embedded within a framework for assimilating knowledge, for revising beliefs, and for comparing alternative systems of belief. It is precisely because reasoning in law requires such great flexibility that we have regarded it as an ideal domain to test and compare alternative theories of formal reasoning." We believe that this and other arguments for developing the area of logic and law still remain valid today. In this respect we are fully in agreement with Dov's article.

References:

1. Sergot, M., Sadri, F., Kowalski, R., Kriwaczek, F.,

Hammond, P., and Cory, T., "The British Nationality Act as a Logic Program", in CACM, Vol. 29, No. 5, 1986, pp. 370-386.

2. Some of the is work can be found on our homepages: **http://www.doc.ic.ac.uk/~rak/** and **http://www.doc.ic.ac.uk/~mjs/**.

3 "Logic and rules of law" by Brian Broomfield, The Guardian, 28 March 1987.

4. Philip Leith, "Fundamental Errors in Legal Logic Programming", The Computer Journal, Vol 29 No 6. 545-552.

5. "How the logic of the law is put on trial" by Robert Kowalski, The Guardian, 16 April 1987. ❖

Progress toward a European Master Programme in Computational Logic

Bertram Fronhoefer

Technische Universität Dresden

The CoLogNET team in Eduction and Training has been extending its activities toward an integrated European Master Program in Computational Logic which shall be distributed over several European universities.

The leading idea is that students enter this program with a bachelor in Computer Science or an equivalent degree, and obtain a Master of Science degree after two years. At each of the involved universities a rather similar basic education will be offered during a first year, which comprises `Foundations', `Advanced Logics', `Constraint Programming' and `Integrated Logic Systems'. This shall bring the students to equivalent levels of skills and knowledge which shall also enable them to pursue (part of) their further studies at one of the other universities.

After the first year the program diversifies at the different universities according to the local strengths in research. Depending on these each university will offer special so-called advanced modules which make the students acquainted with particular research areas. The students complete their studies with the preparation of a master thesis. If they study at two of the involved universities they shall be awarded a double master degree.

Apart from the Technische Universität Dresden and the Universidade Nova de Lisboa, the Technische Universität Wien has been won as additional partner. In a recent meeting in Lisbon on February 19-20 we realized that there are good chances to include also the Universidad Politecnica de Madrid and the Free University of Bozen-Bolzano as additional partners.

It is intended to start the integrated master program in the winter term 2004/5. More information can be found on the websites of the `International Master Program in Computational Logic' at TU Dresden: www.cl.inf.tu-dresden.de/compulog/ ❖

FP6, POLICY - EU research programs for dummies

European News

Researchers are skilled in the sciences but sometimes struggle with proposal writing for funds

© Source: European Commission Audiovisual Library

Despite the Commission's best efforts to explain its Sixth Framework Programme – the EU's main research funding mechanism – newcomers to the programme argue it is still confusing. Two new publications should help sharpen the focus of future funding applications.

Achilleas Mitsos, Director-General of Research at the European Commission, told delegates at a recent symposium in Ireland (Headlines 2 March) that the European Union tends to emphasise new structures rather than asking what these structures might do. Research managers, who routinely spend up to six months writing funding proposals, might agree with this conclusion.

So, with new calls for proposals underway in many priority research areas of the Sixth Framework Programme (FP6), the timing could not be better for two new publications aimed at helping scientists and their teams secure all-important funding. The first – 'Participating in European Research: Guide for Applicants in FP6' – is a re-release of an 85-page guide produced internally by the communications unit of the Commission's Research DG, which is responsible for managing FP6.

The second, published by an Irish consulting firm, is a 226-page handbook on 'How to Write a Competitive Proposal for Framework 6'. Sean McCarthy, author of the book and managing director of Hyperion, says the 12 chapters of the book are modelled on a one-day training course his company has presented to over 14 000 researchers across Europe.

Among the new material in the Commission's 'FP6 Guide' are updated contact details, new passages in the 'How projects are organised and funded', 'Evaluation of proposals' and 'Ethical review of successful proposals' sections. Divided into six chapters, the booklet covers the basics of FP6, explains who can take part in it and, in turn, how they should go about it, as well as giving examples of past research projects and scientific priorities under the scheme.

Some handy tips

Hyperion's guide also presents practical advice and follow-up information for submitting proposals under FP6. Through extensive – perhaps over – use of figures, it examines how the funding scheme works, in particular the priority research areas. However, its strength lies in its empirical origins. The content is based on a modular structure which has been designed for training purposes and evolved over the years, according to the author.

Having an excellent proposal is no guarantee of success, says McCarthy, because of a shortage of funds or too many proposals in the particular research area. One of the keys to successful proposal writing is being able to sum up the research in one page. "I am a big fan of short, succinct proposals," he says. "Good proposals have relevant, up-to-date facts and figures [and] bad proposals have only words." He also stresses the importance of including enlargement countries as consortium partners, and addressing their problems in the proposal.

Most importantly, the guide offers some genuinely handy pointers especially for "beginner" proposal writers but also for the community of service providers working with and for the European Commission, argues Paul McCallum, an EU consultant and journalist working in Brussels. "I've helped prepare a few proposals in my time and thought I knew a lot about it, but I read some tips in the guide that could make a real difference to even an experienced EU-player."

These guides aim to take the chore out of proposal writing. The updated guide from the Commission is scheduled for release in April and will be available free of charge, while Hyperion's – which was launched in

continued from page 1

January – will cost €130. But the main difference between the guides is that, while the Commission one describes 'what' needs to be done to file a successful FP6 proposal and gives pointers on 'how' to do it, the commercial one gives ideas on 'how' it could be done but also 'why'.

A third handbook, 'European RTD 2004 – Guide for the construction and real estate cluster', has been produced by the Finnish organisation Villa Real. This guide – costing €99 – promises successful proposal writing for FP6 projects in the construction and real estate sectors. ❖

COMBLOG '04 WORKSHOP ON COMBINATION OF LOGICS: THEORY AND APPLICATIONS

LISBON, PORTUGAL

2003, JULY 28-30

SUBMISSION DATE:: 2004, MAY 03

The workshop organized within the scope of the **FibLog project** of CLC aims to provide a forum for interaction and exchange of ideas among a limited number of participants in the general area of analysis and synthesis of logics and related topics:

- Different forms of composing and decomposing logics, such as fibring, fusion, splicing, splitting, synchronization and temporalization.
- Transference results between the whole and the component logics, such as preservation of completeness, interpolation properties and decidability.
- Application domains, such as security, software specification and verification, knowledge representation and formal ethics

of state-of-the-art QA systems shows) without being trivial, the QA task raises many important issues: what an appropriate response of the system should look like or whether it is always rational and natural from the user's point of view to look for single, correct and precise answer.

The problem of defining the notion of a "good" answer re-appeared in the invited talk by Jeroen Groenendijk. He described how interpretation of questions as partitions of a logical space of possibilities gives rise to different notions of entailment and answerhood, which have syntactic characterizations and are computationally attractive.

Apart from relations between questions and answers, the nature of relations inside the set of possible answers to the same question is another interesting and important research topic.

As Tiphaine Dalmas argued in her talk, careful handling of different types of these relations (two answers can be different correct answers, or re-formulations of each other, or one refinement of the other) can be very useful in the open-domain QA.

Domain-specific (e.g. medical) Question Answering has always attracted many researchers, due to availability of high-quality specialized resources and significant interest in these systems.

In his invited talk, Werner Ceusters presented strategies as well as open issues in using semantic ontologies in restricted domains. He showed that although the very definition of what "ontology" is, might need be revised to include individuals in addition to classes, in order for it to be useful in real information access systems, sophisticated manually created and semi-automatically updated ontologies are indispensable in domain-specific applications.

I'd like to thank the organizers, the program committee and, of course, the speakers for this inspiring and fruitful meeting. ❖

REWERSE - 6th Framework Programme

European News

Luis Moniz Pereira
New University of Lisbon

In the framework of its "6th Framework Programme" the EU Commission has decided to launch a research "Network of Excellence" on "Reasoning on the Web" entitled REWERSE (for REasoning on the WEb with Rules and SEmantics).

The objective of REWERSE is to strengthen Europe in the area of reasoning languages for Web systems and applications, especially Semantic Web systems and applications aiming at enriching the current Web with so-called intelligent capabilities for data and service retrieval, composition, and processing. REWERSE's research activities will be devoted to:

- "Rule markup languages" aiming at unified markup and tools for reasoning Web languages
- "Policy specification, composition, and conformance" aiming at user-friendly high-level specifications for complex Web systems
- "Composition and typing" aiming at methods and rules for Software interoperability in the Web context
- "Reasoning-aware querying" aiming at a query and transformation language for the Web with reasoning capabilities
- "Evolution and reactivity" aiming at specifying the evolution of Web-based data repositories
- "Web-based decision support for event, temporal, and geographical data" aiming at enhancing event, temporal, and location reasoning on the Web
- "Towards a Bioinformatics Semantic Web" aiming at adding semantics to the Bioinformatics Web
- "Personalized information systems" aiming at user-adapted Web information and teaching systems.

In addition, REWERSE will develop university education and training as well as technology transfer and awareness activities so as to spread excellence within its research field in Europe.
REWERSE involves 27 European research and industry organizations and about 100 computer science researchers and professionals playing key roles in applied reasoning. REWERSE is co-ordinated by the University of Munich (research group of the professors Fran?ois Bry and Hans J?rgen Ohlbach).

The EU Commission will support REWERSE with more than 5 Millions Euro over 4 years. REWERSE will start on March 1st, 2004. REWERSE's activities can be followed at **http://www.rewerse.net** . ❖

IJCAR 2004 - Second International Joint Conference on Automated Reasoning

Cork, Ireland
2004, July 4-8
http://4c.ucc.ie/ijcat

IJCAR 2004 is the Second International Joint Conference on Automated Reasoning (IJCAR) and is to be held in Cork, Ireland from July 4th to 8th, 2004. The first IJCAR was held in Siena, Italy, in late June 2001, merging CADE (Conference on Automated Deduction), FTP (Workshop on First-order Theorem Proving) and TABLEAUX (Conference on Analytic Tableaux and Related Methods). The second IJCAR will be a merger of CADE, FTP, TABLEAUX, FroCoS (Workshop on Frontiers of Combining Systems) and CALCULEMUS. Satellite workshops, tutorials and co-located events are expected.
Please note that the Woody Bledsoe Student Travel Award is intended to enable selected students to attend the International Joint Conference on Automated Reasoning (IJCAR) by covering much of their expenses.

ECAI 2004 Workshop - Agent-Mediated Knowledge Management (AMKM-04), August 22-27, 2004

Logic and multi-agent systems

Ludger van Elst
Universidad Politécnica de Valencia (Spain)

Deadlines & Submission Format

- Submission of papers 01. April 2004
- Author notification 01. May 2004
- Camera ready papers 01. June 2004

We invite the electronic submission of technical papers adhering to the ECAI main conference layout instructions which can be found at **http://www.dsic.upv.es/ecai2004/cfp/style/style.html**

Full papers should have a length of up to 10 pages and should be sent in PDF format by e-mail to **elst@dfki.de**.

Those interested in participating without a full paper should send a two-page extended abstract or statement of interest describing their AMKM-related work and areas of interest. Statements of interest may discuss work in any stage of development, from concepts and future directions up to finished work. Please use the full paper template also for preparing extended abstracts.

We explicitly invite system demonstrations which might be announced /accompanied by either a full paper or an extended abstract.

Motivation

Knowledge Management (KM) is a predominant trend in business in the recent years. It is not only an important field of application for AI and Semantic Web technologies, such as CBR for Intelligent Lessons Learned Systems, or Text Classification for Information Push services; it also provides new challenges to the AI community, like context-aware knowledge delivery.

Scaling-up research prototypes to real-world solutions usually requires an application-driven integration of several basic technologies, e.g., ontologies for knowledge sharing and reuse plus collaboration support like CSCW systems, and personalized information services. Typical characteristics of such an integration are:

- manifold logically and physically dispersed actors and knowledge sources,
- different degrees of formalization of knowledge,
- different kinds of (web-based) services and (legacy) systems,
- conflicts between local (individual) and global (group or
- organizational goals.

Agent technology has already been successfully employed for many partial solutions within the overall picture: Agent-based workflow, cooperative information gathering, intelligent information integration, or personal information agents, are established techniques in this area. In order to cope with the inherent complexity of a more comprehensive solution, the concept of Agent-mediated Knowledge Management (AMKM) deals with collective aspects in an attempt to cope with the conflict between desired order and actual behavior in dynamic environments.

AMKM introduces a social layer, which structures the society of agents by defining specific roles and possible interactions between them.

In this workshop we invite contributions which illustrate methodological, technical and application aspects of Agent-mediated Knowledge Management. Topics of interest include:

- Methodology for AMKM

  - Analysis and Design Methods for AMKM Systems
  - Relationship between AMKM and Agent-oriented Software Engineering
  - Relationship between AMKM and Business Engineering Methods

- Functionalities in AMKM Systems

  - Distributed Organizational Memories
  - Ontology Negotiation and Ontology Lifecycle Management
  - Agents for Group Formation and Awareness
  - Agents for Supporting Social Processes (Trust, Reputation)

- Agent-based Workflow in the KM Context
- Collaborative Information Retrieval
- Emergent Semantics and Pervasive Semantics

-Implementation of AMKM Systems

- Architectures and Platforms for Socially Enabled Agents
- Distributed KR&R for Socially Enabled Agents
- Semantic Web methods for AMKM
- User Modeling for Agent Mediated Social Processes
- Human-Computer Interaction in AMKM (Ontology Visualization, Web Design Guidelines for Knowledge Navigation, User Interfaces for KM)
- Practical application examples for (aspects of) AMKM systems

- Basic Research Questions for AMKM

- Benefits and reasons for the application of the agent paradigm to KM
- Organizational implications of agent use in KM (e.g., with respect to risks and responsibilities)
- Formal models for AMKM
- Relationships to other research paradigms like P2P or Grid computing, Semantic Web and Semantic Web Services, or mobile computing and mobile KM
- Evaluation of KM and AMKM systems

Predecessor Event

The first AMKM workshop (AMKM-2003) was organized as a AAAI Spring Symposium at Stanford University. Revised and additional papers (including an introduction / overview on AMKM) are available as Volume 2926 of the Springer LNAI Series.

Workshop Organizers

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A PhD Summer School

Formal methods specification and verification

Martin Henson
University of Essex

CoLogNET is supporting an exciting PhD Summer School in June 2004 on the subject of Logics of Specification Languages. The idea for this grew out of two recent issues of the journal Computing and Informatics last year (Volume 22, No. 3 and Volume 22, No. 4) which contain a number of invited articles concerning logics and foundations of the major formal specification languages for software systems. The authors of these papers, leading authorities in logics for nine such languages, will each be presenting an extended lecture series during this two-week summer school. The aim is to educate PhD students, young researchers and academics in an intensive but stimulating program of teaching events.

The School will be taking place in the Congress Centre Academia in Stara Lesna, Slovakia. The centre is situated at the foot of the Lomnicky peak in the eastern part of the Vysoke Tatry Mountains, close to the Tatra National Park, and in quiet surroundings. It should be an ideal and beautiful location for a most interesting meeting.

The timing and the location of this Summer School is no coincidence: in May 10 more countries: Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia and Slovenia, join the European Union. It is anticipated and hoped that students and researchers from all these countries will attend.

Each of the nine lecture series will feature five 70 minute lectures. The full program and the tutors are as follows:

- "The Expressive Power of Abstract-State Machines", Wolfgang Reisig, Humboldt-Universität zu Berlin, Germany
- "Foundations of the B method", Dominique Mery, Université Henri Poincaré, France
- "CafeOBJ: Logical Foundations and Methodologies", Razvan Diaconescu, Institute of Mathematics of the Romanian Academy, Romania
- "CASL - The Common Algebraic Specification Language: language, semantics, proof calculus, tools", Till Mossakowski, University of Bremen, Germany
- "Duration Calculus: A formal approach to real-time systems", Michael R. Hansen, Technical University of Denmark, Denmark
- "The Logic of the RAISE Specification Language", Chris George, United Nations University, Macau
- "Specifying Systems in TLA+", Stephan Merz, INRIA Lorraine, France
- "VDM in theory and practice", John Fitzgerald, University of Newcastle, United Kingdom
- "Z logic: applications and consequences", Steve Reeves, University of Waikato, New Zealand.

The School is being organized by Profs Dines Bjorner (DTU, Denmark), Martin Henson (Essex, UK) and Branislav Rovan (Comenius University, Slovakia) and will be held between the 6th and 19th of June; further details, and the application form, can be found at **http://cswww.essex.ac.uk/staff/henson/sssl**. Enquiries should be sent to Dusan Guller: **guller@fmph.uniba.sk**." ❖

AISC2004 - 7th International Conference on Artiicial Intelligence and Symbolic Computation

Hagenberg, Austria
September 22-24,2004
Submission Date: 2004, May 1
http://www.risc.uni-linz.ac.at/conferences/aisc2004/

Artificial Intelligence and Symbolic Computation are two views and approaches for automating problem solving, in particular mathematical problem solving. The two approaches are based on heuristics and on mathematical algorithmics, respectively. Artificial Intelligence can be applied to Symbolic Computation and Symbolic Computation can be applied to Artificial Intelligence. Hence, a wealth of challenges, ideas, theoretical insights and results, methods and algorithms arise in the interaction of the two fields and research communities. Advanced tools of software technology and system design are needed and a broad spectrum of applications is possible by the combined problem solving power of the two fields.

Giving a voice to science in Europe

European News

Source: European commission web site

Following much deliberation, Euroscience – an association of science stakeholders – has announced the scientific themes for its 2004 Open Forum, from which many parallels can be drawn with the research priorities under FP6.

Spreading the science message far and wide
© Source: PhotoDisc

Since 1997, Euroscience has been stoking the fires of science and technology (S&T) debate. Through its activities, this association – comprising 1 500 members in 40 European countries – strives to strengthen the links between science and society, with a view to creating an “integrated space” for S&T. Through its activities, such as the annual EuroScience Open Forum (ESOF), it seeks to give a voice to the wide range of actors involved in planning, administering and carrying out scientific research in all its forms, including the social sciences. Among those taking part are science professionals, teachers, PhD students, post-docs, engineers, industrialists, policy-makers from local to EU levels, and pretty much anyone interested in S&T and its role in society.

Euroscience organizes workshops, conferences, regional initiatives, awards and the Open Forum on a range of subjects – such as the future of young scientists and European science collaboration and integration – which actually reinforce similar initiatives in the EU's Science and Society program; namely ‘science and governance', ‘ethics' and ‘youth and science'.

What and when

Around 250 speakers – including Nobel laureates, top science advisors and Research Commissioner Philippe Busquin – are expected at the 2004 ESOF, which will take place in Stockholm (SE) from 25-28 August. Euroscience has distilled some 250 proposed topic areas into 49 sessions tackling a broad range of scientific challenges.

These sessions are divided into 17 broad themes: ageing and demography, climate and environment change, communicating science, dealing with risk, emerging technologies, energy, evolution of life, health, human brains, humanity and space, knowledge in society, mind and behavior, nanoscience and nanotechnology, science and ethics, science and arts, science policy in Europe, and transformations of cultures.

Many of these topics resonate with the thematic priorities under the EU's Sixth Framework Program (FP6) for research, thus offering an excellent opportunity to stimulate debate on the Union's research and development policy objectives. In addition, ESOF is taking its science message to the public through a parallel activity called ‘Science in the city', taking place in museums, parks and culture centers around Sweden's capital. Registrations for the event start this month. ❖

Visit The Newsletter Web Site

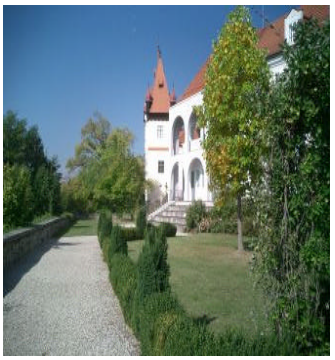
For further information on CoLogNET’s news visit our web site at www2.cs.ucy.ac.cy/projects/colognet

AISC 2004 - 7th International Conference on Artiicial Intelligence and Symbolic Computation (September 22-24, 2004), Hagenberg, Austria

Theory, Implementations and Applications

Bruno Buchberger.
University of Linz, Austria

ABOUT THIS CONFERENCE SERIES



Conferences in this series are held every two years. The previous six ones took place in **Karlsruhe** (Germany), **Cambridge** (United Kingdom), **Steyr** (Austria), **Plattsburgh** (USA), **Madrid** (Spain), and **Marseille** (France); the first three under the name "Artificial Intelligence and Symbolic Mathematical Computing (AISMC)". The conference in the year 2004 will be held at RISC in the Castle of Hagenberg, Austria.

SCOPE

Artificial Intelligence and Symbolic Computation are two views and approaches for automating problem solving, in particular mathematical problem solving. The two approaches are based on heuristics and on mathematical algorithmics, respectively. Artificial Intelligence can be applied to Symbolic Computation and Symbolic Computation can be applied to Artificial Intelligence. Hence, a wealth of challenges, ideas, theoretical insights and results, methods and algorithms arise in the interaction of the two fields and research communities. Advanced tools of software technology and system design are needed and a broad spectrum of applications is possible by the combined problem solving power of the two fields.

Hence, the conference is in the center of interest and interaction for various research communities:

- artificial intelligence,
- symbolic computation,
- computer algebra,
- automated theorem proving,
- automated reasoning,
- formal mathematics,
- mathematical knowledge management,
- algorithmic invention and learning,
- logic,
- software technology,
- language and system design,
- implementation and performance issues,
- semantic web technology,
- computer-based math teaching and didactics,
- computer-supported publishing,
- language and system design,
- implementation and performance issues,
- any topics related to the above.

We encourage researchers working in any of these fields to share their views, work, and results by submitting papers and taking part in the conference.

INVITED SPEAKERS

- **Alan Bundy** (University of Edinburgh, UK)
- **Markus Rosenkranz** (University of Linz, RISC, Austria)
- **Helmut Schwichtenberg** (University of Munich, Germany)
- **Zbigniew Stachniak** (York University, Canada)

IMPORTANT DATES

Papers

May 1: Submission of papers

Jun 20: Notification of acceptance/rejection
Jul 31: Submission of final camera-ready version

Electronic paper submission

Also, please, use the possibility to pre-announce your intention to submit a paper at **http://www.risc.uni-linz.ac.at/conferences/aisc2004/submission.html**

Registration

Aug 1: Early registration deadline
Sep 15: Late registration deadline
We encourage participants not to wait with registration until the late registration deadline because hotel reservation may be difficult on short notice.

Conference Days

Wednesday, 22 September - Friday, 24 September

Proceedings

The proceedings of the conference containing the refereed and accepted papers will appear as a volume of the Springer Lecture Notes in Artificial Intelligence.

AISC Committee

- General Chair: Bruno Buchberger
- Program Committee Chair: John Campbell
- Proceedings Editors: John Campbell and Jacques Calmet

Program Committee*:*

Luigia Carlucci Aiello (University of Rome ``La Sapienza", Italy)
Michael Beeson (San Jose State University, USA)
Belaid Benhamou (University of Provence, France)
Bruno Buchberger (University of Linz, RISC, Austria)
Jacques Calmet (University of Karlsruhe, Germany)
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James Davenport (University of Bath, UK)
William Farmer (McMaster University, Canada)
Jacques Fleuriot (University of Edinburgh, UK)
Laurent Henocque (LSIS - Laboratory for the Sciences of Information and Systems, France)
Tetsuo Ida (University of Tsukuba, Japan)
Michael Kohlhase (International University Bremen, Germany)
Erica Melis (DFKI, Saarbrücken, Germany)
Aart Middeldorp (University of Innsbruck, Austria)
Eric Monfroy (University of Nantes, France)
Steve Linton (University of St. Andrews, UK)
John Perram (University of Southern Denmark, Denmark)
Jochen Pfalzgraf (University of Salzburg, Austria)
Zbigniew Ras (University of North Carolina, USA)
Tomas Recio (University of Cantabria, Spain)
Eugenio Roanes Lozano (Universidad Complutense de Madrid, Spain)
Jörg Siekmann (University of Saarland and DFKI, Saarbrücken, Germany)
Volker Sorge (University of Birmingham, UK)
John Stell (University of Leeds, UK)
Carolyn Talcott (SRI, Menlo Park, USA)
Dongming Wang (University Paris VI, France)
Wolfgang Windsteiger (University of Linz, RISC, Austria)

LOCAL ORGANIZATION

Local Organization: Betina Curtis

Web Site and Publicity:
Koji Nakagawa
Florina Piroi
Camelia Kocsis

You can write us using the following e-mail address:
aisc2004@risc.uni-linz.ac.at

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RELATED CONFERENCES

- **Automated Software Engineering - ASE 2004** September 20 - 25, 2004, Johannes Kepler University in Linz, Austria.
- **Mathematical Knowledge Management - MKM 2004** September 19 - 21, 2004, Bialowieza, Poland. ❖

Report of a study stay

Education

Peter Novák, and Martin Baláž
Comenius University, Bratislava, Slovak Republic

Dear Madame/Sir,

We are Peter Novák, and Martin Baláž, currently PhD. students at Faculty of Mathematics, Physics and Informatics of Comenius University, Bratislava, Slovak Republic. In the September 2003 we applied to CologNET for a financial support for the 3-months study stay at Center of Artificial Intelligence of Faculty of Sciences and Technology at New University of Lisbon, Portugal. This is the report of the content of the already mentioned study stay.

In the following we enclose additional information about the study stay:

Name of the applicant:	Peter Novák
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Name of the applicant:	Martin Baláž
Citizenship of the applicant:	Slovak
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Phone:	++421-904-421 709
Postal address:	Nálepkova 15 949 01 Nitra Slovak Republic
Duration of the stay:	1st October 2003 - 19th December 2003
Home node:	Institute of Informatics, Faculy of Mathematics, Physics and Informatics, Comenius University, Bratislava
Host node:	CENTRIA, Faculty of Sciences and Technology, New University of Lisbon, Portugal

Report

Goals

According to our application for the financial support from CologNET, our primary goal was to deepen our knowledge and understanding of logic programming issues with regard to projects being under the development at CENTRIA.

Project

After our arrival to Lisbon it was decided that our stay will be divided into two stages.

The first part was focused on deepening our knowledge of programming in Prolog systems, particularly SWI Prolog and XSB Prolog. During this part of the stay we worked under the supervision of prof. Carlos Viegas Damásio and prof. Jose Alferes. The time spent on exercises and problems given to us by our supervisors was very fruitful and we felt, that we gained a good experience in Standard Prolog programming. Later, from November until the end of the stay we joined the project W4, led by prof. Damásio, which aims at developing the tools and libraries for semantic web tasks and issues implemented in Standard Prolog environment (details of the W4 project can be found at http://centria.di.fct.unl.pt/~cd/projectos/w4). We worked mainly on various improvements of non-validating XML 1.0 parser. During this part of the stay we gained a lot of experience with issues arising from XML 1.0/1.1 specification. Because these topics were completely new to us, we consider this part of the stay as the most valuable and interesting.

Results and future plans

As we already mentioned above, in CENTRIA we received a good education and a lot of valuable insights into the topics of logic programming. During the stay we joined a W4 project, which we consider to be very interesting for us and quite important in the context of activities of semantic web community. In CENTRIA we met nice people who are together in fact a hard-working team. During the stay we built a basis for future projects, which we hope, will be developed in the close cooperation between our two nodes. As far as our future plans, we plan to continue to participate on activities in the context of W4 project. ❖

FQAS 2004

6th International Conference On Flexible Query Answering Systems, University Claude Bernard of Lyon, France, June 24-26 2004

FQAS is the premier conference for researchers and practitioners concerned with the vital necessity to provide easy, flexible, and intuitive access to information for every type of need. This multidisciplinary conference draws on several research areas, including databases, information retrieval, knowledge representation, soft computing, multimedia, and human-computer interaction. Held every two years, the conference provides a medium for exchanging scientific research and technological achievements accomplished by the international community. The previous events were held in Roskilde, Warsaw, and Copenhagen.

Invited Speakers

- Serge Abiteboul, INRIA France
- Yuzuru Tanaka, Hokkaido University Japan

Overall Theme and Topics of Interest

The overall theme of the FQAS conferences is innovative query systems aimed at providing easy, flexible and intuitive access to information. Such systems are intended to facilitate retrieval from information repositories such as databases, libraries, and the World Wide Web. These repositories are typically equipped with standard query systems, which are often inadequate, and the focus of FQAS is the development of query systems that are more expressive, informative, cooperative and productive. This conference is intended to attract individuals who are actively engaged both in theoretical and practical aspects of flexible, intelligent and intuitive access to information. The goal is to provide a platform for a useful exchange between theoreticians and practitioners, and to foster the cross-fertilization of ideas in the following areas:

- Database Management
- Information Retrieval
- Domain Modeling, Knowledge Representation and Ontologies
- Knowledge Discovery and Data Mining
- Artificial Intelligence
- Classical and Non-Classical Logics
- Computational Linguistics and Natural Language Processing
- Multimedia Information Systems
- Human-Computer Interaction

The conference is interested in papers in all areas of research related to its theme, including formal models, algorithms, applications, and experiments. In addition, we solicit papers dealing with Applications of flexible access to information in complex/novel domains, e.g. human genome, global change, manufacturing, health care, etc.

Submission Information

FQAS 2004 submissions generally must be in electronic form using the Portable Document Format (PDF) or Postscript and should be done through the FQAS 2004 web site: http://www.fqas2004.org Electronic abstract submission is required. The lenght of the paper must not exceed 12 pages (simple-spaced pages). Details on the submission process are available at **http://www.fqas2004.org**.

The FQAS 2004 proceedings will appear in Springer's Lecture Notes in Artificial Intelligence (LNAI) series. Author instructions for preparing the submission and the camera ready can be found at **http://www.springer.de/comp/lncs/authors.html**. At least one author should attend the conference to present the paper.

Important Dates

- Abstract submission: January 6, 2004
- Paper submission: January 12, 2004
- Notification: February 18, 2004
- Camera ready submission: March 20, 2004

A selected number of FQAS 2004 accepted papers will be expanded and revised for possible inclusion in **Journal of Intelligent Information Systems** by Kluwer, **Information Processing & Management**. ❖

Report of participation in an ongoing study

Logical foundations, methodology and dissemination of new logics

Alexey Romanov

Faculty of Mathematics and Mechanics, Moscow State University, Russia

Goals

According to the application for the financial support from CologNET, my primary goal was to participate in the ongoing study in the area of quantified non-classical logics which is a part of the long lasting cooperation between scientists from London and Moscow.

Project

It was decided that I join the scientific and editorial work on the book "Quantification in Non-classical logics" by D. Gabbay, V. Shehtman, D. Skvorstov together with my supervisor Prof. Valentin Shehtman (Moscow State Univeristy) who was visiting King's College London at the same time.

This work is closely related to my previous research in the field on interpretations of modal logic languages in classical languages and to the program of my PhD studies at Moscow University.

Results and future plans

One of the results of the visit was understanding the virtue of classical model theory for non-classical quantification. Basing on this connection, I could find a new simpler proof of Ono-Skvortsov's theorem on countable models (Chapter 3 of the book). I also succeeded in a better presentation of the results by Suzuki on algebraic sheaf models.

It was a great pleasure to work in a Group of Logic and Computation at King's College London headed by Prof. Dov Gabbay. During my visit, I also attended the Group seminar and learned much on other areas of computational logic, such as Many-dimensional modal logic, Nonmonotonic logic and others.

As for the future plans, it was agreed that I continue the work on nonclassical quantifiers in Moscow, together with some editorial work on the above-mentioned book. Depending on the future results, there might be a perspective of another visit in summer 2004.

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Duration of the stay:	29 th November 2003 - 15th December 2003
Home node:	Faculty of Mathematics and Mechanics, Moscow State University, Russia.
Host node:	Department of Computer Science, King's College London, UK❖

Calendar of Events

FQAS 2004 - Sixth International Conference on Flexible Query Answering Systems

Lyon, France
2004, June 24-26
http://www.fqas2004.org/

FQAS is the premier conference for researchers and practitioners concerned with the vital necessity to provide easy, flexible, and intuitive access to information for every type of need. This multidisciplinary conference draws on several research areas, including databases, information retrieval, knowledge representation, soft computing, multimedia, and human-computer interaction. Held every two years, the conference provides a medium for exchanging scientific research and technological achievements accomplished by the international community. The previous events were held in Roskilde, Warsaw, and Copenhagen

CombLog '04 Workshop on Combination of Logics: Theory and Applications

Lisbon, Portugal
2003, July 28-30
Submission Date:: 2004, May 03
The workshop organized within the scope of the **FibLog project** of CLC aims to provide a forum for interaction and exchange of ideas among a limited number of participants in the general area of analysis and synthesis of logics and related topics:

- Different forms of composing and decomposing logics, such as fibring, fusion, splicing, splitting, synchronization and temporalization.

- Transference results between the whole and the component logics, such as preservation of completeness, interpolation properties and decidability.

- Application domains, such as security, software specification and verification, knowledge representation and formal ethics

IJCAR 2004 - Second International Joint Conference on Automated Reasoning

Cork, Ireland
2004, July 4-8
http://4c.ucc.ie/ijcat

IJCAR 2004 is the Second International Joint Conference on Automated Reasoning (IJCAR) and is to be held in Cork, Ireland from July 4th to 8th, 2004. The first IJCAR was held in Siena, Italy, in late June 2001, merging CADE (Conference on Automated Deduction), FTP (Workshop on First-order Theorem Proving) and TABLEAUX (Conference on Analytic Tableaux and Related Methods). The second IJCAR will be a merger of CADE, FTP, TABLEAUX, FroCoS (Workshop on Frontiers of Combining Systems) and CALCULEMUS. Satellite workshops, tutorials and co-located events are expected.
Please note that the Woody Bledsoe Student Travel Award is intended to enable selected students to attend the International Joint Conference on Automated Reasoning (IJCAR) by covering much of their expenses.

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