

4C News

" Making Hard Choices Easier "

www.4c.ucc.ie

Winter 2005, Issue 2



New EU Project for SMEs

4C has received funding as a participant in a new European Union project on Enterprise Modelling and Performance Optimisation. This is a Specific Targeted Research Project (STREP), under the Co-operative research programme CRAFT that supports small to medium-sized enterprises (SMEs) with a capacity to innovate but without their own research facilities: a number of SMEs from different countries with particular R&D problems or needs assign a significant part of the research activities to R&D 'performers', such as universities and research centres.

The project is led by Dr. Con Sheehan at the University of Limerick; the PI at 4C is Dr. James Little. Other participants in the project include: Aalborg University (Denmark), University of Karlova (Czech Republic), University Duisberg-Essen, Furniture Industry

Research Association (UK), Nexedi SARL (France)—open source ERP software, ManOPT Systems Ltd (Ireland)—business and manufacturing software, Burnside Eurocyl Ltd (Ireland)—manufacturer of hydraulic cylinders, Tippo International Ltd (Ireland)—wood technology company, Dolle AS (Denmark)—modular staircases, Blueline (UK)—manufacturer of office furniture.

The objective of the project is to develop an integrated Enterprise Modelling and Performance Optimisation tool for SMEs. This decision support tool will take an enterprise model and transform it into an optimisation model. From this, a scheduling engine will run and identify the risks/rewards of the enterprise in terms of its key performance indicators.

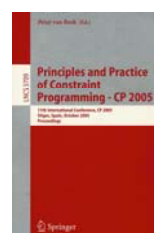
- James Little

Inside this issue:

New EU Project for SME's	1
Best Paper Award for Barbara Smith and Karen Petrie	1
Barry O'Sullivan Elected ACP Executive Committee Member	1
4C Director Honoured	2
Inês Lynce Visits 4C	2
4C Establishes Advisory Board	3
4C Participates in ACP Summer School	4
Brief News	4

Best Paper Award

Barbara Smith and Karen Petrie of 4C have won one of the two best paper awards for the 2005 International Conference on Principles and Practice of Constraint Programming. They won the award for their paper *Symmetry Definitions for Constraint Satisfaction Problems*, co-authored with David Cohen, Peter Jeavons, and Chris Jefferson.



ACP Election

Barry O'Sullivan, Associate Director of 4C, has been elected a member of the Executive Committee of the Association for Constraint Programming (ACP). Two members are elected each year to this ten person committee by the international membership of the Association. The ACP promotes constraint programming with a variety of activities, including the organization of the annual International Conference on Principles and Practice of Constraint Programming. Dr. O'Sullivan has also been selected as Conference Coordinator.



4C Director Honoured

Professor Eugene Freuder, Director of the Cork Constraint Computation Centre, received several honours recently in recognition of the excellence of his contributions to the field of constraint satisfaction and artificial intelligence.

In October, at the 2005 International Conference on Constraint Programming, a special honour session was arranged to celebrate Professor Freuder's 60th birthday. Several guests gave short statements of both a professional and personal nature, while others sent messages that were read out on their behalf. Present to give their statements were Professor Peter van Beek (University of Waterloo, Canada), Professor David Waltz (Columbia University, USA) and Dr. Barry O'Sullivan (4C, Ireland). Other statements were read from Professor Boi Faltings (Swiss Federal Institute of Technology, Switzerland), Professor Alan Mackworth (University of British Columbia, Canada) and Professor Patrick Winston (Massachusetts Institute of Technology, USA). Professor van Beek, the editor-in-chief of the *Constraints* journal also announced that an issue of the journal will be dedicated to Professor Freuder in 2006. Professor Freuder was the founding editor-in-chief of this journal.



Professor Freuder receiving the ACP Research Excellence Award from Professor Rossi at the CP-2005 Conference in Spain.

In 2005 the Association of Constraint Programming (ACP) created a Research Excellence Award, which will be awarded on an annual basis. For the inaugural ACP Research Excellence Award, the ACP Executive Committee decided to honour Professor Freuder for "a program of pioneering and sustained research in constraint programming of consistent high quality yielding many substantial and significant results." Professor Francesca Rossi (University of Padova, Italy), the current President of the Association of Constraint Programming, presented Professor Freuder with the award at the Constraint Programming Conference.



Also in October, Professor Freuder was elected a Fellow of the American Association for the Advancement of Science (AAAS). AAAS is an international non-profit organization dedicated to advancing science around the world. Founded

in 1848, AAAS serves some 262 affiliated societies and academies of science, serving 10 million individuals. The 2005 AAAS Fellows were announced in the 28 October issue of the AAAS journal *Science*. *Science* has the largest paid circulation of any peer-reviewed general science journal in the world, with an estimated total readership of one million.

Each year the AAAS Council elects members whose "efforts on behalf of the advancement of science or its applications are scientifically or socially distinguished." Professor Freuder was honoured for "fundamental and sustained contributions to constraint-based reasoning in artificial intelligence, for service to the constraint programming community, and for the advancement of Irish computer science."

After learning of the AAAS election, Professor Freuder commented: "I am very honoured to be selected as a Fellow of such a distinguished organisation as AAAS. I would like to take this occasion to acknowledge the many individuals, agencies, and companies that have supported my work, and in particular to acknowledge the support I have received in Ireland from my colleagues at the Cork Constraint Computation Centre, and from Science Foundation Ireland, Enterprise Ireland, and the Embark Initiative."

- Barry O'Sullivan

Associate Director of 4C

Inês Lynce Visits 4C



Inês Lynce
Assistant Professor
Computer Engineering at
Instituto Superior Tecnico
Lisbon, Portugal

I first heard about 4C while attending the CP2001 conference and became impressed with the dynamics of 4C, though it was just a seed of what would become a very successful research group. Since then I have always regarded a visit to 4C as an excellent opportunity to interact with a very strong constraint programming group. I have now stayed here for two and a half months and never in the past worked with so many people doing research in the same area. My PhD work has mainly focused on propositional satisfiability: algorithms, techniques and applications. Now it is time to move on and bridging the gap between CSP and SAT appears as a very challenging goal to pursue. Both subjects have been successful in efficiently solving real world applications and therefore CSP and SAT communities should learn from each other. I am currently working with Dr. Steve Prestwich, who has a great experience on this topic. Nevertheless, I am impressed that every 4C member is interested in exchanging their experiences and give their own insights on my research work.

- Inês Lynce

4C Establishes Advisory Board

Members:

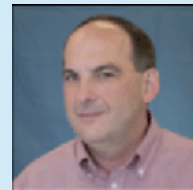
Nader Azarmi: Head of the the Intelligent Systems Research Centre, BT Group, Research & Venturing, British Telecommunications, winner of the INFORMS Franz Edelman medal and the Silver Medal of the Royal Academy of Engineering



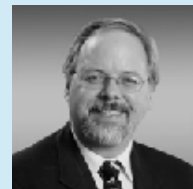
Dermot Berkery: General Partner in venture capital firm Delta Partners, serves on the board of Similarity Systems, Seewhy Software and Sensl, former Senior Manager with McKinsey & Co.



Ken Ford: Director of the Florida Institute for Human & Machine Cognition, member of the U.S. National Science Board, member of the Board of Directors of itFlorida.com, former Director of NASA's Center of Excellence in Information Technology, Emeritus Editor-in-Chief of AAAI/MIT Press



Michael Trick: Bosch Professor at Carnegie Mellon's Tepper School of Business and President of the Carnegie Bosch Institute for Applied Studies in International Management, past president of INFORMS, the Institute for Operations Research and the Management Sciences, and currently the Vice President/North America for the International Federation of Operational Research Societies



David Waltz: Director, Center for Computational Learning Systems, Columbia University, past president of the American Association for Artificial Intelligence and past president of NEC Research Institute



Caroline Wardle: Senior Science Advisor, U.S. National Science Foundation, formerly deputy division director of the Computer and Computation Research Division, former Chair of the Boston University Department of Computer Science and Dean of the Wang Institute of Graduate Studies, winner of the Computing Research Association A. Nico Habermann Award





"Making Hard Choices Easier"

4C Participates in The First ACP Constraint Programming Summer School

The First International Summer School on Constraint Programming was held in September 2005 in Acquafredda di Maratea, a small town in the south of Italy. At the School, there were six lecturers, each giving four hours of lectures. My topic was 'Modelling for Constraint Programming'. It was run by the Association for Constraint Programming (ACP), and it is planned that this will be the first in a series of annual summer schools, alternating between a general summer school, covering most areas of constraint programming, and an advanced school focussing on one specific area of constraint programming. The general summer schools, like the one in 2005, will be aimed at PhD students, while the alternating summer schools will also be useful for experienced researchers in the field.

- Barbara Smith



Group photo from the Summer School

This Summer School was a great opportunity for us PhD students to advance our knowledge; not only could we attend the lectures and engage in stimulating conversations with other students, but also the lecturers were available to answer questions and participate in discussions after the classes.

The School took place in a very relaxed atmosphere, from a terrace with a wonderful sea view surrounded by green mountains. Just below the terrace we could see trains running on a high old stone bridge. It was a very fruitful event for our growth as researchers and an unforgettable experience that makes us feel part of the CP community. I am already looking forward to attending the next one!

- Stefania Verachi

Brief News

- ♦ Barry O'Sullivan and Alan Holland have received an Enterprise Ireland Proof of Concept Commercialisation Fund grant; they will develop a prototype of an auction system for the property sector.
- ♦ Steve Prestwich, Nic Wilson, and Karen Petrie won two of three runner-up positions for their papers submitted for the Constraint Modelling Challenge at IJCAI 2005.
- ♦ Ken Brown and David Burke led 4C into the quarter-finals in their first year of participation in the Trading Agents Competition in Supply Chain Management.
- ♦ Roman van der Krogt has been awarded an Embark Initiative Postdoctoral Fellowship to work with Ken Brown.
- ♦ David Stynes has been awarded a Microsoft-sponsored Embark Initiative Postgraduate Research Scholarship to work with Ken Brown.
- ♦ Barry O'Sullivan has been awarded a travel grant from Enterprise Ireland's Ulysses program to work with Narendra Jussien in France.
- ♦ 4C welcomes two new members of staff: Fred Spiessens and ER-CIM Fellow Andras Kovacs.

Editors:

Eleanor O'Riordan
Christina Offutt
Tomas Eric Nordlander

Cork Constraint Computation Centre,
University College Cork
Cork
Ireland

Phone: +353 (0)21 4255400
Fax: +353 (0)21 4255424
E-mail: editor@4c.ucc.ie
Webpage: 4c.ucc.ie