

## NZCSRSC 2008

### The Sixth NZ Computer Science Research Student Conference, Christchurch 2008

The sound of bagpipes signified the start of this weeklong, immersive conference. From the opening ceremony on Monday to the goodbyes on Friday – it was a packed and exhilarating week! Run by students for students, it was a week full of events focused on the needs of postgraduate NZ ICT students. The Deputy Mayor of Christchurch **Norm Withers** welcomed the 135 participants (about 110 students) from all eight universities to the Garden City, the ICT hub of New Zealand. Pro Vice Chancellor (UC) **Peter Jackson** opened the NZCSRSC 2008, motivating students to participate and engage as much as possible over the week. The Father of the NZCSRSC **Ian Witten**, and Dr. **Darin Graham** (Director, NZi3) talked about the NZCSRSC, the ICT students, and the state of the ICT world today. After the opening ceremony, **Tony Dale** (BlueFern) gave a presentation of the world-class supercomputing available here, followed by tours of the UC supercomputer facility.

Over the next few days there were five student presentation sessions featuring 26 paper presentations and a poster session with 24 poster talks, showcasing the high quality, diverse, cutting-edge research produced here in NZ. Congratulations to **Shaoqun Wu** and **Edmond Zhang** for winning the best presentation and best poster awards respectively. These were presented by University of Canterbury Vice Chancellor **Roy Sharp** at the closing ceremony.

There were four inspiring keynote speakers. Businessperson and public speaker **Martz Witty** entertained and educated the participants on presentation and social networking skills. **Edwin Dando** (CEO, Clarus) encouraged participants to ‘*Strive for Excellence*’, combining his story of success with practical software engineering and quality management principles. **Dave Lane** (CEO, Egressive) in his talk ‘*The Open Road; Doing the Right Thing and Making a Living*’ brought in the aspects of open source, open standards, ethics, and values in the ICT world. **David Park** (CEO, Geospatial Research Centre) in ‘*Be confident in who you are and what you do*’ combined practical words of wisdom illustrating them with examples from his life and the various projects he has managed.

Experts engaged in active discussion with participants on topics affecting an ICT student’s *Present* and *Future* skills, in eight workshop topics. Students were able to discuss the reality of life in industry (e.g. risk management, agile processes etc) in seven casual and interactive chalk’n’talk sessions with software developers.

The social night allowed participants to mingle and make contacts over a delicious BBQ to the sounds of a live Jazz band.

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We also had the traditional “**Ian Witten** and **Tim Bell** music session”, this time with **Gian Perrone**. This was followed by the Comedy Night at the Ngaio Marsh, which included performances from the Court Jesters and the Aranui Theatre Company.

The industry event was another time of building social networks. After the dinner and sponsors’ talks, students were able to mingle with industry reps (HR and technical) from local industry at the Human Interfaces Technology (HIT) Lab at UC. This also included playing around on many of the cool demos displayed.

Over 40 people participated in the CSUnplugged Workshop, aimed at promoting the innovative, internationally renowned CSUnplugged educational concept throughout NZ. CSUnplugged is a home-grown initiative, started by **Tim Bell** that teaches computing concepts to school kids without the use of a computer. The workshop included seminars, ‘real-live’ demonstrations with students from Chisnallwood Intermediate School, and hands-on sessions.

We’re grateful to all those who helped in the organising and running of this conference including the local contacts, ICT departments, authors (reviewers), supporters, and volunteers. Special thanks go to the premium sponsors: BuildIT, NZi3, Orion Health, and the University of Canterbury.

*Moffat Mathews*

General Chair

On behalf of the NZCSRSC 2008 Organising Committee

More info: <http://nzcsrsc08.canterbury.ac.nz>

..... and what a great conference it was. Our entire community owes a huge debt to **Moffat Mathews and his team** from the University of Canterbury for organizing such a wonderful event with unparalleled energy and grace. It was

extremely heartening to see such a large group of young and active NZ Computer Science researchers come together for work — and play. On behalf of all us attendees, I would like to say that it was a privilege to have had the opportunity to participate in this conference, and I would like to pass on from all of us a great big thank-you to the team who organized it.

*Ian H. Witten*

## NZ CSRSC 2009?

Planning is underway to explore the possibility of the University of Auckland hosting the next NZCSRSC. Auckland students are motivated by the great success of the previous two conferences held at the University of Waikato and the University of Canterbury.

The students are inspired by the conferences' high quality presentations, exciting keynotes, informative workshops and the wonderful opportunities they had to meet fellow researchers. Currently a team of bright eyed and eager organisers are working on a feasibility study to determine whether UoA NZCSRSC '09 can become a reality.

*Rachel Blagojevic & Carl Schultz*

## BuildIT, Building research capability: 2008 Contestable Funding

BuildIT's task is to grow and strengthen the ICT research community in New Zealand. This initiative focuses on the development of young and emerging researchers to ensure a solid basis for the future of ICT research. Running from 2008 through to the middle of 2010 it comprises a range of contestable funding opportunities aimed at developing PBRF recognised strengths in ICT. BuildIT recognises that the short research history of Computer Science, in the context of the phenomenal growth in the discipline, has had a negative impact on the research capability of the discipline. To address this and guarantee the research strength of the discipline for decades to come it is focusing on gaps in support for areas such as postdocs, PhD scholarships, and travel funding for new and emerging researchers.

### PhD scholarships

Scholarships are available for excellent students looking to undertake a PhD. These scholarships are for three years and provide \$21,000 per annum to the recipient. We welcome international applicants for these scholarships as well as local candidates.

### Postdocs awards

A number of two-year postdoc positions are available to attract top young researches to work in active ICT research groups. \$58,000 per annum awards are made to either an individual or a research group.

## Travel fund for early career researchers

Academics who have completed their PhD within the past five years, or are within five years of the start of their research career, can apply for up to \$4,500 for international conference attendance, or \$1,500 for Australasian conferences.

## Travel fund for PhD students

PhD students may apply for conference travel support for an accepted conference paper. Up to \$4,000 will be allocated to an accepted application.

## Travel fund for research consortia development

National travel costs to bring together a proposed research consortia to explore funding opportunities is available on a quarterly basis. Up to three national airfares can be supported in an application.

## Research publicity prizes

A \$1,000 prize will be awarded annually to a researcher, or research group, for the top ICT research publicity in each of the categories of: pure research; industry-based research; and education.

Applications forms and criteria can be found at:  
<http://buildit.csi.ac.nz>

## Otago CS

### News

#### Anniversary

Preparations are under way to celebrate the department's 25th anniversary in 2009.

#### Conference

The Department's Theory of Computing Research Group is organising the 2008 International Conference on Permutation Patterns, on 16-20 June.

More info: [www.cs.otago.ac.nz/staffpriv/mike/PP2008/](http://www.cs.otago.ac.nz/staffpriv/mike/PP2008/)

#### Robocup

Many people may have heard of the international robotics competition RoboCup (<http://www.robocup.org/>). You may not be aware of the spin-off competition for high school students, RoboCup Junior (<http://www.robocupjunior.org/>). This has been running in New Zealand for several years now, with regional competitions such as the one for Otago ([http://www.otagomuseum.govt.nz/robocup\\_challenge.html](http://www.otagomuseum.govt.nz/robocup_challenge.html)), and national finals.

**Anthony Robins** is on the organising committee for RoboCup Junior in Otago. We ran our first competition last year, and he is looking forward to this year's competition on 2 August. He is also the coach for the robotics club at Logan Park High School. Last year the Logan Park team “/dev/null” won the

senior search and rescue event, and came second in the senior soccer.

This competition is a great way to get high school students involved in the basics of engineering, robotics and programming.

## New Building

The saga of the department's move to a single location, the Owheo building, continued. We may now be moving in after refurbishment over the summer of 2008/2009. The labs will be the first part of the department to be relocated.

## Book publication

In 2007, in the Springer International Book Series, Topics in Biomedical Engineering, our new lecturer **Lubica Benuskova** with **Nikola Kasabov** published a pioneering book on development of a new paradigm in modelling artificial neural networks, the dynamics of which is governed by internal networks of genes, called Computational Neurogenetic Modelling.

More info:

<http://www.springer.com/engineering/biomedical+eng/book/978-0-387-48353-5>.

Should you like to purchase this book, Lubica can arrange for a substantial author discount, for department/university libraries or individuals.

Contact Lubica by email: [lubica@cs.otago.ac.nz](mailto:lubica@cs.otago.ac.nz)

## William Evans Fellow

Professor **Mounia Lalmas** visited as a William Evans Fellow from 24 March to 4 April. Her husband **Thomas Roelleke** also visited. Both gave seminars in the department.

## Neural Networks Symposium

In association with the premiere International Conference on Neural Information Processing (ICONIP) of the Asia-Pacific Neural Network Assembly, to be held in Auckland on November 25-28, 2008, **Lubica Benuskova** is co-chairing one of the INNS-NNN Symposia (New directions in Neural Networks) on Modelling the Brain and Nervous Systems, for which you can find the call at:

[http://www.aut.ac.nz/about/news\\_and\\_information/conferences/nnn\\_2008/call\\_for\\_paper.htm](http://www.aut.ac.nz/about/news_and_information/conferences/nnn_2008/call_for_paper.htm).

You can also send Lubica tutorial proposals on general topics related to any area of Neural Information Processing and its applications by 30 May 2008: More info:

[http://www.aut.ac.nz/about/news\\_and\\_information/conferences/iconip\\_2008/call\\_for\\_tutorial.htm](http://www.aut.ac.nz/about/news_and_information/conferences/iconip_2008/call_for_tutorial.htm).

## Free Java tool

**Lubica Benuskova** would also like to announce a free JAVA tool for 2D interactive visualisation of large genomes developed by one of her PhD students, which is available at <http://www.cs.otago.ac.nz/homepages/lubica/software.html>

## Staff

New lecturer **Lubica Benuskova** began with the department at the start of the year. **Helen Dunn** left, to be replaced by new secretary **Bronwyn Atterbury**. **Morag McKenzie**, who had been coordinating COMP112, left for pastures new.

*Robert Pollock*

## Victoria

### News

From 2009 there will be a new School of Engineering and Computer Science, complementing the Faculty of Engineering established at Victoria last year. The first cohort of Engineering students are now in their second year of the new program.

### The Australasian Computer Science Week Conference

ACSW 2009 is being hosted by Victoria on 20-23 January 2009, to be held at Te Papa. Submissions to ASCS, ACE, ADC, AUSGRID, CATS, APCCM, AISC, HIKM, AUIC, ACDC are due around 7 September, often with abstracts due a week before that (but check each conference).

More info: <http://www.mcs.vuw.ac.nz/Events/ACSW2009/>

**CHINZ 2008.** The NZ ACM Special Interest Group on Human-Computer Interaction will be hosted at VUW from 30 June - 3 July.

More info: <http://www.mcs.vuw.ac.nz/events/CHINZ2008/>

**The Computer Science Group** is leading the introduction of e-research, seen as an excellent vehicle to demonstrate the potential of computer science to contribute broadly to the University's research programme. The effort is being led by **John Hine** and **Sam Searle**, with Sam being specifically funded by the Research Office to co-ordinate developments. A number of grants have been obtained, including two with geophysicists. Specific developments include two grids of 1100 desktop machines and a visualisation wall of a dozen screens.

## Appointments and Departures

**Petra Malik** joins us as a new lecturer, after 4 years as a research fellow at Waikato, with interests in formal software development. She received a Masters degree in Computer Science at the University of Kaiserslautern, and did her PhD with a research group at Siemens Corporate Research in Munich, on "non-blocking implementations from discrete-event models."

**Hui Ma** will be joining the software engineering group in July, after completing a PhD last year with **Klaus-Dieter Schewe** at Massey.

**Marcus Frean** has returned from Research and Study Leave. This was split between working with **David MacKay** in Cambridge on Hinton's "deep" belief networks (including a visit to the machine learning group in Edinburgh), and at UESC in southern Bahia, Brazil, looking at bioinformatics relating to the "witches broom" disease affecting cacao.

**Peter Komisarczuk** was on Research and Study Leave from July to October mainly located at the University of Westminster visiting **Vladimir Getov** and researchers working on the EU GRIDCOMP project and the CoreGRID Network of Excellence. He also visited Professor **Omer Rana** at Cardiff University where he presented a seminar about "Grid Enabled Internet Instruments" and attended the AgentCitiesUK Sixth Workshop on Agents and Pervasive Computing at the University of Bath.

After ten years on the staff senior lecturer **Ray Nickson** has left for a new life in the US.

Gareth Baxter finished a two year "complex systems" post-doc with **Marcus Frean** and **James Noble**: we looked at generative models for the graphical structures seen in large software, and the relative importance of selection versus drift in evolutionary networks.

## Seminars and Visitors

**Jennifer Ferrei**—*Interaction design and agile development: A real world perspective*

**Beryl Plimme**—*A Toolkit for Developing Sketched Diagram Environments*

**Anne Wein**—*Improved geological map information for mineral exploration*

**John Lewis**—*Data-driven Modelling for Entertainment Applications*

**Christof Lutteroth**—*Making Program Generators Type-Safe*

**Rene Doursat**—*Architectures That Are Self-Organized and Complex*

**Ewan Tempero**—*On Measuring Java Software*

**Jonathan Kirby**—*Complex exponentiation and pseudo-exponentiation*

**Bill Hefley**—*Software Engineering (and how we do it) matter!*

**Hui Ma**—*Cost-Based Vertical Fragmentation for XML*

**Aaron Williams**—*Gray Codes and Algorithms for Generalizations of Balanced Parentheses*

**Gurvinder Virk**—*New mobile robot applications*

**Wenjian Cai**—*Modelling, Optimisation and Control of HVAC Systems for Energy Efficiency*

**Graham Leedham**—*Handwriting analysis and hand vein imaging for biometric identification*

**Ian Burnett**—*Spatial Squeezing Surround Audio Coding (S3AC)*

**Neal Glew**—*Ct and Pillar: Building a Foundation for Many-Core Programming*

**Neil Dodgson**—*Stylised Rendering for Multi-resolution Image Representation*

**Errol Thompson**—*How do Practitioners' Understand Object-oriented Programming?*

**Chris Mitchell**—*Using Weak Secrets Effectively for Membership*

**Mark Moir**—*Best-Effort Hardware Transactional Memory and How to Exploit It*

**David Streader**—*Model the Problem Don't Program the Computer!*

**Jevon Wright**—*Developing a Modelling Language for Interactive Web Applications*

**Alain Forget**—*Persuasion and Usable Authentication*

**Craig McLeod**—*Vehicle Load Building: Evolving Solution Techniques*

**Brian Carpenter**—*About Routing Research at the IRTF*

The Centre for Logic, Language and Computation has been visited by **Hiroakira Ono** (briefly) and **Hiroshi Aoyama** (over the summer).

## Scholarships and Awards

**James Noble** was awarded "most influential paper for ten years" from the Australian Software Engineering Conference for his previous work on object-orientated programming at Microsoft Research in Sydney.

Honours students **Ben Bradshaw** and **Edmund Horner** were winners of the second NZCS (Wellington) Honours Project competition, whose finals were held in October 2007. Ben has since been put onto a review panel to formally assess government web sites.

## Masters Theses

**Jennifer Ferreira**—*Interaction Design and Agile Development: A Real-World Perspective*

**Craig Anslow**—*Evaluating X3D For Use in Software Visualisation*

**Russell Tod**—*Online unsupervised learning with spiking neurons*

Jennifer and Craig are proceeding to doctoral study: Jennifer has accepted a studentship at the Open University, Milton Keynes, and Craig was awarded the Telstra-Clear scholarship to continue studying at Victoria.

Marcus Frean

## Waikato

### News

Two CS staff have been asked to submit full proposals into the second round of the Marsden Fund:

**Annika Hinze**—*Event-based collaboration between context-aware mobile services*

**Mark Utting**—*Relational Programming in a Parallel World.*



The CS dept has recently purchased eight One Laptop Per Child (OLPC) laptops for use in student projects and courses. Our level-4 Model-Based Testing paper used them in a testing assignment, where the students designed some manual and automated tests for one of the educational programs that runs on the OLPC.

Our new Beowulf cluster computer, Symphony, is now up and running. It consists of 90 compute nodes (Pentium Core 2 Duo with 4Gb RAM) and five display nodes driving a 5 by 4 matrix of 22" LCD screens, plus a fast 1Gb cross-switch network between nodes. So in total, the cluster has 190 compute cores, 380Gb RAM, 47Tb disk and a screen with more than 8000x4000 pixels. It will be used for large machine learning experiments, research on parallel programming, as well as by numerous researchers from other departments in the University. The large display screen faces into a main student thoroughfare, so an additional goal is to find eye-catching and informative screen savers.

## NSCSRSC 2008

Seventeen students and five staff travelled to Christchurch to support the NZCSRSC conference in April. Half the students gave presentations and the other half had posters. All had a great time – thanks Canterbury!

## Unplugged workshop

12 students and two staff participated in the CS Unplugged Workshop held after the CSRSC conference. They have come back enthusiastic and are planning demonstrations in schools and for our Open Day.

## Third Computing Womens Congress 2008

The University's third Computing Women Congress has now wrapped up, but planning is soon about to begin for the next conference, in two years' time. The three-day conference in February aimed to provide role models for those early in their computing careers, but also to those who were well into their careers. About 40 women from New Zealand and Australian universities, and from as far afield as the US, UK and Germany, attended the conference, which covered topics such as web frameworks, research skills and evaluation methods for software tools. Feedback from the participants has been very positive and already speakers have volunteered for CWC 2010.

## Imagine Cup

Our Imagine Cup team **Sam Birch**, **Paul Montigatt**, **Jed Laundry** and **Beverley Rogers** gained third place in the Microsoft Image Cup '08 Software Design competition. Congratulations to the winners from Canterbury.

## Appointments

**Marieka Boleyn** joined the Computer Science Department in February of this year as an Academic Support Officer after working for Statistics New Zealand. Her role involves student

enquiries, promotion, marketing and administration.

## Seminars – visitors

**Ann Blandford**, Director of Human-Computer Interaction Centre, University College, London. December.

*User experience and the design of digital libraries*

**KC Claffy**, Founder/Director of the Cooperative Association for Internet Data Analysis (CAIDA) UCSD Supercomputer Centre. December.

*Internet measurement: what have we learned?*

**Jens Palsberg**, University of California Los Angeles, Computer Science Department. February.

*Event Driven Software*

**Justin Washtell**, School of Computing, University of Leeds, England. February.

*The role of inter-word distances in modelling natural language and mining useful information from it*

**Luis Torgo**, Faculty of Economics, University of Porto. March.

*Utility-based Regression - Recent developments*

**Mohamed Medhat Gaber**, Monash University. April

*Adaptation and Resource-awareness in Data Stream Processing*

**Stefan Kramer**, University of Technology, Munich, Bioinformatics Department, Germany. April.

*Data Mining in Reaction Databases: Towards Predicting Biodegradation Products and Pathways*

**Rob Pike**, Principal Engineer, Google, USA/Australia. April.

*Interpreting the Data: Parallel Analysis with Sawzall*

**Michael O'Sullivan**, Senior Lecturer, Department of Engineering Science, University of Auckland. April.

*Prototyping the Network Management Cycle*

**Steve Reeves**, University of Waikato. May.

*BuildIT – Building Research Capacity*

**Edgar Chavez**, University of Mexico. April-June.

*Exact Matching Under Noise and Applications to Music Information Retrieval*

## Other Visitors

**John Rose**, UNESCO, March.

**Janant Nagda**, IIT, India. May.

**Alanna Fitzgerald**, Concordia University, Canada. May

**Wendy Osborn**, University of Lethbridge, Alberta, Canada. May-June.

**Craig Schock**, University of Calgary, May.

## Scholarships

**Google Summer of Code**

**Blake, Anthony**—*Topological Autorouter*

**French, Ryan**—*Implementation of MPLS in FreeBSD*

## Award

The SCMS Technical Support Group (**Mike Vallabh**, **Jacqui**

**Elphick, Harry Johnston, Clint Dilks, David Baird & Wei Minn Phee** received a 2007 University of Waikato Administrative Excellence Award for “outstanding technical support despite reduced staffing levels”. The Award, which consists of a certificate plus \$15,000 to be shared between members of the group, was presented by the Vice-Chancellor at a ceremony in the Whare Tapere Iti at 4pm on 3 December.

## Masters Theses

**Gao, Xin**—*A service for audio icon and audio books in the Mobile Tourist Information system (TIP) via the Greenstone Digital Library*

**Krishnan, Anupama**—*Web services for Greenstone 3*

**Cleland, Benjamin**—*Reinforcement learning for race car control*

## PhD Theses

**Bittner, Sven**—*General Boolean expressions in publish-subscribe systems*

**Kirkby, Richard**—*Improving Hoeffding Trees*

**Lin, Chi-San Althon**—*Syntax-driven argument identification and multi-argument classification for semantic role labelling*

## Lincoln

### News

Undergraduate numbers at Lincoln are again disappointing this year. There is a small increase in domestic students in first year classes but this is more than matched by the down turn in international enrolments. This is disappointing given the strong demand for graduates. By contrast we have had an increase in PhD enrolments and all our new students were originally from overseas.

Applied Computing staff have been involved in a number of outreach activities lately. We have run Discovery Day sessions, attended a Career's Expo and put on a Lego Robotics workshop for a local high school.

Some of our Chinese post graduates have been prominent around campus in recent days collecting donations for the Chinese earthquake relief. We were proud to see three of them featured in the Christchurch Press on Saturday 19th May.

### Conferences

The Image and Vision Computing New Zealand 2008 conference will be held at Lincoln University from 26 - 28 November. This is New Zealand's premier academic conference on all aspects of Computer Vision, Image Processing, Visualisation and Computer Graphics. The

convenor is **Kenji Irie** of Lincoln Technology. The deadline for full paper submissions is 18 August.

More info: <http://www.lvl.co.nz/ivcnz2008/>.

Lincoln University had a strong presence at the International Congress on Modelling and Simulation Society of Australia and New Zealand, held in December 2007, at the University of Canterbury. In particular, **Alan McKinnon** ran the “Visualisation for Simulation” session. The congress theme was “Land, Water and Environmental Management: Integrated Systems for Sustainability”.

Several students presented papers at the New Zealand Computer Science Research Students Conference held at the University of Canterbury in April. Four of our post graduates also enjoyed attending the CSUnplugged Workshop.

**Nuchjira Laungrunthip** won the best student paper award at Third Computing Women Congress, at the University of Waikato, in February. Nuchira's paper entitled “Image processing to predict the solar exposure at a location” was based on her master's project supervised by **Alan McKinnon**, **Clare Churcher** and **Keith Unsworth**.

### Research Grant

Lincoln University has been successful in securing \$50,000 from REANNZ as part of the Institutional Capability Build Fund. The bid for this money was led by Clive Smallman (Commerce) and involved input from Stuart Charters (Applied Computing), Elizabeth Post (Lincoln Ventures), John Buckler (Director, IT Services). The university will use the money to work with existing research projects to exploit the opportunities provided by eResearch and KAREN. The Applied Computing Group will play a lead role in hosting the new staff to achieve this.

### Visitors

**Jason Wood**, during ModSim07 from University of Leeds, UK

**Malcolm Munro**, April. Professor of Software Engineering and Director, e-Science Research Institute. Durham University, UK

### Books

**Clare Churcher's** second book “Beginning SQL Queries: From Novice to Professional” (ISBN 1590597699) has just been published by Apress. Her 2007 book, “Beginning Database Design: From Novice to Professional”, has been very well received (check out its Amazon reviews!) and has recently been reprinted for the third time.

## Masters Theses

**Yuan Tian**—*Simulation for LEGO Mindstorms Robotics*

Theresa McLennan

## Auckland

### News

**Cris Calude** has been invited to be a member of Academia Europaea (<http://www.acadeuro.org/>). Cris was nominated by the Academia Europaea Informatics Section and amongst this year's new members he joins **Joseph Sifakis** who gained the Turing Award in 2007. Cris is only the Second New Zealander to gain membership of this academy.

**Michael Dinneen** and the University of Auckland team were the South Pacific Champions in the ACM World Finals of the Programming Contest. They were also in the top 100 out of 7000 teams competing in the competition. The team comprised: **Heather Macbeth, Matthew Steel** and **Matthew Gatland**.

The **Robot Vision 08 conference** was co-organized in New Zealand this year by the Departments of Electrical and Computer Engineering and Computer Science. The event in February attracted engineers and scientists from around the world. The Communication and Information Technology Research (CITR) group showed off their new HAKA1 car, a Mercedes fitted with computing and camera equipment that can see and predict what is happening on the road around it. The car is being used within the .enpeda.. project on Auckland roads, in collaboration with Daimler AG in Germany.

John Hamer

## Massey

### News

We are now settling into our new home in the School of Engineering and Advanced Technology (SEAT) within the College of Sciences at Massey. Our cluster leader remains Hans Guesgen, while Stephen Marsland has become postgraduate director for the whole School.

**Stephen Marsland** has made it to the second round of the Marsden Fund in collaboration with **Robert McLachlan** and **Matthew Perlmutter**. The project is on "Geodesics in Diffeomorphism Groups".

**Russell Johnson** has made it to the second round of the Export Education Innovation Programme of Education New Zealand, with a project entitled 'Online Package for the Distance Teaching of English for Speakers of Other Languages in Thailand and South East Asia'.

No sooner had they arrived into our group than **Sven Hartmann** and **Sebastian Link** were off again. Two of our refugees from the old Information Systems group in the College of Business, they have both found other jobs: the former a position at TU Clausthal in Germany, and the latter a post in the business department at Victoria University, Wellington. We look forward to replacing them in the near future.

## Research and Study Leave

**Eva Heinrich** has returned from her sabbatical in France with the European Institute for E-Learning ([www.eife-l.org](http://www.eife-l.org)) and the Département Ingénierie des Médias pour l'Education, University of Poitiers (<http://ll.univ-oitiers.fr/dime/index.php>). She has immersed herself in the European ePortfolio scene, using the insights gained for the preparation of a Massey University College of Sciences project on lifelong learning skills development.

**Catherine McCartin** is currently enjoying her sabbatical, going to Victoria, Canada for the STOC conference and visiting MIT to collaborate with Daniela Rus at CSAIL.

**Jens Dietrich** is the next in the sabbatical queue. He will visit Uwe Assmann at the Technical University of Dresden and Gerd Wagner at the BTU Cottbus.

## Awards

**Catherine McCartin** was awarded the New Zealand Mathematical Society Early Career Award in December last year.

## PhD Theses

**Selvarajah Mohanarajah**—*Applying Software Engineering Principles in Computer Based Educational Systems*

Stephen Marsland

## Canterbury

### News

#### Teaching Medal

Professor **Tim Bell** was presented with the University of Canterbury Teaching Medal at the April graduation ceremony. This prestigious award is not awarded regularly and has only been awarded twice before. It recognises people who have made an outstanding and sustained contribution to teaching in the University.

Tim is well known, both nationally and internationally, for his Computer Science Unplugged project, which demonstrates computer science concepts to school age children through fun activities. Many of New Zealand's emerging researchers and ICT professionals have been inspired by Tim's contributions to initiatives such as the New Zealand Computer Science Research Student Conferences. However, the achievements mentioned in the award citation also include technological, curriculum and pedagogical innovations at undergraduate and postgraduate levels.

Tim's passion for his subject and his enthusiasm for sharing it with others, have been evident to his colleagues and students for over two decades and they are delighted to see him getting this thoroughly-deserved acknowledgment.

### CSSE Student winners of the Microsoft's Imagine Cup

Four CSSE students will be off to France in July after winning the New Zealand final of Microsoft's Imagine Cup. **Stephen Fitchett**, 20, **Louis Sayers**, 21, **Yugan Yugaraja**, 20, and **Janina Voigt**, 21, competed against three other North Island teams to win the final in Auckland on 2 May 2008.

They will now travel to Paris in July for the finals, to compete against teams from 50 other countries with a chance to win \$US15,000 (\$NZ19,000). Team Phoenix, spent six months developing the Taxibus system, designed to reduce congestion and pollution.

## Promotion

**Tanja Mitrovic** was promoted to Professor.

## Awards

**Tanja Mitrovic**, **Brent Martin** and **Pramudi Suraweera** were awarded an AAEE Engineering Education Excellence award for Programs that Enhance Learning (Innovation in Curricula, Learning and Teaching category).

**Andy Cockburn** has been awarded \$400,000 over three years to develop and test new tools to improve navigation within and between computer documents. It will also deliver theories to allow designers to predict and explain the efficiency of alternative designs without the need for time-consuming implementation and evaluation.

### Canterbury CSSE student takes out prestigious Michael A J Sweeney Award

The Canadian Human-Computer Communications Society honours the memory of Michael A. J. Sweeney through an annual award to the best student paper presented at each year's Graphics Interface conference. The winning paper is selected by the program committee from among the papers accepted for the conference, for which one or more student authors are

presenting the paper. This year's award was won by **Jason Alexander**.

**Konstantin Zakharov** has been awarded a scholarship to do his PhD at the University of Leeds.

ICTG won the AAEE (Australasian Association for Engineering Education) award in the category "Innovation in curricula, learning and teaching".

ICTG had eight papers accepted for the ITS 2008 conference, to be held in Montreal in June 2008.

**Moffat Mathews** won the "International Write around the World" Competition run by The Institution of Engineering and Technology (IET) with his paper "Intelligent Learning: The Future of Education". In this paper, Moffat states the importance of learning, outlines the problems faced by education today, and describes Intelligent Tutoring Systems and their effect on learning. His prize is an all expenses paid trip around the world to present his paper in three IET member countries of his choice.

**Jason Alexander** has won second prize in the Engineering College 2008 Postgraduate Poster Competition, awarded in March. The poster is required to be aimed at high school students. More info:

<http://www.cosc.canterbury.ac.nz/~jma142/research/poster-07.03.08.pdf>

## Visitors

**Chris Mitchell**, Royal Holloway, University of London, UK  
**Wendi Heinzelman**, University of Rochester, USA  
**Robert Kraut**, Carnegie Mellon University, USA  
**Karon McLean**, University of British Columbia, Canada  
**Judith Symonds**, AUT University, Auckland  
**Rainer Unland**, University of Duisburg-Essen, Germany  
**Andrew Monk**, University of York, UK  
**Hae-Duck Jeong**, Korean Bible University, South Korea  
**Jens Palsberg**, UCLA, USA  
**Frank Ruskey**, University of Victoria, Canada

## Departures

**Richard Pascoe** is leaving at the end of the first semester to work for Telogis. Telogis provides Telematics, GPS, Automatic Vehicle Location (AVL), and Location Based Services and Software.

**Pramudi Suraweera** completed his post-doc at ICTG and is now working as a Cognitive Scientist for Carnegie Learning, a spin-off company from CMU in Pittsburgh.

## PhD Theses

**Joerg Hauber**—*Understanding Remote Collaboration in Video Collaborative Virtual Environments*



**Julian Looser**—*AR Magic Lenses: Addressing the Challenge of Focus and Context in Augmented Reality*  
**Mirko Eickhoff**—*Sequential Analysis of Quantiles and Probability Distributions by Replicated Simulations*

## Masters Theses

**Charles Begg**—*High Quality Video Streaming with SCTP over CDMA2000*  
**Devon Barrow**—*Assessing the impact of positive feedback in constraint-based tutors*  
**Kapila Pahalawatta**—*Plant Species Biometric Using Feature Hierarchies*  
**Tony Dale**—*A Framework for Linking Projects and Project*  
**Nancy Milik**—*Fitting Free-Form Question Asking and Spatial Ability into ITS Development*  
**Konstantin Zakharov**—*Affect Recognition and Support in Intelligent Tutoring Systems*  
**Andrew Gin**—*Building a Secure Short Duration Transaction Network*  
**David Thompson**—*Large-Scale Display Interaction Techniques to Support Face-to-Face Collaboration*

Gillian Clinton

## AUT

### News

#### New Institute

The Centre for Radiophysics and Space Research has been made a research institute. The Institute for Radiophysics and Space Research which is headed by Professor **Sergei Gulyaev** is about to install a 12m radio telescope near Warkworth. This will enable researchers to engage in exciting new projects and for AUT to participate with Australia in the Square Kilometre Array (SKA) Pathfinder.

#### Double Degree

Following the signing of a new Articulation Agreement with HoChiMinh University of Science (HCMUS), students studying on their Bachelor of Science in Computer Science (BSCS) programme can, after two or three years at HCMUS, complete the Bachelor of Computer and Information Sciences (BCIS) at AUT University to obtain both degrees. This will commence in 2009. Over the coming weeks, HCMUS will be running an extensive city-wide (Ho Chi Minh city) marketing campaign specifically for this programme.

### Awards

The Science Innovator Award was awarded to **Nikola Kasabov** for his significant contribution to Information Science through the creation of novel theoretical and practical models of neural networks applied to a variety of challenging

and significant problems in science in general and in NZ in particular. He was the only academic in NZ who was presented with a Bayer Award for 2007. **Nikola** also received the Vice Chancellor's award for Excellence in Supervision of PhD students.

### Appointments

**Reinhard Gillner** from Fulda University in Germany was appointed to the staff in February this year. He will be on a fixed term employment as a Visiting Professor teaching special topics on data warehousing. His research is in the Database Management System, Migration of Computer Systems and System Analysis.

**Jeffrey Hunter** was appointed to the school in August last year as a part time adjunct professor. He is an esteemed New Zealand academic and leader in mathematics and statistics

### Sabbaticals

**Wai (Albert) Yeap** was on leave at the University of Malaya (UM) in Malaysia until April 2008. In addition to working on his own research projects, the time spent at UM was to develop a better understanding of the research and teaching culture and environment in Malaysian Universities. Time was also spent visiting other universities such as the University of Science in Penang and Multimedia University in Melaka.

**Judith Symonds** is on leave until end of June 2008. She is working to gain further prominence in the RFID/health research space at the University of Southern Queensland. This is also to work with the University of Canterbury on HCI issues, which is directly to inform the ongoing RFID work.

**Jacqueline Whalley** is on leave until end of June 2008. She is currently working on a new collaborative research project called "The visualisation of Genomics Data and Pathogens in a Custom Geographical Information System".

**Philip Cater** – whole year of 2008. He is to investigate two significant research threads which will involve setting up a different work climate and landscape in which to evoke fresh experiences and perspectives on particular professional and research areas. He is also to create conditions in which the imaginative and creative capacities are stimulated, clear and astute thinking permeate the whole endeavours, and effective outputs are generated.

### Events

#### Invited Keynote Speaker

Professor **Wai (Albert) Yeap** was a keynote speaker for two conferences: an IEEE sponsored International Conference on Robotics, Vision, Information and Signal Processing (ROVISP) which was held in Penang from 29-30 November

2007 and the Second Research Development, Innovation and Design Conference which was held in Bangkok from 3-4 March 2008.

## Visiting Fulbright Senior Specialist Amar Umjad

A Research Seminar was organised on 19–20 March 2008 for Visiting Fulbright Senior Specialist **Amar Umjad**. Amjad Umar visited the School of Computing and Mathematical Sciences on the last leg of his programme. During his stay with us Umar consulted several project teams at the School, all related to mobile and wireless research, practice and teaching. Amjad also gave three very well attended presentations to three different audiences – an evening talk to members of the wider ICT community in Auckland (organised jointly with the New Zealand Computer Society - NZCS), a seminar for postgraduate students at the School, and a specialised presentation to the researchers at the Knowledge Engineering and Discovery Research Institute (KEDRI). Though short, Amjad's visit was very fruitful and opened interesting possibilities for further collaboration.

## Mini-Conference on Algebra and Analysis

A mini-conference on Algebra and Analysis was organized by **Jiling Cao** on 28 March 2008. The aim of this conference was to allow mathematicians to discuss some of the most recent advances and applications in Algebra and Analysis. This is to strengthen the links between Mathematical sciences at AUT and other NZ universities.

## International Visitors

**Jimmie Lawson** came as visiting Boyd Professor of Mathematics at Louisiana State University (Baton Rouge). Lawson's main research interests include geometric and operator means and symmetric spaces, Lie theory of semi-groups, geometric control theory, lattice theory, domain theory and connections with theoretical computer science, topological algebra, topological dynamics, and algebraic topology. He presented a research seminar talk on Quasicontinuous Functions and a Generalized Calculus.

**Amjad Umar** visited AUT as Visiting Fulbright Senior Specialist early this year and presented a research seminar on Mobile Computing and Wireless Communications R&D Trends. His seminar was focused on the current research and development trends in mobile and wireless computing including mobile technologies and mobile applications. He discussed network and platform support for mobile business, and the impact of integration, security and management issues on the directions for further research and development.

**Zbigniew Piotrowski** visited as Professor of Mathematics and Statistics from Youngstown State University is here to find opportunities for collaboration.

## Books

**Wai (Albert), Yeap.** *Robot and cognitive approaches to spatial mapping*. Springer Tracts in Advanced Robotics was published by Springer-Verlag, Germany.

**Leo, Hitchcock.** *Industry Certification: Stakeholder Value and Pedagogical Validity*. VDM Verlag Dr. Müller Aktiengesellschaft & Co. KG: Saarbrücken, Germany.

## Upcoming Conferences

### WISE 2008

The Ninth International Conference on Web Information Systems Engineering (WISE 2008) will be held in September 2008 at the Auckland University of Technology. The WEISE Conference is to provide an international forum for researchers, professionals, and industrial practitioners to share their knowledge in the rapidly growing area of Web technologies, methodologies and applications. This conference will be organised by **Russel Pears & Dave Parry** as the local organizing chair.

More info: <http://wise2008.mucoms.org/>

### AI2008

The Twenty-first Australasian Joint Conference on Artificial Intelligence (AI 2008) will be held for the first time in Auckland, New Zealand, from 1-5 December 2008. The conference will be organised by **Wai (Albert) Yeap** as Conference Chair, **Jochen Schmidt** as Workshop & Tutorial Chair and **YunSing Koh** as Local Organising Chair.

More info: <http://www.ai08.org/index.htm>

### IJCAI 2009

Professor Wai (Albert) Yeap has been invited as a member for the advisory committee for IJCAI 2009 in Pasadena, California

## Research Grants

**Stephen MacDonell** is part of successful FRST grant with other NZ universities.

**Dave Parry** has been awarded a conference grant to attend IEEE conference on Fuzzy Systems.

**Jiling Cao** has been awarded a conference grant to attend the International Conference on Analytic Topology and its Applications in Serbia and the International Conference on Advances in Set Theoretic Topology in Italy. He is also an invited guest speaker in the conference on Analysis, Topology and Application in Serbia.

## Scholarships

**Luiz Mendes Filho** - awarded a Top Achievers Doctoral Scholarship

**Bryon Houliston** - a Vice Chancellor's PhD Scholarship

**Eric Lo & YiWen Huang** - publication grants over the summer of 2007

**Simei Gomes Wysoki** - a publications grant for March/April 2008.

**Harya Widiputra** - awarded a PhD Scholarship.

## Postgraduate News

MCIS Thesis Fair was organised on 14 April. Many students turned up to this fair where students were given the opportunity to hear academic staff presentations on their areas of research. Following this students and potential supervisors were able to spend some time together in one to one conversations or small group discussions on topics for students' thesis related research.

## Masters Theses

**Dave Crosby**—*Risk Management in Smaller Software Projects*

**Sherlock Licorish**—*An “Agile Methods Risk” Management Evaluation & Project Management Tool that Implements Risk Analysis*

**Yu Fei Wang**—*Ontology visualization: the brain gene ontology case*

**Yiwen Huang**—*A Comparative Study of the Mobile Internet Deployment Models in NZ*

**Paeterasp Vevaina**—*Factors Affecting the Implementation of Enterprise Systems within Government Organisations in New Zealand*

## PhD Theses

**Paulo Gottgtroy**—*Data mining and knowledge discovery & ontology from large databases in dynamic environments*

**Sirisukha Siidej**—*Multicast routing over computer networks: secure performance designs*

**Simei Gomes Wyoski**—*Evolving connectionist systems for brain-like multimodal pattern recognition*

**Vishal Jain**—*Evolving connectionist systems for brain-like multimodal pattern recognition*

Ajit Narayanan