

CIAO Newsletter

Centre for Informatics & Applied Optimization

Graduate School of Information Technology & Mathematical Sciences, University of Ballarat





Another Successful China Trip

Professor John Yearwood travelled to China recently to participate in the following activities:

Workshop on Operations Research and Cybernetics: This international Workshop was held on 13 June 2009 at Shanghai University, Shanghai, China.

The Workshop was officially opened by Professor Zhewei Zhou from Shanghai University.

Invited Speakers were Professor Liqun Qi from Hong Kong Polytechnic University, Professor Luonan Chen from Osaka Sangyo University, Professor Cornelis Roos from Delft University of Technology in The Netherlands, and Professor Kok Lay Teo from Curtin University of Technology in Western Australia.

It brought together leading experts to discuss development of the new Open Laboratory (see below) and a new joint graduate program.

Open Laboratory of Operations Research and Optimization: This new Laboratory was officially opened on 13 June 2009, as part of the Workshop on Operations Research and Cybernetics.

The Open Lab acts as the base for the discipline of Operations Research and Cybernetics at Shanghai University, and is known as the Shanghai Key Discipline.

The Open Lab has invited leading

international experts in the fields of operations research, optimization, combinatorics, logistics, optimal control, systemic biology and bioinformation to join its Academic and Supervision Committees.

Professor Yearwood is a member of the Supervision Committee, along with representatives from the Chinese Academy of Sciences, Washington State University, the National University of Singapore, and Delft University of Technology.

CACAO: CACAO is the China-Australia Collaboration in Applied Optimization, a Memorandum of Understanding CIAO has entered into with Shanghai University. It formalises a joint alliance which facilitates collaboration between the two entities.

Professor Yearwood participated in further discussions with Professor Yongjian Yang, including arranging for him to visit Ballarat later in 2009.

Other Visits: Professor Yearwood met with Professor Suqing Liu at Tongji University, to discuss possible collaboration on water optimization projects, and to learn more about Tongji's current Yangtze River project.

He also visited Fudan University and gave a talk to the School of Management Science on group decision making.



**CIAO Director:
Professor John Yearwood**

EUROPT Fellow 2009

CIAO congratulates Dr Adil Bagirov (pictured below) on being recently named EUROPT Fellow for 2009.

EUROPT is the Europe-based Continuous Optimization Working Group, with a membership of over 750 scientists from forty countries.

EUROPT's goal is to promote and facilitate communication between international researchers working in all areas of continuous optimization.

The first EUROPT Fellow was CIAO's Founding Director, the late Professor Alex Rubinov, who received the inaugural award in 2006.

It is a terrific honour to receive this award. We take this opportunity to pay tribute to Dr Bagirov's optimization expertise and the international significance of his research work.



Rubinov Lecture 2009

- > **Date:** Mon 9 Nov 2009, 5.30 for 6.00pm
- > **Speaker:** Professor Jon Borwein
- > **On:** "Computer as Crucible: The End of Theory?"
- > **At:** Brewery Lecture Theatre, SMB Campus, Lydiard Street South, Ballarat
- > **RSVP by 2 Nov 2009 to:** (03) 5327 9949 or e.matuschka@ballarat.edu.au

Dr Andrew Stranieri is the Deputy Director of CIAO, and has worked at the University of Ballarat since 2002.

He is also Leader of CIAO's Health Informatics Laboratory (HIL), and a Senior Lecturer within the Graduate School of Information Technology & Mathematical Sciences.

Dr Stranieri gained a B.A.(Psych) from the University of Melbourne in 1982.

In the early 1990s he completed both a Graduate Diploma and an Advanced Diploma in Computer Science at La Trobe University in Melbourne.

This was followed by a PhD in Computer Science at the same institution, which he successfully completed in 1999.

Dr Stranieri's early research - in combining argumentation theory with machine learning to predict Family Court outcomes following divorce (Split Up) - demonstrated that decision support systems could adequately model discretionary reasoning.

Argumentation theory is the study of how people use logical reasoning to reach conclusions through debate, negotiation, conversation, persuasion and dialogue.

Dr Stranieri's Kluwer/Springer text "Knowledge Discovery from Legal Databases" further contributed to an acceptance that intelligent systems can have an impact on supporting decision-making under discretion.

In 1999 Dr Stranieri won a three-year Australian Research Council (ARC) Post-Doctoral Fellowship, which he

Dr Andrew Stranieri

Staff Member Profile



undertook at La Trobe University.

This research was instrumental in establishing an innovative approach for the rapid development of decision support systems in fields including refugee law (Embrace), copyright law (RightCopy), eligibility for legal aid (GetAid), sentencing and research ethics (justEthics).

Decision support systems are technology-based information systems, which support decision making activities.

In 2002 he won a large ARC Discovery Grant with Professor John Yearwood, to research the topic "Mapping argumentation structures to narrative for eCommerce dialogue support".

Dr Stranieri subsequently devised a commercialisation model, where researchers can form and manage research and development spin-out companies in the early years, in close collaboration with universities for mutual benefit.

From 2003-2007 he worked as Director of his own spin-out company - JustSys - in close collaboration with two Universities, while continuing his own research.

In 2007, Dr Stranieri was an Australian-based reader (Ozreader) for the Australian Research Council (ARC).

Dr Stranieri's reputation as an innovator in knowledge modeling and knowledge management is evidenced by invited tutorials he has presented at several International Conferences in Artificial Intelligence and Law, at Queens University, Belfast.

In Australia he has presented invited addresses at Victoria University; RMIT University; the Sinch Knowledge Management in Law Symposium; Software Engineering Australia; the University of Newcastle; and National Legal Aid.

Internationally he has presented invited addresses at Queens University, Northern Ireland; Sowerby Centre for Health Informatics, England; Tecnologico de Monterrey, Mexico; and the National University of Mexico.

Dr Stranieri currently supervises six PhD students, whose research covers the areas of e-governance, online dispute resolution, modelling/analysis of sports injury, flight simulation software and group decision making.

He was awarded a QE II Fellowship, won funding for numerous other research grants, and to date has published more than 80 peer reviewed books, book chapters, and journal and conference articles.

IBM Australia Visitor

Dr Glenn Wightwick

CIAO recently hosted a visit from Dr Glenn Wightwick (pictured right), who is an IBM Distinguished Engineer and Director of the IBM Australia Development Laboratory.

CIAO has recently been negotiating potential collaborative projects with the Sydney-based Dr Wightwick.

During his visit Dr Wightwick presented a seminar titled "IBM Smarter Planet", to provide information on Information and Communication Technology (ICT) initiatives IBM has developed for future worldwide use.

Dr Wightwick joined IBM in 1987, and his work since then has included computational chemistry, seismic processing, weather forecasting, transaction processing and highly-available infrastructure.



Research Group News

MAORG: Mathematical Analysis & Optimization

Leader: Dr Adil Bagirov



The final report on MAORG's pilot project with Grampians Wimmera Mallee Water (GWM Water) has now been completed and signed off.

This has been a collaborative project between CIAO, National Information Communication Technology Australia – Water Information Networks (NICTA-WIN) and the Water in Drylands Collaborative Research Program (WIDCORP).

The aim of the project was to assist GWMWater in developing an optimized model for the operation of the Northern Mallee Pipeline water system.

Project outcomes have included the development of a dynamic water optimization model which will lead to:

- significant economic savings for GWM Water and its customers.
- improvements in performance at the point of end user.
- substantial environmental benefits.

The project brought together leading researchers in the fields of advanced mathematical modelling, water management and environmental research.

An important next step in our relationship with GWM Water is the Australian Research Council Linkage Project won earlier this year, on which work has commenced.



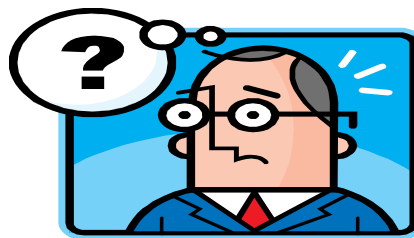
DMIRG: Data Mining and Informatics

Leader: Dr Peter Vamplew (below)
Deputy Leader: Dr Richard Dazeley



Current projects underway in DMIRG include:

- > Reasoning Communities.
- > Classification of sleep apnoea data.
- > Development of a Traditional Chinese Medicine expert system, jointly with the Health Informatics Laboratory.
- > Classification of landslips, as part 2 of this project.
- > Victorian Department of Justice modelling project, where the product has now been delivered and is undergoing site testing.
- > Work on Dr Richard Dazeley's Early Career Researcher Grant and Research Infrastructure Block Grants.
- > Trials on decision making in footy tipping are underway.



Research Plan activities in DMIRG - as Routed in CIAO's five-year research plan - include:

- > Development of a commercial quality Ripple-Down Rules (RDR) engine has commenced.
- > Establishment of a working group with MAORG researchers, to strengthen ties and increase collaboration opportunities.

CIAO welcomes PVC Research

CIAO is very pleased to welcome Professor Frank Stagnitti to the University of Ballarat.

Professor Stagnitti is the newly appointed Pro Vice Chancellor - Research at UB, and previously worked at Deakin University.

We were fortunate to meet with and hear about Professor Stagnitti's research vision on his first day in the job. He made a presentation to the School's Annual Retreat, which this year was held at Creswick, near Ballarat.

Professor Stagnitti has a BSc.(Hons) and a PhD from Griffith University, and a Graduate Certificate in Environmental Statistics from the University of Canberra.

He is an applied mathematician and environmental scientist, with broad research interests in the field of environmental modelling of pollution. He is also an internationally recognised expert in the area of solute and contaminant transport in soils.

Professor Stagnitti previously held appointments as Chair of Academic Board, Associate Dean Research, Professor and Chair in Aquatic Science at Deakin University.

He has published more than 150 journal articles, and won several million dollars in research grants from the Australian Research Council (ARC).

Industry funding for research has been won from organisations including ALCOA, the Grape and Wine Industry and the Japan Science Foundation.

CIAO and its researchers look forward to working with Professor Stagnitti.



Pictured above (L to R): Professor Frank Stagnitti and Professor John Yearwood.

Research Laboratory News

ICSL: Internet Commerce Security

Director: A/Professor Paul Watters



Several ICSL members recently attended the **Cybercrime and Trustworthy Computing Workshop (CTC-2009)** in Brisbane.

ICSL was ably represented by Associate Professor Paul Watters, Dr Liping Ma, Ms Amber Stabek, Mr Robert Layton and Mr Simon Brown.

The workshop was a great success, and ICSL will now work towards formalising an **IEEE-endorsed conference** in this field, to be held in Australia at low cost.

ICSL researchers will also attend the **Anti-Phishing Working Group (APWG)** conference in Seattle, Washington, USA, after three papers were recently accepted.

This is the **peak global e-crime conference**, which has industry sponsors such as Visa, Facebook, Sophos, Symantec and Kaspersky.



Two Australian Research Council (ARC) Linkage Project applications are currently in the pipeline, in preparation for Round 2, 2009 or Round 1, 2010.

Applications for Semester 1, 2010 Scholarships will remain open until 31 October 2009. In this round ICSL will offer **two further scholarships** for PhD students.

HIL: Health Informatics

Leader: Dr Andrew Stranieri



Work on a commercial consultancy with the **Australian Sports Commission** has now been successfully completed.

There are strong prospects for further work and possible research collaboration.

Ballarat Health Services (BHS) has generously agreed to host HIL meetings at the Ballarat Base Hospital.

This will increase exposure for the Laboratory, and lead to more local collaboration opportunities within the Ballarat health community.

Current projects underway in HIL include:

> Endeavour College:

Dr Chris Turville is liaising with Endeavour College of Natural Therapies. A draft Memorandum of Understanding for project collaboration is being prepared, and projects will include homeopathic trials.

> Traditional Chinese Medicine:

A paper on a knowledge-based system utilising Traditional Chinese Medicine in the diagnosis of arthritis is being prepared by Dr Long Jia.

> Online Dispute Resolution (ODR):

PhD student Mr Niall Muecke, Dr Andrew Stranieri and Dr Charlynn Miller are implementing an ODR program. The case study has commenced, and volunteers are being recruited.

Internet Security Guru

Professor Wu Liu visits CIAO

CIAO was excited to host a recent five-week visit from **Professor Wu Liu**, who was here at the invitation of ICSL Director Associate Professor Paul Watters.

Professor Liu is from **Tsinghua University**, Beijing, China, and also holds a high level position within **CCERT**, the China Education & Research Network Computer Emergency Response Team in Beijing, China.

He is CIAO's Chinese partner on an **Australia-China International Science Linkage Grant Application**, titled "Research in Protocol Weakness Analysis and Security Testing for Next Generation Internet".

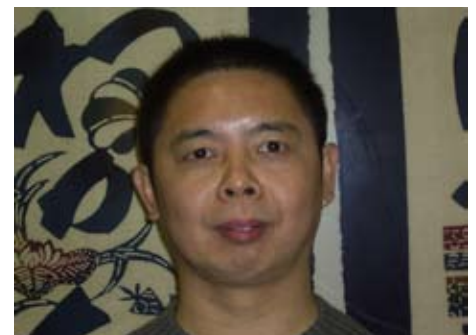
During his visit Professor Liu presented **three seminars**, which included **live online demonstrations** of his presentation topics:

1. **Attack Test** in the IPv6 Network.
2. Practice in **Shared Password Cracking** for WEP Protected Wireless Network.
3. How to Build an **Authentic IPv6 Network**.

IPv6 is Internet Protocol Version 6, the next generation internet protocol. It is designed to supersede version 4, and uses a **128-bit address**, which provides significantly more address space for the international internet community.

Professor Liu (pictured below) has had a long association with CIAO researcher **Dr Zhiyou Wu**. They were undergraduates together more than 20 years ago, at Chongqing Normal University in China.

This was his first to Ballarat.



Business Development Manager:

Mr Justin Poole



Central Victoria Solar Cities

Work on this project is being undertaken by:

- > Mr Bob Bateman, Project Manager
- > Professor John Yearwood
- > Mr Peter Martin, Statistician
- > Dr Ahmed Bani-Mustafa, Statistician

Project partners Centre for Regional Innovation & Competitiveness (CRIC) have finalised the survey instrument, and data is now beginning to flow to CIAO for analysis.

GWM Water : Linkage

This Australian Research Council Linkage Project is now well underway.

This project is titled “An integrated dynamic and optimization models for efficient pipeline system operations in an evolving water and energy market”.

Applications for the PhD Scholarship have closed, with more than 140 expressions of interest having been received.

Australian Sports Commission

This project has now been successfully completed by Dr Andrew Stranieri and Mr Bob Bateman.

The project was part of the ongoing ASC support for National Sporting Organisations.

It examined and reported on:

1. The extent to which a sport’s Information Communication Technology (ICT) systems are integrated across national/state jurisdictions.
2. The extent to which a sport uses ICT to assist in the achievement of its strategic objectives, known as its ‘e-capability’.

Further work is expected to stem from the project’s recommendations.

Colloquia at UB

Recent colloquia presentations have been made by the following visitors to CIAO:

> **Professor Colin Fidge**, Faculty of Science & Technology, University of Queensland

Topic: Integrating Hardware and Software Information Security Analyses



> **Professor Didar Zowghi**, Research Centre for Human-Centred Technology Design, Faculty of Engineering & Information Technology, University of Technology, Sydney

Topic: A Longitudinal Study of Requirements Volatility in Software Development

Conference Presentations

Recent conference paper presentations by CIAO staff have included:

53rd Annual Meeting of the Australian Mathematical Society, Adelaide, SA

Dr Fusheng Bai: “Decomposition methods based on separable approximation of augmented Lagrangians”.

Dr Zhiyou Wu: “Optimality conditions in global optimization and their applications”.

Dr Zari Dzalilov: “Applications of optimization based clustering and classification algorithms to a ‘Tobacco Control’ data set”.

Professor Anatoli Ivanov: “Global stability and periodic solutions in a differential delay model”.

20th National Conference of Australian Society for Operations Research (incorporating 5th International Intelligent Logistics Conference), Gold Coast

Dr Adil Bagirov: “Codifferential method for global minimization of piecewise linear functions”.

9th International Conference on Fixed Point Theory & its Applications, Changhua, Taiwan

Dr David Yost: “Lipschitz Selections for Multifunctions”.

Seminars at UB

Recent seminars have been presented by:

> **Professor Anatoli F Ivanov**, Department of Mathematics, Pennsylvania State University, Pennsylvania, USA

Topic: Oscillation, Instability and Periodicity in Differential Delay Equations

> **Professor David Gao**, Department of Engineering Science & Mechanics, College of Engineering, Virginia Polytechnic Institute and State University, Virginia, USA

Topic: Modeling, Optimization, and Simulation of Complex Systems: Challenges, Methodology, and Unified Solutions

> **Professor Phan Quoc Khanh** (pictured below), Director of the Department of Mathematics, International University of Vietnam, Ho Chi Minh City, Vietnam

Topic: Approximations as generalized derivatives: Calculus and applications to optimality conditions



> **Dr Hebert Perez-Roses** (pictured below), University of Newcastle, New South Wales

Topic: Group Theoretic Protocols for Information Security



Staff News

Book Editorship

Dr Zhaohao Sun is joint editor of a newly published book titled “The Handbook of Research on Complex Dynamic Process Management: Techniques for Adaptability in Turbulent Environments”.

Farewell

We recently said farewell to Dr Lynne Gleeson and Dr Bing Du, who have left UB to take up other opportunities.

CIAO wishes them well for the future.

Research Student Profile:

Mr Anthony Quinn



Mr Anthony Quinn (pictured above) commenced his PhD at the University of Ballarat in February 2006, after completing an Honours Degree here at the School of Information Technology and Mathematical Sciences.

His research topic is "Exploring the AWSum Data Mining Algorithm", and he is supervised by Dr Andrew Stranieri (Principal) and Professor John Yearwood (Associate).

Classification techniques in data mining have become complex in recent years. They have focused on classification accuracy, without regard to eliciting insight from the data.

Mr Quinn's research investigates the use of weighted sum inference to classify and provide insight into data.

It presents a classification algorithm - AWSum - which maintains comparable accuracy with leading classifiers, as well as providing insight.

A focus on the feature value space allows the technique to identify feature values and combinations of feature values, which are sensitive and important in classification.

This can prove useful in fields such as medicine, where this type of micro-focus and understanding is critical in classification.

Mr Quinn's research also provides an analysis of other classification approaches, which places weighted sum inference in context.

He is currently preparing to submit his thesis for examination, and we wish him well for the future.

PhD: Confirmation of Candidature

Congratulations to the following PhD Students, who recently successfully completed their Confirmation of Candidature:

> Ms Liping Jin

Topic: "Subgradient Methods for Nonconvex Nonsmooth Optimization and Their Applications"

Supervisors: Dr Adil Bagirov (Principal) and Dr Musa Mammadov (Associate)

> Mr Robert Layton

Topic: "Automated Authorship Analysis of Phishing Attacks"

Supervisors: Associate Professor Paul Watters (Principal) and Dr Richard Dazeley (Associate)

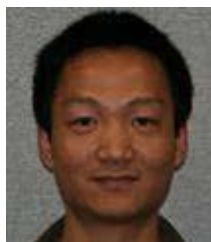
> Mr Lei Zhao

Topic: "Global Optimization Methods for Solving Non-Linear Equations"

> Supervisors: Dr Musa Mammadov (Principal), Professor John Yearwood & Dr Fusheng Bai (Associates)



Pictured above (L to R):
Ms Liping Jin and Mr Robert Layton



Pictured above (L to R):
Mr Lei Zhao and Mr Jai Gupta

AAQHC Award

Congratulations to PhD Student Mr Jai Gupta, who recently won a \$1200 Scholarship.

The Scholarship was awarded by this year's Australasian Association for Quality in Healthcare (AAQHC) Conference.

Visitors to CIAO

CIAO recently hosted visits from the following personnel:

Professor Anatoli F Ivanov

Professor Ivanov is from the Department of Mathematics, Faculty of Science, Wilkes-Barre Campus, Pennsylvania State University, Pennsylvania, in the USA.

He is here to collaborate with CIAO researchers for six months, including Dr Musa Mammadov and Professor John Yearwood.

Key research interests of Professor Ivanov (pictured below) include differential equations and dynamical systems.



Professor Phan Quoc Khanh

Professor Khanh is Director of the Department of Mathematics at the International University of Vietnam, Ho Chi Minh City, Vietnam.

He recently spent ten days with CIAO, collaborating with Dr Alex Kruger, and also took the opportunity to meet with UB's Vice Chancellor, Professor David Battersby.

Professor Khanh's research interests include Optimization, Optimal Control, Operations Research, Applied Functional Analysis and Dynamical Systems.

He is the Founder of the International University of Vietnam, where until recently he was the Rector or Vice Chancellor equivalent.

Dr Hebert Perez-Roses

Dr Perez-Roses is from the University of Newcastle in New South Wales, where he is currently undertaking a second PhD.

He recently visited CIAO for several days, to work with Associate Professor Paul Watters and Dr Guillermo Pineda-Villavicencio on an internet security project.

Publications

Book Chapters: Published

Sun, Z., Han, J., Dong, D. & Zhao, S. (2009) Engineering of Experience Based Trust for E-Commerce, Handbook of Research on Complex Dynamic Process Management: Techniques for Adaptability in Turbulent Environments.

Journal Papers: Submitted/Accepted

Alazab, M., Venkatraman, S. & Watters, P. (2009) Effective digital forensic analysis of the NTFS disk image, Ubiquitous Computing and Communication Journal (UBICC Journal) (S).

Kelarev, A.V., Yearwood, J.L., Watters, P., Soukhorukova, N.V., Abawajy, J.H. & Pan, L. (2009) Information security applications of the Munn rings, Semigroup Forum (S).

Kelarev, A.V., Yearwood, J.L., Watters, P., Ma, L., Abawajy, J.H., Pan, L. & Grobner-Shirshov, A. (2009) Algorithm for Information Security Applications, Southeast Asian Bulletin of Mathematics (S).

Kelarev, A.V., Yearwood, J.L., Watters, P. & Wu, X.W. (2009) Optimal classifiers for information security applications based on syntactic semigroups, Semigroup Forum (S).

Lin, Y., Yang, Y. & Mammadov, M. (2009) A new filled function method for nonlinear equations, Applied Mathematics and Computation (A).

Miller, C., Lee, M., Newnham, L., Rogers, L., & Peck, B. (2009). "Enhancing tertiary healthcare education through 3D MUVE-based simulations" in Vincenti, G. & Braman, J. (Eds.) Teaching through Multi-User Virtual Environments. Hershey, PA: IGI Global (A).

Pineda-Villavicencio, G. & Watters, P.A. (2009) Botnet Optimization and the Degree/Diameter Problem, IEEE Security & Privacy Journal (S).

Tilakaratne, C.D., Mammadov M. A. & Morris, S.A. (2009) Modified Neural Network Algorithms for Predicting Trading Signals of Stock Market Indices, Journal of Applied Mathematics and Decision Sciences, special issue titled "Intelligent Computational Methods for Financial Engineering" (A).

Wu, X., Watters, P.A. & Yearwood, J. (2009) Generalized Traceability Schemes

for Tracing Illegitimate Redistributors, IET Information Security (S).

Journal Papers: Published

Al-Nasser, A.D. & Bani Mustafa, A. (2009) Robust extreme ranked set sampling, Journal of Statistical Computation and Simulation, Vol.79, Issue 7, pp.859-867.

Golbabai, A., Mammadov, M. & Seifollahi, S. (2009) Solving a system of nonlinear integral equations by an RBF Network, Computers & Mathematics with Applications, Vol.57, Issue 10, pp.1651-1658.

Kasimbeyli, R. & Mammadov, M.A. (2009) On Weak Subdifferentials, Directional Derivatives and Radial Epiderivatives for Nonconvex Functions, SIAM Journal on Optimization, Vol.20, No.2, pp.841-855.

Saeed, A., Stranieri, A., Dazeley, R. & Ma, L. (2009) Grid-gased information retrieval for the aggregation of legal datasets in online dispute resolution, Communications of SIWN Systemics and Informatics World Network, Vol.6, April 2009, pp.16-22.

Yearwood, J.L., Bagirov, A. & Kelarev, A. (2009) Optimization methods and the k-committees algorithm for clustering sequence data, Journal of Applied and Computational Mathematics, Vol.8, No.1, pp.92-101.

Conference Papers: Submitted/Accepted

Alazab, M., Venkatraman, S., & Watters, P.A. (2009) Digital forensic techniques for static analysis of NTFS images, International Conference on Information Technology ICIT 2009 (A).

Aston, M., McCombie, S., Reardon, B. & Watters, P.A. (2009) A Preliminary Profiling of Internet Money Mules: An Australian Perspective, CTC-2009, Sixth International Conference on Autonomic and Trusted Computing, Brisbane, Queensland, 7-9 July 2009 (A).

Bruck, S. & Watters, P.A. (2009) Autonomic Nervous System Factors Underlying Anxiety in Virtual Environments, 15th International Conference on Virtual Systems and Multimedia, VSMM2009, Vienna, Austria, 9-12 Sept 2009 (S).

Bruck, S. & Watters, P.A. (2009) Cybersickness and anxiety during simulated motion: Implications for VRET, 14th Annual CyberTherapy & CyberPsychology Conference, Verbania-Intra, Italy, 21-23 June 2009 (A).

Bruck, S., & Watters, P.A. (2009) Estimating Cybersickness of Simulated Motion Using the Simulator Sickness Questionnaire (SSQ): A Controlled Study, 6th International Conf on Computer Graphics, Imaging and Visualization, CGIV 2009, Tianjin, China, 11-14 Aug 2009 (S).

Bruck, S & Watters, P. (2009) Factor structure of cybersickness, ISMAR 2009, International Symposium on Mixed and Augmented Reality, Orlando, Florida, USA, 19-22 Oct 2009 (S).

Layton, R., Brown, S. & Watters, P.A. (2009) Using differencing to increase distinctiveness for phishing website clustering, CTC-2009, Sixth International Conference on Autonomic and Trusted Computing, Brisbane, Qld, 7-9 Jul 2009 (A).

Ma, L., Ofoghi, B., Watters, P.A. & Brown, S. (2009) Detecting Phishing Emails Using Hybrid Features, CTC-2009, Sixth International Conference on Autonomic and Trusted Computing, Brisbane, Queensland, 7-9 Jul 2009 (A).

Stabek, A., Brown, S., & Watters, P.A. (2009) The Case for a Consistent Cyberscam Classification Framework (CCCF), CTC-2009, Sixth International Conference on Autonomic and Trusted Computing, Brisbane, 7-9 Jul 2009 (A).

Vamplew, P., Dazeley, R., Barker, E. & Kelarev, A. (2009) Constructing Stochastic Mixture Policies for Episodic Multiobjective Reinforcement Learning Tasks, AI 2009, Artificial Intelligence Conference 2009, Melbourne, Dec 2009 (S).

Watters, P.A. (2009) Data Loss in the British Government: A Bounty of Credentials for Organised Crime, CTC-2009, 6th Int'l Conf on Autonomic and Trusted Computing, Brisbane, Queensland, 7-9 July 2009 (A).

Conference Papers: Published

Graymore, M., P. McRae-Williams, J. Block, B. Mitchell, A. Wallis, K. O'Toole & P. Vamplew (2009) Footy, Flows and Farms: A Visualisation Tool for Determining Community Water Allocation Preferences, 21st Conference for the Pacific Regional Science Conference Organisation, Gold Coast, 19-22 July 2009.

Swanson, J., Ollington, R. & Vamplew, P. (2009) Creating Game Agents Using Reinforcement Learning and Expert Advice, CGAT 2009, Computer Games Multimedia & Allied Technology 2009, Amara, Singapore.



Centre for Informatics & Applied Optimization

Graduate School of Information Technology & Mathematical Sciences, University of Ballarat, Mt Helen Vic 3350

Email: e.matuschka@ballarat.edu.au ~ Tel: (+61) 3 5327 9949 ~ Fax: (+61) 3 5327 9966

Photograph by Elizabeth Matuschka: Seaside daisies at Mt Helen Campus, University of Ballarat, Ballarat, Victoria, Australia