ISTAS 2010

2010 IEEE International Symposium on

Technology and Society

The Social Implications of Emerging Technologies

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University of Wollongong
New South Wales, Australia

PROGRAMME, ABSTRACTS & CD-ROM OF FULL PAPERS

Edited by
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Organised by

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The Fifth Workshop on the Social Implications of National Security

Welcome Message from The General Chair

On behalf of the Organising and Program Committee, it is with pleasure I welcome you to the 2010 IEEE International Symposium on Technology and Society (ISTAS) sponsored by the IEEE Society on Social Implications of Technology (SSIT). This annual event has proven itself to be a leading international forum for exploring the social implications of technology from an interdisciplinary perspective. With an exciting program scheduled, this year's event is set to become another landmark occasion.

We are greatly honoured to be hosted this year by the University of Wollongong, an innovative institution of international standing located in Australia's Illawarra region near to the beautiful coastal city of Wollongong. Known as a city of contrasts, and little over 200 years itself, Wollongong is a fitting backdrop for this event as we consider how technological innovation fundamentally changes the ways in which we live, work and communicate.

Technology continues to evolve at an unprecedented rate, and many of its successes and tragedies are yet to be unveiled. Society is continually distorted and enriched through this rolling experiment for mankind, yet as we strive to understand the deeper impacts, the results are hard to predict. It is evident that we are at an exciting point right now, with technological driven change rapidly happening around us. This excitement is reflected in the broad range of papers and presentations lined up during ISTAS'10 which will undoubtedly make for a memorable and thought provoking event.

We have witnessed a profound change over the last 20 years which has bought about a new era of inter-connectivity amongst people. Within the academic and research communities the benefits of connecting beyond ones own discipline are slow to be capitalised on. Establishing long-term links is key to ameliorating research and innovation fragmentation both at a fundamental level across disciplines and at the broader level across continents. ISTAS'10 is a heterogeneous environment for engineers, scientists, researchers in the social sciences, arts and humanities, and decision makers in the public and private sectors. Here we have the opportunity to integrate as well as disseminate, fostering new and exciting interdisciplinary collaboration. It is with this in mind that I hope all of the delegates at ISTAS'10 will take the opportunity to network and continue discussion beyond the sessions, and indeed beyond the event itself.

I take this opportunity to thank the Organising Committee, Program Committee and all reviewers involved in making ISTAS'10 a success. Finally, I wish to thank all of the delegates attending the event — I look forward to your company and wish you a most enjoyable stay in Australia.

Dr. Mark Gasson
University of Reading
General Chair — ISTAS 2010

Welcome Message from The Program Chair

As the Program Committee Chair, I would like to first and foremost thank the forty person strong international program committee for their support, feedback and contributions from the outset. The Committee itself was made up of researchers from 11 countries, covering diverse disciplines and expertise. In their own right members of the program committee are renowned researchers, cited in many of the papers appearing in this year's ISTAS full proceedings, and over the years appearing in associated publications such as *IEEE Technology and Society Magazine*. It was such an honour to work with persons possessing a truly collaborative spirit, some of whom had more than 40 years experience in research and teaching in their chosen field of expertise.

Putting together the committee proved to be an exercise in finding world-renowned researchers in specific disciplines that covered the main tracks of the conference. The willingness of the program committee to participate in ISTAS2010, despite its heavy multidisciplinary approach, demonstrated the increasing need and support towards cross-disciplinary research. In the committee are ICT practitioners from large transnational companies, computer engineers, transport engineers, lawyers, communications experts, persons working in defence-related posts, philosophers, medical researchers, leaders of non-government organizations and advocacy groups, anthropologists, sociologists, ethicists, and theologians.

This diverse group of people all came together under the theme *The Social Implications of Emerging Technologies*. At the core, the theme of the conference focuses on new technological innovations that are either here now, or about to be diffused onto the market. The fact that so many researchers of different backgrounds find the social implications of emerging technologies to be a relevant theme indicates the growing need for incorporating diverse feedback into the social innovation process. Engineers alone cannot hope to solve every issue or even understand every issue, and as the new IEEE tagline promotes, advancing humanity can only happen properly if diverse stakeholders are consulted, thereby coming together to provide holistic direction on the application and use of new technological innovations.

The caliber of the program committee members was reflected in the overall number of submissions received- full papers, short papers, and presentation only. There were about 120 papers submitted for review with a total of 70 papers being accepted at the conference. The review process was substantial with about 135 international expert reviewers reviewing two or more papers. I would like to thank the review panel for their time and commitment- many of whom turned around substantial review comments in less than 4 weeks from the time of receipt. Reviewers gave of their time freely, and where they could not accept to review additional papers, they were only too willing to direct me onward to others.

Of the 70 papers accepted, fifty-seven were full papers, and thirteen were presentation only papers. The papers were written by researchers in 15 countries including: Australia, Bangladesh, Belgium, Canada, Germany, Indonesia, Italy, Japan, Netherlands, New Zealand, Nigeria, Spain, United Arab Emirates, United Kingdom and United States of America. Of the 70 paper presentations, five papers will be presented via Skype at the conference. I would like to commend the authors for the manner in which they received critical review comments, and amended their papers accordingly. Two special tracks will be presented on day three of the conference- (1) location-based services for travel and tourism and (2) internet filtering and regulation-both of these sessions promise to be a highlight. What we have achieved together is a high quality list of papers, which I believe will make a long-lasting impression on the wider engineering community. There is much potential here in attracting new members to the Society, who may see new and novel ways in which they might be able to contribute in an associate membership capacity to the IEEE charter in the 21st century.

Welcome Message from The Program Chair

Finally, I am especially indebted to the nine hand-picked keynote speakers, plenary and theme speakers, and invited speakers who traveled from far and wide to present their cutting edge research on nanotechnology, ICT implants, cyborgs, DNA, ethics, privacy and the like. I have learnt so much from each and every one of you, and it has been a pleasure to correspond with you so often over the last 12 months on various aspects of your respective presentations. You are each at the cutting edge of your fields and it will be extremely special to see you altogether debating and discussing on technological issues that are destined to affect each and every one of us in the coming years.

Associate Professor Katina Michael
University of Wollongong
Program Chair — ISTAS 2010

Welcome Message from Organising Committee Chair

On behalf of the Organising Committee, I would like to welcome you all to the first ISTAS to be held in the Southern Hemisphere. For all of you who have travelled from near and far, Australia is a wonderful country to spend time in. We thank you for making the trip to Wollongong to be part of this conference. It is apparent from the submissions that Australia has a large contingent of researchers looking at the many aspects of social implication of technology. Also apparent is the high calibre of social impact researchers from around the world.

The University of Wollongong has a vision to be an international University recognised for originality and enterprise in exploring, communicating and applying knowledge to enrich individuals, their communities and the environment. What a fitting vision to be the host university of the 2010 International Symposium on Technology and Society.

The Wollongong Campus is located on the New South Wales coast, 80km south of Sydney and 3km from the centre of Wollongong. The campus combines a tranquil bushland setting with modern, state-of-the-art facilities and infrastructure that provides the perfect environment for learning. A comprehensive range of undergraduate and postgraduate courses are offered across nine faculties. In addition to this is the new Innovation Campus. A visionary initiative, UOW's Innovation Campus (iC) aims to be the best environment in the Asia — Pacific region for people and organisations to exchange and develop ideas and deliver innovative outcomes. It welcomes creative companies who can share this vision and who can use their imagination and skill to produce something new. Participants have an opportunity to work with UOW research teams in areas such as information and communications technology, multimedia, nanotechnology, biotechnology, health sciences, engineering technologies, intelligence and security and organisational management.

Again, welcome to Wollongong. We hope you enjoy the conference and your time in this part of the world. We look forward to seeing you again at ISTAS 2011.

Dr. Holly Tootell
University of Wollongong
Organising Committee Chair — ISTAS 2010

Welcome Message from SSIT Australia Chair

Advancing Technology for Humanity — IEEE's new tagline admirably sums up what engineers and technologists can aspire to in the 21st century. While our normal focus is "advancing technology", the Society on Social Implications of Technology encourages us to look further, to think about the relationship of our work to humanity.

Technologies aren't perfect. A technology may be unsuitable, unusable, or have dire unintended consequences. We need to be aware of these, to know our limits, and to draw on other disciplines and other experiences in our work. We have to look at technology from an environmental perspective, from a developmental perspective, from a sociological perspective, from a feminist perspective, to overcome these limits. That doesn't stop us from being engineers and technologists, but it does mean we have to think beyond the equations of a traditional engineering text. We need to take a broader view of technology, to adopt what usability specialist John Seely Brown calls "seeing differently".

These were among the motives that encouraged IEEE SSIT members in Australia to establish the Australian SSIT chapter in 2005. Since then we have held dozens of meetings, in most major Australian cities. We have held meetings on censorship ratings for on-line gaming, on National Broadband Network infrastructure, on technology and privacy, engineers and a low carbon economy, on implantables, and that great favourite of engineers, engineering disasters. Most recently 70 people attended our Melbourne forum for Professor Kevin Warwick from Reading University on The Cyborg Experiments, a keynote speaker at this conference.

Our committee, by accident, is equally representative of technologists working in academia, government, corporations and small business. With around 100 members across Australia, we are looking at ways to build active groups in each major centre.

Technology is a key feature of the development of our region, and the need to meet environmental and social goals is urgent. A new initiative we agreed at our planning day this year is networking across IEEE Region 10. Already we have SSIT members in many countries of the region who could network to build lecturer tours, other IEEE initiatives, and exchange ideas on building SSIT.

Since we were formed, SSIT Australia has provided the opportunity for IEEE members to participate in something beyond the day-to-day, and I would particularly like to congratulate Katina Michael and Holly Tootell for the outstanding work they have done in preparing this conference.

On behalf of SSIT Australia I would like to welcome all delegates to ISTAS 2010, which promises to be a stimulating exchange of information and ideas.

Dr. Greg Adamson

Chair, IEEE SSIT (Australia),
Vice-Chair, IEEE Victoria

Message from The Dean
Faculty of Informatics at the University of Wollongong

The Faculty of Informatics at the University of Wollongong is proud to be co-hosting the 2010 IEEE International Symposium on Technology and Society. It is very fitting that this symposium is being held at the University of Wollongong where a purpose-built faculty has been created to educate graduates who will become leaders and provide technological solutions to the complex problems in the information and communication industry and society at large.

Our academics have strong engagement with industry and conduct research at the forefront of their chosen disciplines and are often thought leaders in the research community. The deep understanding gained through active research pursuits is brought to the classroom to create a learning environment that inspires and nurtures curiosity in our students. Our postgraduate training program produces graduates with strong research skills and; knowledge of the underlying theories and their application to the solution of complex problems.

The Faculty is currently home to five of the nineteen research strengths in the university: Information and Communication Technology Research Institute (ICTR), Centre for Statistical and Survey Modelling (CSSM); Advanced Manufacturing; Centre for Business Services Science (CBSS); Centre for Mathematical Modelling and its Applications (CMMA).

I welcome you to the University of Wollongong and hope that you will enjoy the stimulation provided by participants of the symposium and the beautiful surroundings of the campus.

Professor Philip Ogunbona
The Dean, Faculty of Informatics
University of Wollongong

Welcome Message from The Head of the School of Information Systems and Technology at the University of Wollongong

The School of Information Systems and Technology (SISAT) is one of Australia's leading teaching and research centres for building, deploying and managing the latest computing technologies and business computing systems.

SISAT offers several high quality undergraduate and postgraduate degrees in the fields of information systems (IS), information and communication technology (ICT), and ICT management. We have about 20 academic staff who do the teaching and research. They are all highly qualified and experienced, coming from a range of cultures and backgrounds.

Our teaching programs are a well-balanced mix of theory and hands on activities in our up-to-date laboratories. All our undergraduate degrees also have work placement programs as part of the curriculum. Our graduates are highly sought after by industry and we have one of the best rates for graduate employment in the country (our graduates often find a full time position during their final year or within a few months of graduation.

The School is also very active in IT and IS research. We have a number of internationally recognised research groups working on location-based services, IT adoption, security and privacy issues in IT, strategic IT management and in many other related fields. These research groups have publications in many of the best journals and international and national conferences. We have also received significant research funding from the Australian Research Council and other international funding schemes.

Although we're part of a "local university" (and proud of it) our students come from all over the world. We have students from Botswana, Canada, China, Kuwait, Malaysia, Saudi Arabia, Singapore, Thailand, the US, and various parts of Europe.

Associate Professor Peter Hyland
Head of School, SISAT
University of Wollongong

Preface

In June 2006, Dr Holly Tootell returned from ISTAS in New York inspired to continue on her research path toward the study of the social implications of technology by long-term SSIT members Senior Research Professor Luis Kun and Associate Professor Joe Herkert. At the time, Dr Tootell was completing her PhD on location based services and national security under the supervision of Associate Professor Katina Michael, and together the pair pondered on the possibility that one day ISTAS might come to Australia, and even more amazingly to the University of Wollongong.

In 2007, Katina Michael noted a SSIT Newsletter calling for potential venues and themes to host ISTAS, preferably outside the United States. She saw this as a small window of opportunity and decided to write a brief proposal bidding for the possibility to host the conference in Australia. The SSIT Conference Committee considered the proposal and eventually decided in mid 2008 to convey the results that indeed, ISTAS10 would be held in Australia!

It was about that time that SSIT was solidifying as a chapter in Victoria, the second most populated state of Australia. Let by the Chapter Chair, Dr Greg Adamson, a small but vibrant community of SSIT members was forming. It was not long after that the chapter became an Australia-wide initiative. And today it is host to a great number of SSIT members, indicating that Australians are particularly mindful of research on the social implications of technology. The SSIT Chapter in Australia is now home to a growing web site of rich content, http://ssit.ieeevic.org/index.php; has an extremely professional committee with industry representatives, quality researchers, and members of the general public; and is an active chapter running monthly technical seminar series with a great number of outreach activities.

The year 2010 was made famous by Arthur C. Clarkes *Odyssey II* and subsequently Peter Hyams film based on the novel, titled 2010: *The Year We Make Contact*. It was only fitting that in this year, the conference theme focused on *The Social Implications of Emerging Technologies*. The conference call for papers was based around the possibilities that todays emerging technologies will have substantial implications for global citizens: from implantable devices for prosthesis or enhancement, to nanotechnology used in the health industry, to location based services and social networks. What are those social implications related to law, regulation and policy; to privacy and security and trust; to ethics and liberty and freedom; to religious beliefs and to social responsibility?

When I started my philosophy and theology studies, more than 25 years ago, I never thought that my life-long endeavor in the humanities would bring me within an iota of studies in information and communication technology (ICT) but somehow they have. I am often struck by the ethical dilemmas that will face engineers (of all types) in the future as they go about their new discoveries in the laboratories, clinical testing, and finally product diffusion. Because *we can*, it does not always mean *we should*. This ISTAS is probably the most interdisciplinary on record–it is in my opinion vital that we reach out as a community of experts in diverse disciplines to discuss and debate those technological issues that are currently transforming our society, but even more importantly to discuss and debate those emerging technologies that are forthcoming with broad reaching applications and implications, that may even change the very essence and definition of what we now hold to be "human".

Dr. M. G. Michael
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Associate Professor, Department of the History of Science, University of Wisconsin-Madison

Bernadette Schell
Professor and President's Advisor on Cybercrime, University of Ontario Institute of Technology

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Associate Professor, Philosophy Department, Rochester Institute of Technology

Philip Seltsikas
Chair of Business Information Systems, Faculty of Economics and Business, University of Sydney

Jun Shen
Doctor, Senior Lecturer, School of Information Systems and Technology, University of Wollongong

Peter Singleton
Director, Cambridge Health Informatics, and Principal Research Fellow, University College London

Matthew Sirotich
Honours (Class I) Graduate, School of Information Systems and Technology, University of Wollongong

Richard Spinello
Professor, Carroll School of Management, Boston College

Karl Stephan
Professor, Ingram School of Engineering, Texas State University

Zhaohao Sun
Senior Lecturer, Graduate School of Information Technology and Mathematical Sciences, Ballarat University

Suriadi Suriadi
Doctoral Candidate, Information Security Institute, Queensland University of Technology

Adam Sutton
Associate Professor, School of Social and Political Sciences, University of Melbourne

Nicolas Suzor
Chair of Electronic Frontiers Australia, Lecturer, School of Law, Queensland University of Technology

Judith Symonds
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Herman Tavani
Professor, Philosophy Department, Rivier College

Will Tibben
Lecturer, School of Information Systems and Technology, University of Wollongong

Marion Titterton
Dairy Extension Leader, Tasmanian Institute of Agricultural Research, University of Tasmania

Stephen Unger
Professor Emeritus, Computer Science and Electrical Engineering, Columbia University

David Vaile
Director, Cyberspace Law and Policy Centre, University of New South Wales

Gordon Waitt
Associate Professor, School of Earth and Environmental Sciences, University of Wollongong

Samuel Fosso Wamba
Senior Lecturer, School of Information Systems and Technology, University of Wollongong

International Reviewers

John Weckert
Professor, Centre for Applied Philosophy and Public Ethics, Charles Sturt University

Jonathan Weinberg
Professor, Faculty of Law, Wayne State University

Brian Wentz
Doctoral Candidate, Instructor, Towson University and Keystone College

Patrick Williams
Associate Professor, School of Humanities and Social Sciences, Nanyang Technological University

Robin Williams
Director, Research Centre for Social Sciences, Institute for the Study of Science, Technology and Innovation, The University of Edinburgh

Dean Wilson
Doctor, School of Criminology, Faculty of Arts, Monash University

Khin Than Win
Doctor, Senior Lecturer, School of Information Systems and Technology, University of Wollongong

Dave Wolfgang
Field Studies Director, Extension Veterinarian Department of Veterinary and Biomedical Sciences, Penn State University

Tom Worthington
Adjunct Lecturer, School of Computer Science, The Australian National University

Jun Yan
Doctor, Senior Lecturer, School of Information Systems and Technology, University of Wollongong

Ping Yu
Doctor, Senior Lecturer, School of Information Systems and Technology, University of Wollongong

Reza Zamani
Doctor, Senior Lecturer, School of Information Systems and Technology, University of Wollongong

Session Information

For the greater part the conference will have three parallel tracks going at any one point in time. Each session will be chaired by a session chair. Keynotes, plenary speakers and invited speakers will deliver their talks in Bld 67 Rm 107. Track two will take place in Bld. 67, Rm 104, and track three in the breakout room, Bld 40, Rm 131.

Track One, 67.107

Track Two, 67.104

Conference General Information

Registration

Registration Type	Early Bird	Standard
IEEE Member and UOW Staff	$620	$670
Non-IEEE Member	$720	$800
Student*		$375
Additional Paper**		$120 each

Early Bird Registration is Available Until 5 pm AEST 20 March 2010

*All student registrations must be accompanied by an email or fax with a letter from their Head of Department stating that they are currently an enrolled student. Email to holly@uow.edu.au or fax to 61 2 42214045

Sponsor Registration

Sponsors should complete the following form and fax it through to the University Conference and Function Centre on (02) 4221 8001ss

Optional Registrations	Cost
Asia-Pacific Nanobionics Symposium Wednesday 9 June PM UOW Innovation Campus, AIIM Building	$35
Fifth Workshop on the Social Implications of National Security Thursday 10 June UOW Innovation Campus, ITAMS Building	$100

Gong Shuttle

There is a free shuttle bus around Wollongong. The Shuttle operates Monday to Friday from 7.00 am to 10.00 pm every 10 minutes during the AM and PM peak (7.00 am to 9.00 am & 3.00 pm to 6.00 pm) and every 20 minutes off-peak. For more information see http://premierillawarra.com.au/shuttle.html. This site includes a comprehensive map.

Wollongong CBD is a 30 minute walk from the University on well defined walking paths. Taxi and rental cars are also available.

The Welcome Function and Conference Dinner are to be held in the CBD, a 10 minute walk from most major hotels. Taxi transport would be a minimal charge if required. For people staying further out of town, but still in the local area, local staff would be willing to provide private transport.

Conference Venue and Location

Location Map of Wollongong and UOW

Off-Campus Accommodation Locations

1. **International House:** Hindmarsh Ave, Nth Wollongong
2. **Weerona College:** Throsby Dr, Gwynneville
3. **Campus East:** Cowper St, Fairy Meadow
4. **Kooloobong:** Northfields Ave, Wollongong
5. **Graduate House:** Northfields Ave, Wollongong
6. **Keiraview:** Keira St, Wollongong
7. **Gundi:** Marr St, Wollongong

Sydney Central Business District (CBD)
90 minutes by train or freeway

Sydney Airport
60 minutes by freeway

Sutherland
30 minutes by freeway

Conference Venue and Location

Map of the whole UOW Campus
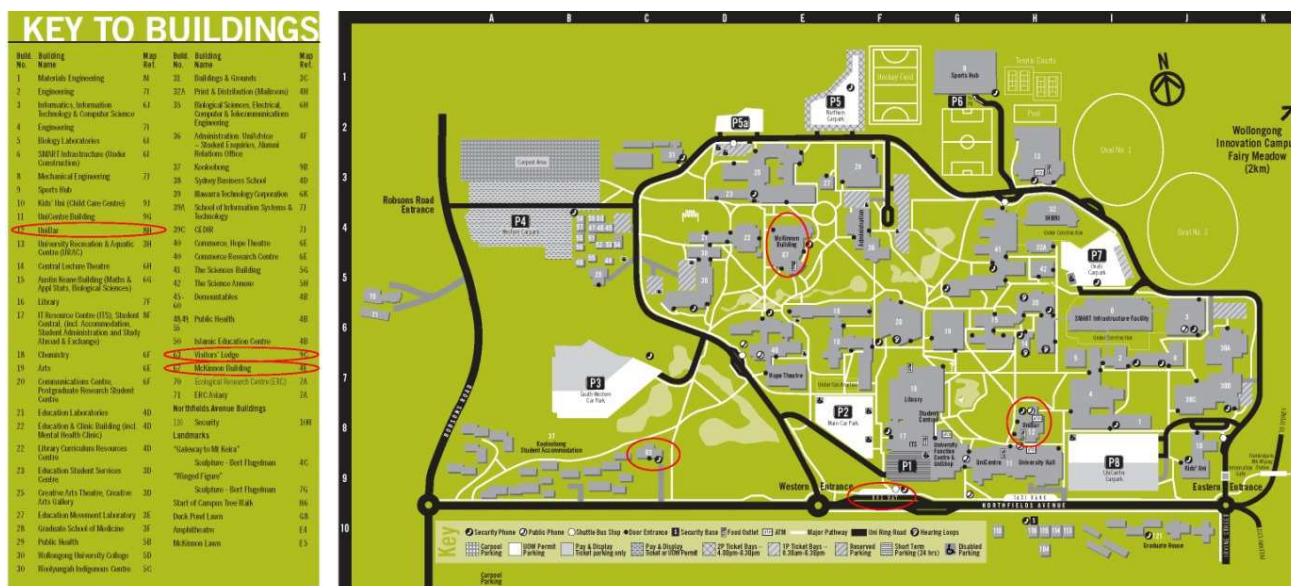
UniBar — Welcome Drinks
Building 67 — McKinnon Building — Conference Venue
Building 63 — Lodge — accommodation site
Bus Stop

Close up of 67 with directions from the bus stop
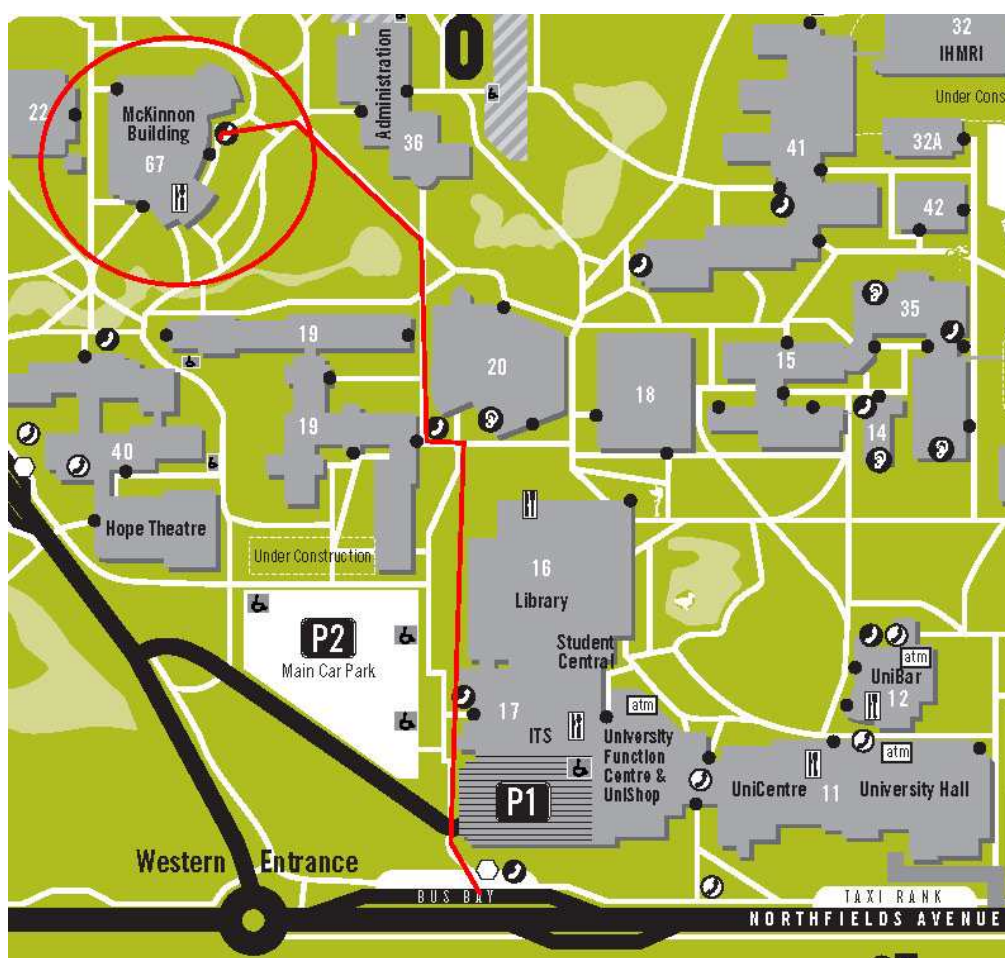
Conference Activities

Welcome Drinks @ UniBar

The Monday night Welcome Drinks will be held at the UOW UniBar. Centrally located on campus, the UniBar is a popular student location. They provide tasty food and a place for colleagues to relax and enjoy the green campus.

Conference Dinner @ City Beach Function Centre

The Tuesday night Conference Dinner is being held at the stylish City Beach Function Centre. It is located on the sensational sands of City Beach on Marine Drive, with absolute frontage of the Pacific Ocean.

Conference Activities

About the Innovation Campus
The Innovation Campus (iC) is being developed by the world-class University of Wollongong in conjunction with industry leading construction partner, Baulderstone. iC's first building, iC Central, opened in mid-2008, followed by the Australian Institute for Innovative Materials (AIIM) and the Institute for Transnational and Maritime Security (ITAMS) in 2009. The Sydney Business School and Digital Media Centre will open in 2010 while a second AIIM building and a commercial building (iC Enterprise 1) are under construction and will be completed in 2011.

To be developed in stages, the campus will provide a total of 135,000 sqm of gross floor area over the 33 hectare site for research and office space; retail and service facilities; hotel and conference centre and residential accommodation.

iC was established with seed funding from the New South Wales State Government and has ongoing support at the Commonwealth, State and Local government levels. iC is a long term project that will span 10-15 years and upon completion some 5000 people will be part of iC's working community of business and research enterprises.

2nd Asia-Pacific Symposium on Nanobionics (Relevant Symposium to SSIT, iC, AIIM Building)

Professor Gordon Wallace will be holding the 2nd Asia-Pacific Symposium on Nanobionics at the Innovation Campus 9–11 June. The field of NanoBionics — the merging of biology and electronics using the most recent advances in nanotechnology promises to revolutionise this exciting area. The potential implications for health and medical research and the increased quality of life for patients are highly significant. To achieve such goals there is a need to bring together clinicians, scientists, engineers and mathematicians in a collaborative environment. The purpose of this symposium is to provide that forum. http://www.electromaterials.edu.au/news/symposium2010june.html

Fifth Workshop on National Security, iC, ITAMS Building

10 June–Social Implications of Location Based Services

This workshop is to be held on the Innovation Campus and will be hosted by the Centre for Transnational Crime Prevention (CTCP), Faculty of Law in concert with the School of Information Systems and Technology, Faculty of Informatics. The executive director of CTCP is Professor Andrew Goldsmith and you can find out more about the Centre here: http://ctcp.uow.edu.au/index.html

Research at the Centre for Transnational Crime Prevention (CTCP) examines the nature of organised cross-border criminal activities that affect regional and global security, including terrorism, human trafficking, money-laundering, cyber crime, and identity fraud. CTCP researchers represent a variety of disciplines, and their research seeks to improve global understanding of the causes, dynamics and manifestations of these threats and to address detection and prevention strategies for governments, law enforcement agencies and nongovernmental organisations.

SSIT Australia Meeting
7 June – Before the Welcome Drinks at the UniBar

BOG Meeting
9 June – The IEEE SSIT Board of Governors Meeting will be held at the conclusion of ISTAS 2010.

Keynote Speech

Keynote Speech 1

Date/Time: Tuesday, 7 June 2010 / 10:15 – 10:45
Session A: A Vision for Nanotechnology
Session Chair: Peter Hyland
Venue/Room: 67.107

"Nanotechnology: Will it Revolutionise Health Care?"

Professor Gordon Wallace
University of Wollongong, Australia,
Director of the Intelligent Polymer Research Institute,
University of Wollongong Executive Research Director of the Australian
Research Council Centre of Excellence for Electromaterials Science
E-mail: gordon_wallace@uow.edu.au

Biography

Professor Gordon Wallace's research interests include organic conductors, nanomaterials and electrochemical probe methods of analysis and the use of these in the development of intelligent polymer systems. A current focus involves the use of these tools and materials in developing biocommunications from the molecular to skeletal domains in order to improve human performance via medical Bionics.

Gordon is a Fellow of the Australian Academy of Science, Australian Academy of Technological Sciences and Engineering (ATSE), Institute of Physics, and Royal Australian Chemical Institute (RACI). He received the Inaugural Polymer Science and Technology Award from the Royal Australian Chemical Institute (RACI) in 1992; the RACI Stokes Medal for Research in Electrochemistry in 2004; and the HG Smith Memorial award from the RACI in 2008. He was awarded an ETS Walton Fellowship by the Science Foundation Ireland in 2003; named NSW Scientist of the Year (Chemistry) in 2008; appointed as a Professor in the World Class University by the South Korean Government in 2009; received the SPIE Smart Materials Research Lifetime Achievement Award in the USA in March 2009 and was honoured with the 2009 Smart Structures and Materials Lifetime Achievement Award.

He has published more than 450 refereed publications and a monograph (3rd Edition published in 2009) on Conductive Electroactive Polymers: Intelligent Polymer Systems and supervised more than 55 PhD students to completion.

Abstract

Health Care as we know it involves diagnosis and treatment with an increasing emphasis on preventative "therapies". In each of these areas, new materials are having an impact by, for example, being able to "sense" vital signs such as temperature or heart rate and even deliver a drug when stimulated. New materials also provide the basis for medical implants that can restore function by providing structural support

Keynote Speeches

for tissue engineering or facilitate nerve repair and so enhance neural prosthetics such as the cochlear ear implant. Advances in materials also underpin the revolution in communications technologies we find ourselves immersed in. These communication systems are now being merged with the diagnostic and treatment materials discussed above to deliver health care therapies in a more effective and efficient manner

Materials Science and Nanotechnology: The recent revolution in materials science can, in part at least, be attributed to the arrival of nanotechnology. Imagine, for a given material composition, being able to manipulate chemical, mechanical, optical and electronic properties simply by controlling structure in the nanodomain — no need to imagine - we can now do that. Being able to change these properties by varying the nanostructure leads to an ability to create nanostructured interfaces that interact effectively with biological components (the basis of all medical diagnostics and treatments). That more effective biological interactions are available using nanostructured materials is understandable given the dimensions in which biology operates from nanometers for protein and DNA to microns for living cells. Perhaps an unexpected and certainly less heralded aspect of nanotechnology as applied to materials science has been the ability to create nanoformulations of difficult to handle materials with characteristics that render them amenable to processing and device fabrication.

The examples presented in this presentation illustrate these advances using a recently discovered group of materials with great promise for use in health care: organic conducting polymers. These materials, organic in nature yet with the electronic properties of metals, provide a unique interface with living systems from the cellular to the skeletal level.

Keynote Speech 2

Date/Time: Tuesday, 7 June 2010 / 10:45 – 11:35
Session A: A Vision for Nanotechnology
Session Chair: Peter Hyland
Venue/Room: 67.107

In Defence of the Precautionary Principle

Professor John Weckert
Charles Sturt University, Australia
School of Humanities and Social Sciences,
Charles Sturt University Centre for Applied Philosophy and Public Ethics,
IT and Nanotechnology: Ethics of Emergent Technology
E-mail: jweckert@csu.edu.au

Biography

John Weckert researches mainly in the areas of ethics and new technologies, concentrating on information and communication technology and nanotechnology. He is founding Editor-in-Chief of the journal Nanoethics: Ethics for Technologies that Converge at the Nanoscale. He currently holds an ARC Linkage grant with the Australian Computer Society on ethics and regulation in the ICT industry and a National Science Foundation (US) grant on nanotechnology and human enhancement. His fields of special interest are: Nanotechnology, Information and Communication Technologies, Methods for Ethically Assessing Emergent Technologies, Philosophy of Technology

Abstract

The precautionary principle is thought by many to be a useful strategy for decision and policy making but by many others to be useless at best and dangerous at worst, potentially stifling beneficial scientific and technological developments. In this talk it will be argued that it can be a coherent and useful principle. First the principlewill be examined and clarified and then defended against a number of criticisms. Examples from nanotechnology and geoengineering will used as illustrations of good and bad uses of the principle.

Plenary/Theme Lectures

Plenary/Theme Lectures 1

Date/Time: Tuesday, 7 June 2010 / 01:35 – 02:30
Session C: ICT Implants in the European Union
Session Chair: Mark Gasson
Venue/Room: 67.107

Ethical Aspects of ICT Implants in the Human Body (Opinion no. 20): European Group on Ethics in Science and New Technologies

Professor Rafael Capurro
Distinguished Researcher in Information Ethics,
School of Information Studies, University of Wisconsin-Milwaukee, USA
Director of the Steinbeis-Transfer-Institute Information Ethics (STI-IE)
Editor in Chief of the International Review of Information Ethics (IRIE)
Director of the International Center for Information Ethics (ICIE)
Member of the European Group on Ethics and New Technologies to the
European Commission (EGE) (2001–2004; 2005–2009).
Co-founder of the Africa Network for Information Ethics (ANIE)
Red Latinoamericana de ética de la información (RELEI).
E-mail: Rafael@capurro.de

Biography

Rafael Capurro was born in 1945 in in Montevideo, Uruguay. He holds a licentiate in Philosophy from Universidad del Salvador, Buenos Aires, Argentina (1970). In 1978 he received his Dr.phil. in Philosophy from Dsseldorf University and he completed his postdoctoral teaching qualification (Habilitation) in Practical Philosophy (Ethics) from Stuttgart University in 1989. Between 1987 and 2004 he was a lecturer at the Institute of Philosophy Stuttgart University and then between 1986 and 2009 he was a Professor (em.) of information management and information ethics at Stuttgart Media University, Germany.

His recent publications include: Localizing the Internet. Ethical Aspects in Intercultural Perspective by Rafael Capurro, Johannes Frhbauer, Thomas Hausmanninger (Eds.), Munich 2007; The Public / Private Debate. A Contribution to Intercultural Information Ethics by Makoto Nakada and Rafael Capurro. In: Rocci Luppicini and Rebecca Adell (Eds.): Handbook of Research in Technoethics, Hershey PA: IGI Global, 2009, 339-353; and Ethics and Robotics (R. Capurro & Michael Nagenborg, Eds.), IOS Press, 2009.

Plenary/Theme Lectures

██████████   **Abstract**

At first sight ICT implants are ethically unproblematic if we think for instance about cardiac pacemakers. However, although ICT implants may be used to repair deficient bodily capabilities they can also me misused, particularly if these devices are accessible via digital networks. The idea of letting ICT devices get under our skin in order not just to repair but even to enhance human capabilities gives rise to science fiction visions with threat and/or benefit characteristics. The intimate relation between bodily and psychic functions is basic to our personal identity. Consequently the objective of this Opinion is primarily to raise awareness and questions concerning the ethical dilemmas created by a range of implants in this rapidly expanding field.

Plenary/Theme Lectures 2

Date/Time: Tuesday, 8 June 2010 / 09:00 – 09:45
Session C: Microchip Implants for Humans — The Risks and the Rewards
Session Chair: Keith Miller
Venue/Room: 67.107

Human Enhancement: Could you Become Infected with a Computer Virus?

Dr. Mark Gasson
*University of Reading, United Kingdom Senior Research Fellow,
School of Systems Engineering Cybernetic Intelligence Research Group,
University of Reading, UK.
E-mail: m.n.gasson@rdg.ac.uk*

Biography

Dr. Mark Gasson is a senior research fellow at the School of Systems Engineering, University of Reading, UK. He obtained his first degree in Cybernetics and Control Engineering in 1998 from the Department of Cybernetics at Reading, and was subsequently given a research post. He obtained his Ph.D. in 2005 for developing an invasive interface between the nervous system of a human volunteer and a computer system. His current research predominantly focuses on user-centric applications of emerging technologies, with specific focus on pushing the envelope of Human-Machine interaction. In 2009 he demonstrated the use of mobile phone technology for creating detailed behavioural profiles, and he also became the first human to be infected by a computer virus using an RFID device implanted in his hand.

Dr. Gasson considers public engagement of science as an essential component of the scientific endeavour, and as such has had an active involvement spanning over ten years. Based on the thesis that public interest is generated through direct dialogue, Dr. Gasson aims to motivate and maintain interest by making science accessible and relevant through a variety of activities. Dr. Gasson frequently delivers invited public lectures and workshops internationally, aimed at audiences of varying ages.

Abstract

Experiments demonstrating human enhancement through the implantation of technology in healthy humans have been performed for over a decade by some academic research groups. More recently, technology enthusiasts have begun to realize the potential of implantable technology such as RFID. It has taken the wider academic community some time to agree that meaningful discourse on the topic is of value. As developments in medical technologies point to the possibilities for enhancement, this shift in thinking is not too soon in coming. In this paper it is demonstrated that implantable RFID devices have evolved to the point whereby we should consider them as simple computers. To this end, the infection with a computer virus of an RFID device implanted in a human is presented. Coupled with our developing concept of the body and its boundaries, it is argued that this has given rise to the worlds first human infected with a computer virus.

Plenary/Theme Lectures 3

Date/Time: Tuesday, 8 June 2010 / 01:25 – 02:10
Session A: Cyborgs
Session Chair: Shiro Uesugi
Venue/Room: 67.107

The Challenge of Cyborg Rights

Dr. Roger Clarke
Xamax Consultancy, Visiting Professor,
School of Computer Science, ANU
Director, Xamax Consultancy.
E-mail: Roger.Clarke@xamax.com.au

Biography

Roger Clarke is a consultant focusing on strategic and policy aspects of eBusiness, information infrastructure, and dataveillance and privacy, working through his own company, Xamax Consultancy. He has a long list of both formal and informal publications, and has been a Visiting Professor at universities in Australia and overseas. He has been an active privacy advocate since 1972, an active privacy researcher since 1975, an active privacy consultant since 1977, and a Board member of APF since its inception in 1987. In 2009, he was awarded only the second-ever Australian Privacy Medal.

Abstract

The first generation of cyborgs is alive, well, walking among us, and even running. Pacemakers, clumsy mechanical hands, and renal dialysis machines may not match the movie-image of cyborgs, but they have been the leading wave. Greater challenges are posed by the legs of sprinter Oscar Pistorius, and by implants of both the cochlear and RFID varieties.People who are using prostheses to recover lost capabilities will seek to protect their existing rights. People who have lost capabilities but have not yet got the relevant prostheses will seek the right to have them. Enhanced humans will seek additional rights, to go with the additional capabilities that they have. Professional engineers have an obligation to anticipate these developments, and to brief political, social and economic institutions on their nature, impact and implications. They have to date signally failed to do so, and urgent action is needed.

Invited Talks

Invited Talk 1

Date/Time: Tuesday, 8 June 2010 / 09:45 – 10:30
Session A: Microchip Implants for Humans — The Risks and the Rewards
Session Chair: Keith Miller
Venue/Room: 67.107

Social-Technical Issues Facing the Humancentric RFID Implantee Sub-culture through the Eyes of Amal Graafstra

Mr. Amal Graafstra
Author, RFID Toys, USA
Director of IT, Outback Systems
E-mail: amal@amal.net

Biography

RFID Toys author Amal Graafstra, is the owner of several technology and mobile communications companies and a double RFID implantee. Amal loves thinking up interesting ways to combine and apply various technologies in his daily life.

Since learning about RFID technology used in cats and dogs for identification, Amal wanted to leverage that technology himself. Getting implants meant there was no need to carry an RFID access card around and he could implement his own RFID access control systems instead of buying expensive off-the-shelf products. Soon after getting his first implant and posting some pictures of the process for a few friends, word quickly spread over the Internet and soon he found himself talking to everyone from industry players to clergy to book publishers about RFID technology and its possibilities.

Amal has been interviewed about his adventures in RFID by television, print, and online news media from around the world, including the Discovery Channels Daily Planet program. He uses his RFID implants to log into his computer, access his front door and opening his car door.

Abstract

Radio-frequency identification (RFID) tags and transponders have traditionally been used to identify domesticated animals so that they can be reunited with their owners in the event that they stray. In the late 1990s,

Invited Talks

industry started to investigate the benefits of using RFID to identifying non-living things throughout the supply chain toward new efficiencies in business operations. Not long after, people began to consider the possibilities of getting RFID tag or transponder implants for themselves. Mr Amal Graafstra of the United States is one of the first, and probably most well-known 'do it yourselfer' (DIY) implantees, who enjoys building customized projects which enable him to interact with his private social living space. Since 2005, hundreds of people have embarked on a mission to interact with their mobile phones, their cars, and their house via a chip implant, providing personalized settings for their own ultimate convenience. This paper presents some of the socio-technical issues facing the RFID implantee sub-culture, namely health and safety, privacy, security, regulation, and societal perceptions. The paper concludes with a list of recommendations related to implantables for hobbyists.

Invited Talks

Invited Talk 2

Date/Time: Tuesday, 9 June 2010 / 9:20 – 10:00
Session A: Social Implications of Technology
Session chair: Lucy Resnyansky
Venue/Room: 67.107

In Defense of Privacy: The Concept and the Regime

Professor Colin Bennett
Professor, Department of Political Science,
University of Victoria, Australia.
E-mail: cjb@uvic.ca

Biography

Colin Bennett received his Bachelor's and Master's degrees from the University of Wales, and his Ph.D from the University of Illinois at Urbana-Champaign. Since 1986 he has taught in the Department of Political Science at the University of Victoria. From 1999-2000, he was a fellow at Harvards Kennedy School of Government. In 2007 he was a Visiting Fellow at the Center for the Study of Law and Society at University of California, Berkeley.

His research has focused on the comparative analysis of surveillance technologies and privacy protection policies at the domestic and international levels. In addition to numerous scholarly and newspaper articles, he has published three books: Regulating Privacy: Data Protection and Public Policy in Europe and the United States (Cornell University Press, 1992); Visions of Privacy: Policy Choices for the Digital Age (University of Toronto Press, 1999, with Rebecca Grant); The Governance of Privacy: Policy Instruments in the Digital Age (The MIT Press, 2006 with Charles Raab). He has completed policy reports on privacy protection for the Canadian government, the Canadian Standards Association, the Privacy Commissioner of Canada, the European Commission, and the UK Information Commissioner. He is currently completing projects on the subject of "privacy advocacy" in Western societies, as well as on the politics of identity cards. He is currently the co-investigator of a SSHRC Major Collaborative Research Initiative grant entitled "The New Transparency: Surveillance and Social Sorting."

He teaches a range of courses on US politics, political analysis and information and communications policy.

Abstract

It has recently become fashionable within the surveillance studies community to subject the concept and regime of "privacy protection" to some very rigorous criticism. "Privacy" and all that it entails is argued to be too narrow, too based on liberal assumptions of subjectivity, too implicated in rights-based theory and discourse, insufficiently sensitive to the social sorting and discriminatory aspects of surveillance, and overly embroiled in spatial metaphors about "invasion" and "intrusion." As a concept, and as a way to frame the various social and political challenges encountered within "surveillance societies," it is inadequate. These critiques are important, and to some extent, have set scholarly inquiry on a new, exciting and broader, trajectory than that offered by privacy scholars. On closer examination, however, these critiques are often based on some faulty assumptions about the contemporary framing of the privacy issue, and about the governance of the issue. Privacy, as a concept, regime, a set of policy instruments, and as a way to frame civil society activism, shows an extraordinary resilience. Surveillance scholars must learn to live with it.

Invited Talk 3

Date/Time: Tuesday, 9 June 2010 / 10:00 – 10:40
Session A: Social Implications of Technology
Session chair: Lucy Resnyansky
Venue/Room: 67.107

Of Weighty Reasons and Indiscriminate Blankets: The Retention of DNA for Forensic Purposes

Dr. Carole McCartney
University of Leeds/Bond University
Lecturer in Law at Leeds University
EU Marie Curie International Research Fellowship at Bond University
Project Manager for the Nuffield Council on Bioethics
E-mail: C.I.McCartney@leeds.ac.uk

Biography

Dr Carole McCartney is a lecturer in criminal law and criminal justice at the University of Leeds, previously of Bond University, Queensland, Australia. Carole has written on Australian justice, Innocence Projects, and DNA and criminal justice, authoring Forensic Identification and Criminal Justice: Forensic Science, Justice and Risk (2006). She established an Innocence Project at the University of Leeds in 2005, of which she remains Director. She was project manager for the Nuffield Council on Bioethics report The Forensic Uses of Bio-information: Ethical Issues (2007) and is currently leading a Nuffield Foundation project on The Future of Forensic Bioinformation; and teaching projects on forensic science education and researching forensic regulation. She recently secured an EU Marie Curie international research fellowship (2009-2012) on Forensic Identification Frontiers, which sees her based at the Centre for Forensic Excellence and Bond University for two years.

Abstract

This paper explores the ramifications of S & Marper v UK (2008), where the European Court of Human Rights, in ruling the UKs DNA retention regime breached human rights, was 'struck by the blanket and indiscriminate nature' of the power to retain DNA and stated that the UK Government required 'weighty reasons' to justify the retention of DNA in cases of unconvicted individuals. Since the ruling, the UK Government has drafted a new retention regime but serious doubts remain whether the issue of DNA retention will have been satisfactorily resolved.

Dinner Speaker

Date/Time: Tuesday, 8 June 2010 / 7:30 pm
Session Chair: Peter Hyland
Venue/Room: Citybeach Function Centre

Q & A for Kevin Warwick on Cyborg 1.0, Cyborg 2.0)

Professor Kevin Warwick
University of Reading, United Kingdom.
Professor of Cybernetics, University of Reading
E-mail: k.warwick@reading.ac.uk

Biography

Kevin Warwick is Professor of Cybernetics at the University of Reading, England, where he carries out research in artificial intelligence, control, robotics and biomedical engineering. He is a Chartered Engineer (CEng.) and is a Fellow of The Institution of Engineering & Technology (FIET). He is the youngest person ever to become a Fellow of the City & Guilds of London Institute (FCGI). Kevin was born in Coventry, UK and left school to join British Telecom, at the age of 16. At 22 he took his first degree at Aston University, followed by a PhD and a research post at Imperial College, London. He subsequently held positions at Oxford, Newcastle and Warwick universities before being offered the Chair at Reading, at the age of 33.

He has been awarded higher doctorates (DScs) both by Imperial College and the Czech Academy of Sciences, Prague. He was presented with The Future of Health technology Award from MIT (USA), was made an Honorary Member of the Academy of Sciences, St.Petersburg and received The Mountbatten Medal in 2008. In 2000 Kevin presented the Royal Institution Christmas Lectures, entitled "The Rise of The Robots". He has also been awarded Honorary (DSc) Degrees by the Universities of Aston and Coventry. Kevins research involves robotics and he was responsible (with Dr. Jim Wyatt) for Cybot, a robot exported around the world as part of a magazine "Real Robots" — this resulted in royalties totalling over 1M for Reading University. Robots designed and constructed by Kevins group (Dr Ian Kelly, Dr Ben Hutt) have been on permanent interactive display in the Science Museums in London, Birmingham and Linz.

Kevins recent research involves a collaborative project with the Oxford neurosurgeon, Prof. Tipu Aziz, using intelligent computer methods to predict the onset of Parkinsonian tremors such that they can be stopped by means of a deep brain implant. In 2007 this work was hailed in the Mail on Sunday as "the most significant recent advance in biomedical engineering".

Sponsors

Technical Program

Monday, 7 June 2010

09.00 onwards   **Registration**; **Venue**: McKinnon Building, Bld 67, Level 1, Foyer

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                       Welcome Messages
Date/Time   Monday, 7 June 2010 / 09:50 – 10:15
Venue   67.107
Chair   Mark Gasson
                       ISTAS 2010 General Chair

09:50 – 10:00   **Welcome Remarks**
                       Judy Raper
                       UOW PVC Research

10:00 – 10:05   **Opening Comments**
                       Greg Adamson
                       SSIT Australia

10:05 – 10:10   **Welcome Remarks**
                       Mark Montrose
                       IEEE Division VI Director

10:10 – 10:15   **Welcome Remarks**
                       Janet Rochester
                       IEEE SSIT Past President

Session: A   **A Vision of Nanotechnology**   *(Keynote Speeches)*
Date: Monday, 7 June 2010
Time: 10:15 – 11:35
Chair(s):   *Peter Hyland*
Venue: 67.107

Keynote Speech 1

Time   10:15 – 10:45
Venue   67.107
               Nanotechnology: Will it Revolutionise Health Care?   **Pg. Info-31**
               Professor Gordon Wallace, University of Wollongong, Australia

Keynote Speech 2

Time   10:45 – 11:35
Venue   67.107
               In Defence of the Precautionary Principle   **Pg. Info-33**
               Professor John Weckert, Charles Sturt University, Australia

Technical Program

Session: B1   **Regulating Emerging Technologies**   *(Track One)*
Date: Monday, 7 June 2010
Time: 11:35 – 12:35
Chair(s):   *Greg Adamson*
Venue: 67.107

Paper ID: P081   Time: 11:35 – 12:05   Pg. 3

Regulating Beyond Nanotechnology Do Nano-Specific Problems Require Nano-Specific Solutions?

Lyria Bennett Moses

Paper ID: P040   Time: 12:05 – 12:35   Pg. 3

An Approach to Studying Location-based Services Regulation in Australia

Roba Abbas

Session: B2   **Data Security**   *(Track Two)*
Date: Monday, 7 June 2010
Time: 11:35 – 12:35
Chair(s):   *Michael Arnold*
Venue: 67.104

Paper ID: P001   Time: 11:35 – 12:05   Pg. 4

Emerging Consumers View of Secondary Uses of Medical Data

Jennifer Heath

Paper ID: P047   Time: 12:05 – 12:35   Pg. 4

If it's Encrypted its Secure! The Viability of US State-Based Encryption Exemptions

Mark Burdon, Rouhshi Low and Jason Reid

12.35 – 01.35	Boxed Lunch @ *Bld 67, Level 1, Foyer*

Technical Program

Session: C   **ICT Implants in the European Union**   *(Plenary/Theme Lectures 1)*
Date: Monday, 7 June 2010
Time: 01:35 – 02:30
Chair(s):   *Mark Gasson*
Venue: 67.107

Plenary/Theme Lectures 1

Time   01:35 – 02:30
Venue   67.107
                 Ethical Aspects of ICT Implants in the Human Body (Opinion no. 20):   **Pg. Info-34**
                 European Group on Ethics in Science and New Technologies
                 Professor Rafael Capurro, Distinguished Researcher in Information Ethics,
                 School of Information Studies, University of Wisconsin-Milwaukee, USA

Session: D1   **RFID Acceptance and Privacy**   *(Track One)*
Date: Monday, 7 June 2010
Time: 02:30 – 03:30
Chair(s):   *Judith Symonds*
Venue: 67.107

Paper ID: P015   **Time: 02:30 – 03:00**   **Pg. 5**

Continuous RFID-enabled Authentication and its Privacy Implications

Stan Kurkovsky, Ewa Syta and Bernardo Casano

Paper ID: P057   **Time: 03:00 – 03:30**   **Pg. 5**

**The Impact of Personality on Acceptance of Privacy-sensitive Technologies: A Comparative
Study of RFID and Finger Vein Authentication Systems**

Shiro Uesugi, Hitoshi Okada and Toko Sasaki

Session: D2   **ICT Collaboration**   *(Track Two)*
Date: Monday, 7 June 2010
Time: 02:30 – 03:30
Chair(s):   *Roba Abbas*
Venue: 67.104

Paper ID: P056   **Time: 02:30 – 03:00**   **Pg. 6**

The ICTs-mediated Collaboration as a System of Social Activity

Lucy Resnyansky

Paper ID: P019   **Time: 03:00 – 03:30**   **Pg. 6**

Equilibrium for CMC Systems' Alteration — An Intercultural Perspective (via Skype)

Malik Aleem Ahmed via Skype

Technical Program

Session: D3   ***3G Mobile and Social Networking***   ***(Track Three)***
Date: Monday, 7 June 2010
Time: 02:30 – 03:30
Chair(s):   ***Mark Burdon***
Venue: 40.131

Paper ID: P123   **Time: 02:30 – 03:00**   **Pg. 7**

3G Mobile Multimedia Services (MMS) Utilization in Indonesia: An Exploratory Research

Indrawati, San Murugesan and Murali Raman

Paper ID: P117   **Time: 03:00 – 03:30**   **Pg. 7**

Using a Social Informatics Framework to Study the Effects of Location-Based Social Networking on Relationships between People: A Review of Literature

Sarah Jean Fusco, Katina Michael and M. G. Michael

03.30 – 03.50	Afternoon Tea @ Foyer

Session: E1   ***Positioning and RFID Technology***   ***(Track One)***
Date: Monday, 7 June 2010
Time: 03:50 – 05:20
Chair(s):   ***Stan Kurkovsky***
Venue: 67.107

Paper ID: P044   **Time: 03:50 – 04:20**   **Pg. 8**

RFID Deployment and Use in the Dairy Value Chain: Applications, Current Issues and Future Research Directions (via Skype)

Samuel Fosso Wamba and Alison Wicks

Paper ID: P026   **Time: 04:20 – 04:50**   **Pg. 8**

Uniwide WiFi Based Positioning System

William Ching Rue Jing Teh, Binghao Li and Chris Rizos

Paper ID: P004   **Time: 04:50 – 05:20**   **Pg. 9**

The RFID Tag Pictorial Glossary Project

Judith Symonds and John Ayoade

Technical Program

Session: E2   **Social Media in Education**   *(Track Two)*
Date: Monday, 7 June 2010
Time: 03:50 – 05:20
Chair(s):   *Michael Phillips*
Venue: 67.104

Paper ID: P055   **Time: 03:50 – 04:20**   **Pg. 9**

The Use of Wearable Point-of-View (POV) Technologies in an Educational Context

Alexander Hayes, Leo Gaggl, Geoff Lubich and Craig Lubich

Paper ID: P002   **Time: 04:20 – 04:50**   **Pg. 9**

Emergence of Creativity in Learning via Social Technologies

Sophie Nichol

Paper ID: P029   **Time: 04:50 – 05:20**   **Pg. 10**

The Role of Experts in Social Media — Are the Tertiary Educated Engaged?

E. Cheng, S. Davis, I. Burnett and C. Ritz

Session: E3   **Information Security and Surveillance**   *(Track Three)*
Date: Monday, 7 June 2010
Time: 03:50 – 05:20
Chair(s):   *David Wallace*
Venue: 40.131

Paper ID: P109   **Time: 03:50 – 04:20**   **Pg. 10**

A Potential Loss of Trust as a Result of the Conflicting Messages within Information Security Research

Daniel Oost

Paper ID: P091   **Time: 04:20 – 04:50**   **Pg. 10**

Surveillance Monitoring and Information Assurance Work Systems

Peter Goldschmidt

Paper ID: P008   **Time: 04:50 – 05:20**   **Pg. 11**

A Careful Design for a Tool to Detect Child Pornography in P2P Networks

Iván Pau de la Cruz, Celia Fernández Aller, Sergio Sánchez García and Justo Carracedo

05.20 – 05.30   Close

Technical Program

05.30 – 06.30	SSIT Australia Meetings

06.30 – 07.30	UniBar

*** DAY 1 END ****

Tuesday, 8 June 2010

08.30 onwards   **Registration**; **Venue**: McKinnon Building, Bld 67, Level 1, Foyer

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Session: A   **Microchip Implants for Humans—The Risks and the Rewards**
Date: Tuesday, 8 June 2010
Time: 09:00 – 10:30
Chair(s):   *Keith Miller*
Venue: 67.107

<div style="border:1px solid black; display:inline-block;">

Plenary/Theme Lectures 2

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Time   09:00 – 09:45
Venue   67.107
                  **Human Enhancement: Could you Become Infected with a Computer   pg. Info-36
                  Virus?**
                  Mark Gasson, University of Reading, UK

<div style="border:1px solid black; display:inline-block;">

Invited Talk 1

</div>

Time   09:45 – 10:30
Venue   67.107
                  **Social-Technical Issues Facing the Humancentric RFID Implantee   pg. Info-38
                  Sub-culture through the Eyes of Amal Graafstra**
                  Amal Graafstra, Author, RFID Toys, USA

<div style="border:1px solid black; display:inline-block;">

10.30 – 10.50   Morning Tea @ Foyer

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Session: B1   **Biometrics and RFID Implants for Patron ID**   *(Track One)*
Date: Tuesday, 8 June 2010
Time: 10:50 – 12:30
Chair(s):   *Katherine Albrecht*
Venue: 67.107

Paper ID: P103   **Time: 10:50 – 11:30**   **Pg. 12**

ID Scanners in the Night Time Economy

Darren Palmer, Ian Warren and Peter Miller

Technical Program

Paper ID: P053   **Time: 11:30 – 12:00**   **Pg. 12**

The Diffusion of RFID Implants for Access Control and ePayments: A Case Study on Baja Beach Club in Barcelona

Katina Michael and M.G. Michael

Paper ID: P126   **Time: 12:00 – 12:30**   **Pg. 13**

A Citizen's Concerns about Human Microchip Implants—"Lack of Information"

Geoff Robertson

Session: B2   **Digital Identity**   *(Track Two)*
Date: Tuesday, 8 June 2010
Time: 10:50 – 12:30
Chair(s):   *Eloy Portillo*
Venue: 67.104

Paper ID: P072   **Time: 10:50 – 11:30**   **Pg. 14**

Online Identity As a Semiotic Phenomenon

Lucy Resnyansky

Paper ID: P100   **Time: 11:30 – 12:00**   **Pg. 14**

Profile-based Digital Identity Management—a Better Way to Combat Fraud

Y. Yang, E. Lewis and J. Newmarch

Paper ID: P093   **Time: 12:00 – 12:30**   **Pg. 15**

Digital Identity Applied to Telematic Voting Involving European Citizens. Social and Legal Implications

Emilia Pérez Belleboni, Sergio Sánchez García, Justo Carracedo Gallardo and Ana Gómez Oliva

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Session: B3   **Enterprise Software Accountability**   *(Track Three)*
Date: Tuesday, 8 June 2010
Time: 10:50 – 12:30
Chair(s):   *Peter Goldschmidt*
Venue: 40.131

Paper ID: P037   **Time: 10:50 – 11:30**   **Pg. 15**

Removing the Barriers to Enterprise 2.0

Mohd Heikal bin Husin and Paula M.C. Swatman

Paper ID: P099   **Time: 11:30 – 12:00**   **Pg. 15**

Software and the Social Production of Disorder

Jonathan Marshall and Didar Zowghi

Technical Program

Paper ID: P068   **Time: 12:00 – 12:30**   **Pg. 16**

Practitioner Accountability and Decision-making Technology

David Wallace

12.30 – 01.25	Boxed Lunch

Session: C   **Cyborgs**
Date: Tuesday, 8 June 2010
Time: 01:25 - 02:10
Chair(s):   *Shiro Uesugi*
Venue: 67.107

Plenary/Theme Lectures 3

Time   01:25 – 02:10
Venue   67.107
                 The Challenge of Cyborg Rights   **pg. Info-37**
                 *Dr. Roger Clarke, Xamax Consultancy, Visiting Professor, School of Computer
                 Science, ANU*

Session: D1   **Workplace and Citizen Surveillance**   *(Track One)*
Date: Tuesday, 8 June 2010
Time: 02:10 – 03:10
Chair(s):   *John Weckert*
Venue: 67.107

Paper ID: P095   **Time: 02:10 – 02:40**   **Pg. 16**

Workplace Consequences of Electronic Exhibitionism and Voyeurism

William A. Herbert

Paper ID: P096   **Time: 02:40 – 03:10**   **Pg. 17**

GPS Navigation... But What is it Doing To Us?

Jeff Robbins

Session: D2   **E-learning with Social Media**   *(Track Two)*
Date: Tuesday, 8 June 2010
Time: 02:10 – 03:10
Chair(s):   *Sophie Nicol*
Venue: 67.104

Paper ID: P076   **Time: 02:10 – 02:40**   **Pg. 17**

**'I Like, Stalk them on Facebook': Teachers' 'Privacy' and the Risks of Social
Networking Sites**

Melissa De Zwart, Michael Henderson, Michael Phillips and David Lindsay

Technical Program

Paper ID: P014   **Time: 02:40 – 03:10**   Pg. 18

Is Facebook Really "Open" to All?

Maria Claudia Buzzi, Marina Buzzi, Barbara Leporini and Fahim Akhter

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Session: D3   **Advocacy: Technology and Risk**   *(Track Three)*
Date: Tuesday, 8 June 2010
Time: 02:10 – 03:10
Chair(s):   *M. G. Michael*
Venue: 40.131

Paper ID: P074   **Time: 02:10 – 02:40**   Pg. 18

Microchip-Induced Tumors in Laboratory Rodents and Dogs: A Review of the Literature 1990–2006

Katherine Albrecht

VIDEO   Time: 02.40 – 03.10

We the People will not be Chipped

Greg Nikolettos

Paper ID: P112   **Time: 03:10 pm**   Pg 18

Demystifying the Number of the Beast in the Book of Revelation: Examples of Ancient Cryptology and the Interpretation of the "666" Conundrum

M. G. Michael

| **03.10 – 03.30** | Afternoon Tea @ Foyer |

Session: E1   **LBS Tracking and Monitoring**   *(Track One)*
Date: Tuesday, 8 June 2010
Time: 03:30 – 05:00
Chair(s):   *Roger Clarke*
Venue: 67.107

Paper ID: P011   **Time: 03:30 – 04:00**   Pg. 19

System and Methodology for Using Mobile Phones in Live Remote Monitoring of Physical Activities (via Skype)

Hamed Ketabdar and Matti Lyra

Paper ID: P041   **Time: 04:00 – 04:30**   Pg. 19

Location-based Services: An Examination of User Attitudes and Socio-Ethical Scenarios

Roba Abbas

Technical Program

Paper ID: P094   **Time: 04:30 – 05:00**   **Pg. 20**

Using Mobile Phones in a Real-time Biosurveillance Program: Lessons from the frontlines in Sri Lanka and India

Gordon A. Gow, Nuwan Waidyanatha and Vincy Pushpa Mary

Session: E2   **Socially Beneficial Technology**   **(Track Two)**
Date: Tuesday, 8 June 2010
Time: 03:30 – 05:00
Chair(s):   *Janet Rochester*
Venue: 67.104

Paper ID: P025   **Time: 03:30 – 04:00**   **Pg. 20**

Green IT Awareness and Practices: Results from a Field Study on Mobile Phone Related E-Waste in Bangladesh

Noushin Laila Ansari, Mahfuz Ashraf, Bushra Tahseen Malik and Helena Grunfeld

Paper ID: P009   **Time: 04:00 – 04:30**   **Pg. 21**

One Hundred Reasons Socially Beneficial Technology Might Not Work

Greg Adamson

Paper ID: P105   **Time: 04:30 – 05:00**   **Pg. 21**

Identity, Contestability and Ethics of Unified Virtualisation of Society (via Skype)

Marcus Wigan

07:00 pm	Conference Dinner

Dinner Speaker

Time   07:30 – 07:50
Venue   Citybeach Function Centre
Chair(s):   **Peter Hyland**   pg. Info-42
                  Q & A for Kevin Warwick on Cyborg 1.0, Cyborg 2.0 via Teleconference
                  Professor Kevin Warwick, University of Reading, UK

*** DAY 2 END ****

Wednesday, 9 June 2010

09.00 onwards   **Registration**; **Venue**: McKinnon Building, Bld 67, Level 1, Foyer

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Session: A   **Social Implications of Technology**
Date: Wednesday, 9 June 2010
Time: 09:20 – 10:40
Chair(s):   *Lucy Resnyansky*
Venue: 67.107

	Invited Talk 2

Time   9:20 – 10:00
Venue   67.107
                In Defense of Privacy: The Concept and the Regime   **pg. Info-40**
                Colin Bennett, University of Victoria, Australia

	Invited Talk 3

Time   10:00 – 10:40
Venue   67.107
                Of Weighty Reasons and Indiscriminate Blankets: The Retention of DNA **pg. Info-41**
                for Forensic Purposes
                Carole McCartney, University of Leeds/Bond University, UK

10.40 – 11.00	Morning Tea @ Foyer

Session: B1   **Emergency Management and Social Media**   **(Track One)**
Date: Wednesday, 9 June 2010
Time: 11:00 – 12:30
Chair(s):   *Alexander Hayes*
Venue: 67.107

Paper ID: P121   **Time: 11:00 – 11:30**   **Pg. 22**

Rankings of Importance of Location-Based Services Utilisation for Emergency Management

Anas Aloudat and Yehia Alzoubi

Technical Program

Paper ID: P048   **Time: 11:30 – 12:00**   **Pg. 22**

Protecting the Protectors: Legal Liabilities from the Use of Web 2.0 for Australian Disaster Response

Rouhshi Low, Mark Burdon, Sharon Christensen, William Duncan, Paul Barnes and Ernest Foo

Paper ID: P023   **Time: 12:00 – 12:30**   **Pg. 23**

Bonding Over Bushfires: Social Networks in Action

Mark Freeman and Alison Freeman

Session: B2   **Smart Phones and a Critique of Privacy**   *(Track Two)*
Date: Wednesday, 9 June 2010
Time: 11:00 – 12:30
Chair(s):   *William Herbert*
Venue: 67.104

Paper ID: P089   **Time: 11:00 – 11:30**   **Pg. 23**

A Critique of Privacy

Michael Arnold and Greg Adamson

Paper ID: P013   **Time: 11:30 – 12:00**   **Pg. 24**

Alleviating the "Dark Side" of Smart Phone Use (via Skype)

Gayle Porter

Paper ID: P016   **Time: 12:00 – 12:30**   **Pg. 24**

Digital Natives and Mobile Phones: A Survey of Practices and Attitudes about Privacy and Security

Stan Kurkovsky and Ewa Syta

Session: B3   **Wireless Communications and Location**   *(Track Three)*
Date: Wednesday, 9 June 2010
Time: 11:00 – 12:30
Chair(s):   *Jennifer Heath*
Venue: 40.131

Paper ID: P090   **Time: 11:00 – 11:30**   **Pg. 25**

Learning on Location: An Adaptive Mobile Learning Content Framework

Ahmed Al-Hmouz and Alison Freeman

Paper ID: P085   **Time: 11:30 – 12:00**   **Pg. 25**

Wireless Commons against the Digital Divide

Miquel Oliver, Johan Zuidweg and Michail Batikas

Technical Program

Paper ID: P130   **Time: 12:00 – 12:30**   **Pg. 26**

The ESCAPEE Model for Community ICT Projects

Peter Hyland, Holly Tootell and Mark Freeman

| **12.30 – 01.30** | Boxed Lunch |

Session: C   **Location Based Services for Travel and Tourism**   *(Special Track 1)*
Date: Wednesday, 9 June 2010
Time: 01:30 – 03:20
Chair(s):   *Jeff Robbins*
Venue: 67.107

Paper ID: P128   **Time: 01:30 – 02:00**   **Pg. 26**

GPS e-observation — The Next Market Research Revolution?

Sara Dolnicar and Jason Buchanan

Paper ID: P127   **Time: 02:00 – 02:30**   **Pg. 27**

iTravel: Influence of iPhone Use on the Sensory and Social Structure of Tourist Experiences

Ulrike Gretzel

Paper ID: P131   **Time: 02:30 – 03:00**   **Pg. 28**

Geosocial Networking: A Case Study on Gypsii

Haralambos Arvanitakis

Paper ID: P133   **Time: 00:00 – 03:20**   **Pg. 28**

Location Based Social Networking for Smart Travelers: A Case Study on the Dopplr Service

Belinda Vicoroski

Session: C   **Internet Filtering and Regulation**   *(Special Track 2)*
Date: Wednesday, 9 June 2010
Time: 01:30 – 03:20
Chair(s):   *Lyria Bennett Moses*
Venue: 67.104

Paper ID: P083   **Time: 01:30 – 02:00**   **Pg. 29**

Australia's Proposed Internet Filtering System and its Implications for Animation, Comics and Gaming (ACG) and Slash Fan Communities

Mark McLelland

Technical Program

Paper ID: P032   **Time: 02:00 – 02:30**   **Pg. 29**

EPIC FAIL: Games Classification and Implications for Internet Censorship in Australia

Christopher Moore

Paper ID: P033   **Time: 02:30 – 03:00**   **Pg. 29**

'Extreme' Music and Graphic Representation Online

Andrew Whelan

Paper ID: P034   **Time: 03:00 – 03:20**   **Pg. 30**

Mistaken Identity: Computer Game Regulation in Australia

Jason Wilson

03.20 – 03.30	Afternoon Tea @ Foyer

Session: D1   **Technology Over Time**   *(Track One)*
Date: Wednesday, 9 June 2010
Time: 03:30 – 04:30
Chair(s):   *Holly Tootell*
Venue: 67.107

Paper ID: P082   **Time: 03:30 – 04:00**   **Pg. 30**

Time, Technology, and the Rhythms of Daily Life

Hilary Davis, Michael Arnold, Martin R. Gibbs and Bjorn Nansen

Paper ID: P058   **Time: 04:00 – 04:30**   **Pg. 31**

The Role of Technological Acceleration in the Crisis of Modernity: A View by Paul Virilio

Eloy Portillo and Pedro Costa

Session: D2   **Governement Intiatives Towards Digital Identity**   *(Track Two)*
Date: Wednesday, 9 June 2010
Time: 03:30 – 04:30
Chair(s):   *Mark Freeman*
Venue: 67.104

Paper ID: P092   **Time: 03:30 – 04:00**   **Pg. 31**

Social and Legal Implications of Digital Identity in a Multi-national Environment

Sergio Sánchez, Emilia Pérez, Ana Gómez and Justo Carracedo

Technical Program

Paper ID: P125   **Time: 04:00 – 04:30**   **Pg. 32**

Measuring Information Systems Success: A Case Study in a Health Care Setting

Ping Yu

Session: D3   **DNA and Technological Developments**   *(Unable to Present)*
Date: Wednesday, 9 June 2010
Time: 03:30 – 04:30
Chair(s):   *Carole McCartney*
Venue: 67.104

Paper ID: P114   **Time: 03:00 – 04:00**   **Pg. 32**

The Legal, Social and Ethical Controversy of the Collection and Storage of Fingerprint Profiling and DNA Sampling in Forensic Science

Katina Michael

Paper ID: P065   **Time: 04:00 – 04:30**   **Pg. 33**

Technology and Overcoming the Vulnerabilities of Human Life: Orpheus as a Metaphor for Man Confronted with the Impact of Technology

Hendrik Opdebeeck

04:30 – 04:40	Close by Janet Rochester

05:00 – 07:00	SSIT BOG Meeting

03:00 – 07:30	Nanobionics Workshop @ Innovation Campus

*** DAY 3 END ****

Date: 10th June 2010	Pg. 36
Venue: Innovation Campus, ITAMS Building, 233.115	
The Social Implications of National Security Workshop	

Abstracts

Monday, 7 June 2010

Session: B1	**Regulating Emerging Technologies**	*(Track One)*
Date:	Monday, 7 June 2010	
Time:	11:35 – 12:35	
Chair(s):	Greg Adamson	
Venue:	67.107	

Paper ID: [P081]   **Time: 11:35 – 12:05**

Regulating Beyond Nanotechnology Do Nano-Specific Problems Require Nano-Specific Solutions?

Lyria Bennett Moses

University of New South Wales, Australia. E-mail: lyria@unsw.edu.au

As has been the case with many new technologies, the introduction of nanotechnology creates the potential for positive as well as negative implications for health, the environment and society. The possibility of new technological capabilities also reveals gaps and uncertainties in existing regulatory structures. But while problems arising with new technologies tend to be described in technological terms (for example, we might speak of nano-hazards and nano-divides), responding exclusively in technological terms may not be helpful in the longer term. Solutions to technological elements of a broader problem are distorting and laws drafted in technological terms tend to become obsolete as the technology concerned continues to evolve. This paper considers means by which technologies such as nanotechnology can be subjected to appropriate regulation in a way that remains effective in the face of ongoing technological developments.

Paper ID: [P040]   **Time: 12:05 – 12:35**

An Approach to Studying Location-based Services Regulation in Australia

Roba Abbas

School of Information Systems and Technology, University of Wollongong Australia, Australia. E-mail: ra75@uow.edu.au

Location-based Services (LBS) afford a means of positioning, tracing and tracking individuals and objects, for purposes such as emergency management, employee monitoring, and consumer convenience. This paper reviews the present LBS setting and expected developments in this space, with a particular focus on the implications for Australian research and regulatory efforts. The origins of LBS in the mobile-commerce field are explored, incorporating an appraisal of the underlying positioning technology, the stakeholders in the LBS value chain, and the regulatory environment in which these services are employed. There is an evident disparity between the implementation of LBS technologies and the introduction of suitable regulatory provisions, substantiated through limited consideration of the social and ethical implications and the practical safeguards required to govern LBS usage. This paper provides an approach for studying LBS regulation in general, and highlights the need for an interdisciplinary and comprehensive approach to fulfil the established gap in LBS literature and research. It also alludes to the importance of such an approach in the Australian context, and identifies research progress to date.

Abstracts

Monday, 7 June 2010

Session: B2	**Data Security**	**(Track Two)**
Date:	Monday, 7 June 2010	
Time:	11:35 – 12:35	
Chair(s):	Michael Arnold	
Venue:	67.104	

Paper ID: [P001]   **Time: 11:35 – 12:05**

Emerging Consumers View of Secondary Uses of Medical Data

Jennifer Heath

University of Wollongong, Australia. E-mail: jheath@uow.edu.au

Results of a pilot public opinion survey regarding privacy and secondary uses of medical data are presented. Data was gathered using a self administered household survey. The setting for the survey was regional New South Wales and Darwin, Australia. 482 surveys were distributed in randomly chosen residential blocks. The main outcome measures included respondent views regarding concern for personal privacy and support for secondary uses of medical data for utilitarian purposes. 165 surveys were returned giving a 34.2% response rate. Aspects of the Restricted Access Limited Control theory of privacy were explored via the survey. Results indicate the value of further research to give insight into operationalising RALC to support secondary uses of medical data for health research.

Paper ID: [P047]   **Time: 12:05 – 12:35**

If it's Encrypted its Secure! The Viability of US State-Based Encryption Exemptions

Mark Burdon[a], Rouhshi Low[b] and Jason Reid[c]

Queensland University of Technology, Australia.
E-mail: [a]m.burdon@qut.edu.au, [b]r.low@qut.edu.au, [c]reid@isi.qut.edu.au

US state-based data breach notification laws have unveiled serious corporate and government failures regarding the security of personal information. These laws require organisations to notify persons who may be affected by an unauthorized acquisition of their personal information. Safe harbours to notification exist if personal information is encrypted. Three types of safe harbour have been identified in the literature: exemptions, rebuttable presumptions and factors. The underlying assumption of exemptions is that encrypted personal information is secure and therefore unauthorized access does not pose a risk. However, the viability of this assumption is questionable when examined against data breaches involving encrypted information and the demanding practical requirements of effective encryption management. Recent recommendations by the Australian Law Reform Commission (ALRC) would amend the Privacy Act 1988 (Cth) to implement a data breach scheme that includes a different type of safe harbour, factor based analysis. The authors examine the potential capability of the ALRC's proposed encryption safe harbour in relation to the US experience at the state legislature level.

Abstracts

Session: D1	**RFID Acceptance and Privacy**	(*Track One*)
Date:	Monday, 7 June 2010	
Time:	02:30 – 03:30	
Chair(s):	Judith Symonds	
Venue:	67.107	

Paper ID: [P015]   **Time: 02:30 – 03:00**

Continuous RFID-enabled Authentication and its Privacy Implications

Stan Kurkovsky[a], Ewa Syta and Bernardo Casano

Central Connecticut State University, USA. E-mail: [a]kurkovskysta@ccsu.edu

Radio-frequency identification (RFID) technology has gained a broad popularity in many application areas including supply chain management, retail shopping and access control. This paper explores the use of RFID at the workplace and its implications to employee privacy. In particular, we discuss the use of RFID for continuous authentication in a corporate environment. Continuous authentication provides the benefit of constant or highly periodic verification that the same authorized user accesses the computer system. In a case study presented here, employees use a knowledge- or biometric-based authentication scheme to gain initial entry to a computer system, while RFID is used subsequently to continuously verify the presence of a valid user. This paper studies the relationship between usability of such an authentication scheme and the degree of protection it provides. We also examine the balance between the increased security brought by adopting an RFID-enabled continuous authentication system and the impact that it could have on employee privacy as a result of increased tracking of many aspects of the users' activity.

Paper ID: [P057]   **Time: 03:00 – 03:30**

The Impact of Personality on Acceptance of Privacy-sensitive Technologies: A Comparative Study of RFID and Finger Vein Authentication Systems

Shiro Uesugi[1], Hitoshi Okada[2] and Toko Sasaki[3]

[1]*Matsuyama University, Japan. E-mail: uesugi@cc.matsuyama-u.ac.jp*

[2]*National Institute of Informatics, Japan. E-mail: okada@nii.ac.jp*

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The wide and rapid diffusion of ICT has created an environment where consumers must interact with new technology with which they may not be comfortably familiar. Although they often do not fully understand the technological details of these products, consumers find that they need to use a variety of services based on newly introduced ICT, such as Radio Frequency Identification Technology(RFID), Near Field Communication (NFC), or contactless Finger Vein Authentication System (FVAS). Questions regarding whether or not consumers are comfortable with a new technology and how they react when the new technology is introduced need to be addressed, especially in the case where privacy sensitive technology is concerned.

This paper investigates the differences in two systems and the reaction to these differences by comparing the results of a questionnaire administered to two separate groups of subjects. It also presents findings from applying the Big-Five Test for Personal Traits to these same groups in an analysis that examines the correlation between Neuroticism and attitudes toward new ICT.

Abstracts

Monday, 7 June 2010

Session: D2	**ICT Collaboration**	(*Track Two*)
Date:	Monday, 7 June 2010	
Time:	02:30 – 03:30	
Chair(s):	Roba Abbas	
Venue:	67.104	

Paper ID: [P056]   **Time: 02:30 – 03:00**

The ICTs-mediated Collaboration as a System of Social Activity

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This paper aims to provide a theoretical-methodological foundation for the understanding of social implications of emerging technologies. It argues that such an understanding requires a dialogical interaction between computer science and social theory. The argument is grounded within a critical analysis of the computer science discourse on ICTs-mediated collaboration in relation to the model of collaboration as a system of social activity.

The paper outlines the model of collaboration as a system of social activity. This model represents collaboration as a co-production of knowledge in the process of a critical re-negotiation of ideas. This activity is shaped both by social contexts and the means mediating the production and exchange of knowledge. This model helps reveal the limitations of computer science paradigms currently shaping the development of technological tools which aim to support human collaboration.

The paper maintains that the network paradigm reduces the entire issue of ICTs-mediated collaboration to the development of platforms. The communication paradigm encourages to approach of collaboration as merely a connection rather than as a co-production of meaning. The production paradigm is suitable for an analysis of group interaction in a virtual environment, rather than as an understanding of a large-scale collaborative production of new scientific knowledge.

Paper ID: [P019]   **Time: 03:00 – 03:30**

Equilibrium for CMC Systems' Alteration — An Intercultural Perspective

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Technology and society inter-influence each other. Cultural diversity and intercultural variations of values exist between different countries. Most of the emerging technologies including information and communication technologies (ICTs) and systems, being developed in developed countries, are influenced by the cultural values, norms and thinking of those countries. Sociopolitical factors should be considered while introducing these technologies in the institutions of a developing country. I argue that intercultural variations of values perspective should be taken into account for successful implementation of Computer Mediated Communication Systems in the public sector institutions of developing countries during aid assisted ICT governance projects. The systems should be customized, modified, and altered according to local variations of values. However, systems should not be altered to the extent that they reinforce the troubling values and structures. Right equilibrium has to be achieved.

Abstracts

Session: D3	**3G Mobile and Social Networking**	**(Track Three)**
Date:	Monday, 7 June 2010	
Time:	02:30 – 03:30	
Chair(s):	Mark Burdon	
Venue:	40.131	

Paper ID: [P123]   **Time: 02:30 – 03:00**

3G Mobile Multimedia Services (MMS) Utilization in Indonesia: An Exploratory Research

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The number of subscribers to 3G mobile networks in Indonesia is around 8.2% of total mobile phone subscribers, which shows a very low number compared with other countries. There exists a huge potential market which is yet to be exploited. To capitalize on this market, however, it is important to know the potential use of the 3G mobile networks in Indonesia as a developing country. One of the potential uses of the 3G mobile networks is 3G mobile multimedia services. To understand the current status and potential of 3G mobile multimedia services use among Indonesians, it is important to explore the reason why some Indonesians have, and others havent yet, embraced 3G mobile multimedia services, and perceiving these services. In this article, we present key findings of our research that addresses these objectives.

Our study reveals that although many respondents aware of the 3G technology, only 47% of respondents use 3G mobile multimedia services. Even those who use 3G mobile multimedia services have perceived only a limited use of 3G mobile multimedia services. The service that they mostly use is the internet access followed by video call and mobile TV. The services such as video email, mobile video, movie preview, and video surveillance are not much used. 53% of respondents do not use 3G mobile multimedia services though some of them have 3G services support mobile phone. The main reasons they cited for non using 3G services are high cost of the services, no compatible hand devices, family and friends do not use 3G mobile multimedia services, and 3G applications and services are not easy to use.

Paper ID: [P117]   **Time: 03:00 – 03:30**

Using a Social Informatics Framework to Study the Effects of Location-Based Social Networking on Relationships between People: A Review of Literature

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This paper is predominantly a review of literature on the emerging mobile application area known as location-based social networking. The study applies the social informatics framework to the exploratory question of what effect location based social networking may have on relationships between people. The classification model used in the paper relates previous research on location based services and online social networking together. Specifically the wider study is concerned with literature which identifies the impact of technology on trust with respect to friendship. This paper attempts to draw out the motivations behind using location based social networking applications and the implications this may have on individual privacy and more broadly one's social life. It relies heavily on the domain of social informatics with a view to setting a theoretical underpinning to the shaping between context and information and communication technology design.

Session: E1	**Positioning and RFID Technology**	*(Track One)*
Date:	Monday, 7 June 2010	
Time:	03:50 – 05:20	
Chair(s):	Stan Kurkovsky	
Venue:	67.107	

Paper ID: [P044]   **Time: 03:50 – 04:20**

RFID Deployment and Use in the Dairy Value Chain: Applications, Current Issues and Future Research Directions

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RFID technology is currently considered as a key enabler of supply chain transformation. However, very little has been written about the deployment and use of RFID in the dairy industry. Drawing on an extensive literature review and a case example, this exploratory study seeks to present current applications and issues related to RFID's adoption in the dairy industry and discuss future research directions.

Paper ID: [P026]   **Time: 04:20 – 04:50**

Uniwide WiFi Based Positioning System

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Millions of people travel between countries and regions on a daily basis being exposed to unfamiliar environments. Knowing where you are and how to get to places within a restricted time can make people's lives easier. Today, WiFi access points (APs) are common everywhere, especially on university campuses, in hotels, hospitals, shopping centres, and city central business districts. This project, dubbed WiPos (WiFi-Positioning), had the objective to develop a positioning system using WiFi APs deployed across a university to locate one's position in a building under conditions where GPS could not be used. When relatively accurate user position is available, location based services (LBS) can be provided to users, including timetable of a lecture room, location of the nearest vending machine, and so on. This project involved developing a server and a client (running on the Android platform) to handle positioning and LBS transactions. Testing has shown that the university's WiFi network is sufficient to provide 'room to room' accuracy.

Abstracts

Paper ID: [P004]   **Time: 04:50 – 05:20**

The RFID Tag Pictorial Glossary Project

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This research explores and proposes designs and development of helping both amateur and professional RFID system users in determining the right tags and RFID system to use or buy. Although there have been various literatures on RFID tags classification, this research looks beyond general tags classification. The paper proposes detailed pictorial classification and tags database schema development design. We report the protocol for the RFID tag pictures to share with the educational research community our experiences.

Session: E2	**Social Media Education**	(*Track Two*)
Date:	Monday, 7 June 2010	
Time:	03:50 – 05:20	
Chair(s):	Michael Phillips	
Venue:	67.104	

Paper ID: [P055]   **Time: 03:50 – 04:20**

The Use of Wearable Point-of-View (POV) Technologies in an Educational Context

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The use of wearable point-Of-View (POV) technologies in an educational context is a fast growing area of research, with applied use evident in the vocational, private, enterprise and tertiary sectors. A range of considerations and challenges for organizations and individuals alike have emerged as this rich media technology augments learning and teaching practices. EDUPOV will bring to discussion a range of examples and inherent considerations that these educational contexts are contesting as research continues with these pervasive technologies as they meld their way with contemporary pedagogies.

Paper ID: [P002]   **Time: 04:20 – 4:50**

Emergence of Creativity in Learning via Social Technologies

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Creativity is an elusive skill desired by many. Debates on 'What is Creativity' and how it can best be nurtured and supported had resurgence in the 1950's after Guildford's address to the American Psychology Association about the positive benefits of creativity. Since then creativity has been investigated in many forms and within many disciplines. Of note is that creativity is apparent within four components: the person, the process, the product and the environment. On some level creativity is assessed within one of the four components of creativity: person, process, product or environment. In this study creativity and the environment is under investigation, with a number of factors presented that allow creativity to be supported. This paper explores the role of creativity within the education of tertiary students studying Games Design and Development (within an IT discipline) from an Australian University. Particularly this paper focuses on how social factors, such as purpose built collaborative environments and virtual communities, aid in the creative pursuits of the students.

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Paper ID: [P029]	**Time: 04:50 – 5:20**

The Role of Experts in Social Media — Are the Tertiary Educated Engaged?

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With new social media technologies arising daily, this paper reports on a pilot user survey that studies how tertiary educated users are engaging with social media. The results indicate sporadic use of social media by the tertiary educated users studied; they are generally aware of the key social media sites and facilities, but are not actively utilizing these services. The reasons for, and the implications of a lack of tertiary educated users in the egalitarian and participatory environments intrinsic to social media are discussed. Further, the paper suggests potential technological barriers that might be at the root of such a lack of engagement amongst tertiary educated users.

Session: E3	**Information Security and Surveillance**	(*Track Three*)
Date:	Monday, 7 June 2010	
Time:	03:50 – 05:20	
Chair(s):	David Wallace	
Venue:	40.131	

Paper ID: [P109]	**Time: 03:50 – 04:20**

A Potential Loss of Trust as a Result of the Conflicting Messages within Information Security Research

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One implication of emerging (and established) technologies relates to information security researchers' writing on their management and use. The implication developed here is a potential loss of trust in information security research. This implication follows from an incompatible conflict between optimism and pessimism within information security research. The tenability of the optimistic information security research identified is questioned.

Paper ID: [P091]	**Time: 04:20 – 04:50**

Surveillance Monitoring and Information Assurance Work Systems

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The performance of surveillance information systems depends on reducing the decision time for remedial action by verifying alarms and generating actionable indicators, in context. This article discusses support and assurance of surveillance monitoring, and compliance verification knowledge management of surveillance results. The aim is to support information assurance real time alarm identification and verification, assurance and management decision making by tracking the parameters monitored by the existing information assurance monitoring infrastructure and operating work systems, and using that data/knowledge to create useful and actionable information. The goal is to reduce the (information assurance remedial action) time to decision to enable accurate and rapid operational execution.

Abstracts

Paper ID: [P008]   **Time: 04:50 – 05:20**

A Careful Design for a Tool to Detect Child Pornography in P2P Networks

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This paper addresses the social problem of child pornography on peer-to-peer (P2P) networks on the Internet and presents an automated system with effective computer and telematic tools for seeking out and identifying data exchanges with pedophilic content on the Internet. The paper analyzes the social and legal context in which the system must operate and describes the processes by which the system respects the rights of the persons investigated and prevents these tools from being used to establish processes of surveillance and attacks on the privacy of Internet users.

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Tuesday, 8 June 2010

Session: B1	**Biometrics and RFID Implants for Patron ID**	(*Track One*)
Date:	Tuesday, 8 June 2010	
Time:	10:50 – 12:30	
Chair(s):	Katherine Albrecht	
Venue:	67.107	

Paper ID: [P103]   **Time: 10:50 – 11:30**

ID Scanners in the Night Time Economy

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ID scanners are quickly emerging as a new technological fix to long-standing problems of security and safety within licensed venues. Yet at this point in time detailed research of this rapidly expanding security technology is remarkably limited. To address this analytical deficit we are currently examining the uptake of ID scanners in licensed venues operating in the nighttime economy. We have found significant interest in the implementation of ID scanners in other Australian cities. However, the introduction of ID scanners in late-night licensed venues has occurred with little public awareness, no policy consideration and questionable claims concerning their effectiveness in enhancing safety and reducing crime. This article explores the factors shaping the introduction if ID scanners and the underlying beliefs concerning their utility as a crime prevention technology. The article then considers some broader implications to be explored in future analyses.

Paper ID: [P053]   **Time: 11:30 – 12:00**

The Diffusion of RFID Implants for Access Control and ePayments: A Case Study on Baja Beach Club in Barcelona

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RFID implants for humans have been used in a variety of contexts since their commercial inception in 2003. The VeriChip product which typically carries a 16 digit number was first marketed as an identification device in the ehealth space (e.g. for emergency response), then as an access control mechanism (e.g. security), and finally as an epayment solution (e.g. the purchase of drinks at clubs). This paper investigates the story behind RFID implants for club patronage access control and epayment. The study uses a two-fold qualitative approach in the collection of data for the single case study of the Baja Beach Club in Barcelona, Spain. A single semi-structured interview was conducted with the IT Manager who created the application at the club that utilised the human chipping product. The full length interview was conducted in Spanish, translated into English, and analysed using content analysis. The interview was supported by an exhaustive search online for documents that met the criteria "Baja Beach Club + implants". The documents returned by

this search included academic articles, government policy documents, publicly accessible blogs and media commentary. Search engine results online uncovered one other dominant document type- that of popular religious literature linking implantable microchips in humans to end-time prophecy in the Book of Revelation, the last book of the New Testament. The findings indicate that despite the successful application of RFID implants for club patrons, the complexity of the technology during trialability led to its stilted diffusion. The paper draws on Roger's (1995) diffusion of innovation (DOI) theory to describe the poor uptake of the technology for access control worldwide but points to the possibility that this is only a short-term trend. The paper also ponders on whether the slow rate of adoption of humancentric implantables will continue and what factors might need to be overcome before widespread diffusion can occur.

Paper ID: [P126]   **Time: 12:00 – 12:30**

A Citizen's Concerns about Human Microchip Implants — "Lack of Information"

Geoff Robertson

Associate Member, IEEE SSIT

To the average citizen going about their daily routine the explosion of technological advancements take place whether they are aware of them or not. Keeping in the information "loop" is like fighting a losing battle. This presentation highlights that citizens are largely in the "dark" concerning the development and commercialisation of human microchip implants. Meanwhile, implants for biomedical, identification, financial transactions, security, tracking and monitoring applications are being thought out in research and development laboratories. In short, the citizenry lack information. Information on implants seems to be submerged like an iceberg below the water line. Some recent "under water discoveries" by the presenter have inspired participation in the 2010 IEEE ISTAS Conference. Excited about this discovery the presenter has recently become an Associate Member of the IEEE SSIT.

An Australian Parliamentary Senate Review (2005), of the Australian Privacy Act, noted that Privacy Legislation was struggling to keep pace with emerging technologies, by corporations such as VeriChip Inc, producers of human microchip implant technology. The review also registered concern about the lack of government consultation and transparency relating to some privacy issues. Submissions to the Review suggested that the use of VeriChip Inc, human microchip implant technology (based on a 16 Digit Identifier), for bio health applications should be prohibited, pending further research, public consultation and the implementation of a suitable regulatory regime. It was noted by the Review that implant technology had the potential to develop multipurpose applications requiring even more rigorous scrutiny. Anticipating privacy concerns of their communities, nine states in the USA (California, Colorado, Florida, North Dakota, Ohio, Oklahoma, and Wisconsin) have recently enacted, "Anti Chipping"/Bodily Integrity Act legislation, to quell citizen concerns over the potential for enforced chipping of humans and to safeguard individuals human rights.

Citizens are increasingly concerned about commercial, national security and global agendas that infringe on individual freedoms and potentially violate personal beliefs for the so called "greater good". This presentation highlights some of the concerns of human microchipping discovered by a citizen on a quest for more information. Concerns include issues relating to physical and mental health, personal and religious beliefs, violation of bodily integrity, insecurity of personal data, privacy, legal and government protection. The presentation raises some intriguing questions that go to the heart of citizen wellbeing. This presentation concludes that citizens across jurisdictions need more information, guidance, assistance from civil libertarians, human rights and privacy advocates, from their State and Federal Governments to understand the risks and implications of human microchipping to protect their families and communities.

Tuesday, 8 June 2010

Abstracts

Session: B2	**Digital Identity**	(*Track two*)
Date:	Tuesday, 8 June 2010	
Time:	10:50 – 12:30	
Chair(s):	Ivan Pau De La Cruz	
Venue:	67.104	

Paper ID: [P072]   **Time: 10:50 – 11:30**

Online Identity As a Semiotic Phenomenon

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The ICTs are changing some of the most fundamental concepts, including those of identity. The technolo-gization and virtualization of social interaction has resulted in the emergence of a new type of identity — online identity. Within the ICTs area, online identity is understood as an 'electronic version of real identity, a form of social subjects' digital presence manifested by Internet addresses, data, and network connections. This paper argues that, in order to fully understand the transformative potential of ICTs, online identity should not be considered as another re-incarnation of a 'real' identity, but as a specific kind of identity with independent and ever increasing importance.

     This paper aims to show how the social semiotics perspective may help understand the phenomenon of online identity. The paper outlines the analytical apparatus for exploring online identity as manifested in semiotic activity. It suggests that the conceptualization of online identity in terms of reflexivity and agency can help reveal the qualitative change introduced by ICTs into social life.

Paper ID: [P100]   **Time: 11:30 – 12:00**

Profile-based Digital Identity Management - a Better Way to Combat Fraud

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Identity and data matching are often utilised to combat identity crime and fraud. An accurate client profile that provides a unique identity and a true description of its associated business activities has become an increasing concern for service providers. There is a need for improved profile-based identity management. This paper identifies key risks, challenges, potential improvements which service providers in both the public and private sectors may find applicable. It proposes an enterprise architectural approach to profile-based identity management.

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Paper ID: [P093]   **Time: 12:00 – 12:30**

Digital Identity Applied to Telematic Voting Involving European Citizens. Social and Legal Implications

Emilia Pérez Belleboni[a], Sergio Sánchez García[b], Justo Carracedo Gallardo[c] and Ana Gómez Oliva[d]

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This paper describes the characteristics of systems of electronic voting in which both the vote itself and the authorization to vote circulate through computer networks (telematic voting), with a focus on the problems arising from the need to ensure correct identification of citizens seeking to access the voting system in a Europewide environment. The advantages offered by such a system are discussed, as are the major social and legal implications these solutions may entail.

Session: B3	**Enterprise Software Accountability**	(*Track Three*)
Date:	Tuesday, 8 June 2010	
Time:	10:50 – 12:30	
Chair(s):	Peter Goldschmidt	
Venue:	40.131	

Paper ID: [P037]   **Time: 10:50 – 11:30**

Removing the Barriers to Enterprise 2.0

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Even before the advent of Web 2.0, enterprises were already looking at ways of creating or enhancing competitive advantage. Enterprise 2.0, however, with its Web 2.0-based technologies offers the opportunity to leverage the skills and knowledge of the entire organization. But despite the apparent attractiveness of this technology, not all employees are equally willing to adopt and use Enterprise 2.0. In this paper we discuss the phenomenon known as the Empty Quarter which identifies that group of an organizations staff least likely to want to participate in this organizational virtual community, identifying possible reasons for its existence and suggesting some potential solutions. We introduce a preliminary model, the Enterprise 2.0 Uptake Model, to underpin the investigation of this fascinating issue and propose a plan of action for the gathering of appropriate data. We believe this issue is likely to become ever more central as organisations increasingly turn to enterprise content management for their everyday activities.

Paper ID: [P099]   **Time: 11:30 – 12:00**

Software and the Social Production of Disorder

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Software development is inherently an ordering process. When implemented in a workplace it orders the ways that people go about their work, the work they do, and the ways they interact and communicate

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with each other. This new mode of ordering may conflict with existing orders, existing distributions of power and knowledge, and arrangements of groups, and between groups. Ordering is almost always the subject of dispute, so software development can easily become enmeshed in the politicking between competing groups with deleterious effects. Removing all these conflicts may not be possible, as they can be an essential part of the ways relevant groups interact. Better communication, for example, may actually increase conflict, and not produce harmony. Rather than thinking of order and disorder as mutually exclusive polarities, it is more effective and realistic to think of them as constituting an 'order/disorder complex' and to expect disorder to appear alongside the ordering. This paper explores the problems of ordering and disordering through a study of changes in the Australian Customs' "Integrated Cargo System". We suggest that acceptance of some untidied mess, or openness to both dispute and unclarity, may be useful in implementing functional software.

Paper ID: [P068]	Time: 12:00 – 12:30

Practitioner Accountability and Decision-making Technology

David Wallace

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Normative expectations of accountability require that harm is acknowledged, reparation made and its causes remedied. Fundamental to this is the ability of practitioners to describe, explain and justify their decisions and actions. This ability is seriously impaired by decision-making technology, like that used in childpro-tection risk assessments. There is a moral obligation to adopt such technology but accountability becomes highly problematic given the way technology is developed, mandated, and implemented. Practitioners are required to implement the technology with limited training even though the technology undermines their judgement, compromises their way of working and often operates outside of their effective control. This loss of accountability cannot be offset by the advantages of the technology.

Session: D1	Workplace and Citizen Surveillance	(*Track One*)
Date:	Tuesday, 8 June 2010	
Time:	02:00 – 03:10	
Chair(s):	Stan Kurkovsky	
Venue:	67.107	

Paper ID: [P095]	Time: 02:10 – 02:40

Workplace Consequences of Electronic Exhibitionism and Voyeurism

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The popularity of email, blogging and social networking raises important issues for employers, employees and labor unions. This article will explore contemporary workplace issues resulting from the related social phenomena of electronic exhibitionism and voyeurism. It will begin with a discussion of the international social phenomenon of individuals electronically distributing their personal thoughts, opinions, and activities to a potential worldwide audience while at the same time retaining a subjective sense of privacy. The temptation toward such exhibitionism has been substantially enhanced by the advent of Web 2.0. The article then turns to the legal implications of electronic voyeurism including employer surveillance of employee workplace computer use and employee off-duty blogs and social networking pages. It will also examine the issues associated with employers and recruiters conducting internet searches for information about job applicants. In the conclusion, the article will discuss various means for responding to the workplace issues resulting from electronic exhibitionism and voyeurism on and off the job.

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Paper ID: [P096]	**Time: 02:40 – 03:10**

GPS Navigation... But What is it Doing To Us?

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In the classic film, Butch Cassidy and the Sundance Kid, Butch and Sundance try every devious trick they know to lose the posse chasing them. Yet they keep coming on, prompting Butch to exclaim in exasperation: "Who are those guys?" Spotting one man on the ground, looking for clues, Sundance thinks it's Lord Baltimore, a "fullblooded Indian... who could track anybody, over anything, day or night." Perhaps the fictional Lord Baltimore was portrayed a sigma or two out on the bell curve of Native American tracking ability, but survival in a pre-GPS navigational milieu demanded such skills. This paper will examine the flip side of GPS navigation, asking what the technology doing it all for us is also doing to us. The conventional wisdom insists that we have better things to do than find our own way from here to there without turn by turn directions. While it may be true that losing the ability to find one's own way, as once we were compelled, may be no great loss, as a tributary feeding into the river of what's going on across the board of human skill erosion, it's a symptom of far more serious summing going on.

Session: D2	**Elearning with Social Media**	*(Track Two)*
Date:	Tuesday, 8 June 2010	
Time:	02:10 – 03:10	
Chair(s):	Sophie Nicol	
Venue:	67.104	

Tuesday, 8 June 2010

Paper ID: [P076]	**Time: 02:10 – 02:40**

'I Like, Stalk them on Facebook': Teachers' 'Privacy' and the Risks of Social Networking Sites

Melissa De Zwart[1], Michael Henderson[2], Michael Phillips[2] and David Lindsay[3]

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Social networking sites (SNS), including MySpace and Facebook, and other media rich websites with social networking functions such as Bebo, Flickr and YouTube, offer new and varied ways to communicate for both students and teachers. This paper focuses on the complexities, particularly legal complexities, that may arise from teachers and students sharing social networks. For example, in October 2009, Queensland State School teachers were issued with a Code of Conduct prohibiting them from using SNS to contact or access students and mandating that any 'private use' of social networks by teachers must be kept 'appropriate and private'. However, this interdiction is deeply problematic, especially as SNS are designed to increase the number of users and their connections and by their very nature resist being private. Drawing upon Australian and overseas examples, this paper describes a SNS landscape in which traditional notions of privacy are much harder to maintain and can have risks, including legal risks, for teachers.

Abstracts

Paper ID: [P014]   **Time: 02:40 – 03:10**

Is Facebook Really "Open" to All?

Maria Claudia Buzzi[1,a], Marina Buzzi[1,b], Barbara Leporini[3] and Fahim Akhter[4]

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Social interaction is important for everyone, and vital for the differently-abled and elderly. Social network applications are causing us to change our ways of communicating and working. We can now make friends all over the world, share ideas and knowledge, search for others' opinions, and more. Facebook and Twitter are examples of these applications. However, these opportunities are usually meant for people who can walk, see, and talk without difficulty. In this paper we show how blind persons, using screen readers and voice synthesizers to access the Web, can interact with social network applications. Our case study focuses on Facebook, analyzing basic features, explaining electronic barriers and suggesting solutions.

Session: D3	**Advocacy: Technology and Risk**	(*Track Three*)
Date:	Tuesday, 8 June 2010	
Time:	02:10 – 03:10	
Chair(s):	M. G. Michael	
Venue:	40.131	

Paper ID: [P074]   **Time: 02:10 – 02:40**

Microchip-Induced Tumors in Laboratory Rodents and Dogs: A Review of the Literature 1990–2006

Katherine Albrecht

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This paper reviews literature published in oncology and toxicology journals between 1990 and 2006 addressing the effects of implanted radio-frequency (RFID) microchips on laboratory rodents and dogs. Eleven articles were reviewed in all, with eight investigating mice and rats, and three investigating dogs. In all but three of the articles, researchers observed that malignant sarcomas and other cancers formed around or adjacent to the implanted microchips. The tumors developed in both experimental and control animals, and in two household pets. In nearly all cases, researchers concluded that the microchips had induced the cancers. Possible explanations for the tumors are explored, and a set of recommendations for policy makers, human patients and their doctors, veterinarians, pet owners, and oncology researchers is presented in light of these findings.

Paper ID: [P112 (Unable to Present)]   **Time: 02:10 – 02:40**

Demystifying the Number of the Beast in the Book of Revelation: Examples of Ancient Cryptology and the Interpretation of the "666" Conundrum

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As the year 2000 came and went, with the suitably forecasted fuse-box of utopian and apocalyptic responses, the question of "666" (Rev 13:18) was once more brought to our attention in different ways. Biblical scholars, for instance, focused again on the interpretation of the notorious conundrum and on the Traditionsgeschichte of Antichrist. For some of those commentators it was a reply to the outpouring of sensationalist

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publications fuelled by the millennial mania. This paper aims to shed some light on the background, the sources, and the interpretation of the "number of the beast". It explores the ancient techniques for understanding the conundrum including: gematria, arithmetic, symbolic, and riddle-based solutions. Is the "number" in any way related to advanced automatic identification technologies such as microchip implants? And what of the social implications of integrating such advanced technologies to citizenry who may not wish to buy-in into such schemes (e.g. national healthcare) which are in apparent conflict with their religious beliefs?

Session: E1	**LBS Tracking and Monitoring**	(*Track One*)
Date:	Tuesday, 8 June 2010	
Time:	03:30 – 05:00	
Chair(s):	Roger Clarke	
Venue:	67.107	

Paper ID: [P011]   **Time: 03:30 – 04:00**

System and Methodology for Using Mobile Phones in Live Remote Monitoring of Physical Activities

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In this paper, we propose a system and methodology for using mobile phones for monitoring physical activities of a user, and its applications in assisting elderly or people with need for special care and monitoring. The method is based on processing acceleration data provided by accelerometers integrated in new mobile phones. As the mobile phone is carried regularly by the user, the acceleration pattern can deliver information related to pattern of physical activities the user is engaged in. This information can be sent to a monitoring server, analyzed and presented as different health related factors for assistance, monitoring and healthcare purposes.

Paper ID: [P041]   **Time: 04:00 – 04:30**

Location-based Services: An Examination of User Attitudes and Socio-Ethical Scenarios

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The Location-Based Services (LBS) industry is characterised by a multitude of vendors, all of whom assume a vital role in the provision of location solutions to their respective customer base. An attractive target audience is Gen Y consumers, recognised as being early adopters of the latest (mobile) technologies and possessing an influential role in family purchasing decisions. This paper presents and examines the outcomes of an observational study centred on the compilation of GPS data logs and accompanying diary entries for the aforementioned participant group. The emergent scenarios are reviewed, as are the attitudes of the participants. While the data logging devices were initially perceived as a novelty by participants, significant concerns emerged after further consideration and extensive utilisation of the devices. Such anxieties are specifically attributed to location and time inconsistencies, technological and device implementation issues, and general feelings of unease concerning the prospect of drawing inferences about individuals based on incomplete and inaccurate data sets. Suggested means of overcoming the ensuing issues are also considered.

Abstracts

Paper ID: [P094]   **Time: 04:30 – 05:00**

Using Mobile Phones in a Real-time Biosurveillance Program: Lessons from the frontlines in Sri Lanka and India

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The Real-Time Biosurveillance Program (RTBP) is a multi-partner research initiative to study the potential for new Information and Communication Technologies (ICTs) to improve early detection and notification of disease outbreaks in Sri Lanka and India. A key component of this project involves frontline data reporting using mobile phones to overcome problems of Internet-access in remote locations. This paper provides a brief overview of applications available for mobile phone-based data reporting, describes a formative evaluation framework used in the study, and discusses initial findings related to technology acceptance among frontline health workers operating in a developing country.

Session: E2	**Socially Beneficial Technology**	(*Track Two*)
Date:	Tuesday, 8 June 2010	
Time:	03:30 – 05:00	
Chair(s):	Janet Rochester	
Venue:	67.104	

Paper ID: [P025]   **Time: 03:30 – 04:00**

Green IT Awareness and Practices: Results from a Field Study on Mobile Phone Related E-Waste in Bangladesh

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This paper presents preliminary findings from a 'Green IT' research project, dealing with mobile phone and battery disposal and recycling by businesses and individuals in Bangladesh. Electronic waste (e-waste) is one of the fastest growing sources of waste. In addition to facing the issue of illegal exports of toxic e-waste, containing heavy metals, from the developed to the developing world, waste from current and emerging technologies used in developing countries is also growing, with the rapid increase in the use of computers, mobile phones and other devices. While many of the major electronics firms have initiated clean up practices aimed at reducing the e-waste problem, e.g. disposal and re-cycling initiatives, such schemes have in general not reached developing nations. The increasing e-waste has environmental, health, and other social implications in many developing countries, particularly with only a low level of awareness of this issue, as is the case in Bangladesh. The research presented in this paper, carried out in October-November 2009, covered awareness, current and planned practices of Green IT among 15 interviewees in Bangladesh, with special focus on mobile phones and batteries. Following an overview of Green IT in general and e-waste in particular, the paper outlines the methodology of the study, research findings and policy recommendations arising from the research results.

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Abstracts

Paper ID: [P009]   **Time: 04:00 – 04:30**

One Hundred Reasons Socially Beneficial Technology Might Not Work

Greg Adamson

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Technologies service many human needs. Socially beneficial technologies can also assist in resolving some of the world's most pressing problems: climate change; access to safe drinking water; quality housing; universal health care. Often a technology already exists, awaiting to be applied. In other cases it is within grasp given appropriate prioritisation. This paper considers approximately 100 theories of and approaches to technology innovation and adoption regarding the question, How is the failure of socially beneficial technology explained? Approaches include legal, regulatory, political, philosophical, sociological, usage, psychological, technical, economic, commercial, and marketing. This paper creates a framework of six categories in order to classify and compare the theories. It then proposed further research steps to examine the question.

Paper ID: [P105]   **Time: 04:30 – 05:00**

Identity, Contestability and Ethics of Unified Virtualisation of Society

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Virtualisation (the replacement of physical representation by bits) in society is placing great pressures on individuals and society. The progressive loss of legal multiple identities raises major ethical and practical implications, and is being accelerated by virtualisation and shifts to anticipatory 'intelligence' styles of policing and enforcement in place of reliance on common civil law. This is now shifting to the intellectual property (IP) domain as commercial interests gain state coercive powers with the convergence between trade and IP. Lack of contestability is a key theme, and the need to establish contextually separate multiple identities. NGOs need to participate in power balancing polices to address the ethical and power conflicts arising.

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Session: B1	**Emergency Management and Social Media**	(*Track One*)
Date:	Wednesday, 9 June 2010	
Time:	11:00 – 12:30	
Chair(s):	Alexander Hayes	
Venue:	67.107	

Paper ID: [P121]   **Time: 11:00 – 11:30**

Rankings of Importance of Location-Based Services Utilisation for Emergency Management

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Driven by several issues from earlier commercial public alerting projects, this paper investigates people's opinions in regard to the current and expected deployments of mobile location-based services under national emergency alerting and warning systems. In particular, the paper examines general public perspective of the importance of utilising the services in different types of emergency events, categorised as natural and human-caused. A survey was carried out to fulfil the requirements of the investigation. The findings clearly denoted significant differences between the mean ranks of all emergency types in the two categories, providing evidence that the importance of utilising LBS is perceived differently by the public for different emergency event types. It is expected that such validated criterion of investigation would help systems' designers to narrow down their selection of emergency event types to only those with extremely high significance to the public, hence avoiding the possibility of ending up with people opting out from the system as a consequence of being continuously bombarded by notifications for emergency events including minor ones.

Paper ID: [P048]   **Time: 11:30 – 12:00**

Protecting the Protectors: Legal Liabilities from the Use of Web 2.0 for Australian Disaster Response

Rouhshi Low[a], Mark Burdon[b], Sharon Christensen[c], William Duncan[d], Paul Barnes[e] and Ernest Foo[f]

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The traditional model for information dissemination in disaster response is unidirectional from official channels to the public. However recent crises in the US, such as Hurricane Katrina and the Californian Bushfires show that civilians are now turning to Web 2.0 technologies as a means of sharing disaster related information. These technologies present enormous potential benefits to disaster response authorities that cannot be overlooked. In Australia, the Victorian Bushfires Royal Commission has recently recommended that Australian disaster response authorities utilize information technologies to improve the dissemination of disaster related, bushfire information. However, whilst the use of these technologies has many positive attributes,

potential legal liabilities for disaster response authorities arise. This paper identifies some potential legal liabilities arising from the use of Web 2.0 technologies in disaster response situations thereby enhancing crisis related information sharing by highlighting legal concerns that need to be addressed.

Paper ID: [P023]   **Time: 12:00 – 12:30**

Bonding Over Bushfires: Social Networks in Action

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A world-first nation-wide community website scheme was established in Australia in 2006 to enhance existing, and build new, social networks within geographic communities. By doing so, it sought to promote geographic community engagement. Initially, this paper presents an overview of the scheme since its inception and review the current geographic community groups participating in the scheme. To date the scheme has had limited success in attracting a critical mass of communities that value the promoted benefits of social networks in this format, with only 154 community websites across Australia. While it has not achieved the expected level of uptake, the scheme has shown some potential in developing community engagement online.

One example of these websites harnessing offline experiences and using shared bonds to establish and enhance social networks occurred during the Victorian bushfires in January/February 2009. Geography-specific community websites allowed individuals to connect during this tragic event — sharing experiences and coordinating re-building efforts. Six months on from the bushfires, many of the community websites based in affected areas showed high levels, when 'owned' by the community, of activity and interaction between community members, demonstrating effective and meaningful social networks in action.

Session: B2	**Smart Phones and a Critique of Privacy**	(*Track Two*)
Date:	Wednesday, 9 June 2010	
Time:	11:00 – 12:30	
Chair(s):	William Herbert	
Venue:	67.104	

Paper ID: [P089]   **Time: 11:00 – 11:30**

A Critique of Privacy

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In this polemical paper we present a Socratian dialogue that both critiques privacy and addresses its value.

The purpose of this dialogue is to address questions that are often begged in the contemporary discourse around privacy, surveillance and technology — a discourse that assumes that privacy is a personal and social good without necessarily arguing the case.

To prosecute the debate we have Aspicio — who will argue that privacy is a condition that is not only limited as a personal and social good, but is undesirable in many important respects. Aspicio is confronted by Occulto, who will argue that privacy is a condition that can and should be obtained and defended.

In the course of the dialogue our interlocutors discuss privacy as a right; privacy and modernity; privacy, the public sphere and the private sphere; privacy and individualism; the value of surveillance; and privacy, embarrassment and shame.

Abstracts

Paper ID: [P013]   **Time: 11:30 – 12:00**

Alleviating the "Dark Side" of Smart Phone Use

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Technology offers great potential to reshape our relationship to work, but the form of that reshaping should not be allowed to happen haphazardly. As work and technology use become increasingly intertwined, a number of issues deserve re-examination. Some of these relate to work intensification and/or longer hours and possible exchange for flexibility. Recent research on use of employer-supplied smart phones offers some insight into employee perceptions of why the company supplies this technology and whether there is risk to declining the opportunity. Because dangers are more readily apparent, current limitations of technology use have been approached more often through laws related to driving than through general policies or regulation about the work itself. However, there are other concerns that may translate into employer liability beyond the possibility of car accidents. A variety of these concerns are covered in this article, along with related suggestion for actions by employers, their advisory groups, technology companies, government and employees themselves.

Paper ID: [P016]   **Time: 12:00 – 12:30**

Digital Natives and Mobile Phones: A Survey of Practices and Attitudes about Privacy and Security

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The generation of young people who do not remember life before the Internet, who grew up surrounded by computing technology and mobile phones, are often referred to as 'digital natives'. This generation has a special affinity to mobile devices — young people often carry their mobile phones with them at all times to keep a constant connection with their friends while also consuming and creating digital media. This paper presents the results of a survey of over 330 young people aged 18 to 25, which attempts to evaluate their use of mobile technology, their attitudes about security and privacy as it relates to mobile phones, as well as their perceptions of different ways how security and privacy could be improved in future mobile devices. Despite a commonly held belief that digital natives are technologically savvy, their self-assessment does not appear to support this statement. Furthermore, despite the respondents' awareness of various threats to security and privacy, very few of them actually take any concrete steps to protect their devices from unauthorized access. This paper discusses these findings and analyzes the views of young people on different authentication technologies.

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Session: B3	**Wireless Communications and Location**	(*Track Three*)
Date:	Wednesday, 9 June 2010	
Time:	11:00 – 12:30	
Chair(s):	Jennifer Heath	
Venue:	40.131	

Paper ID: [P090]   **Time: 11:00 – 11:30**

Learning on Location: An Adaptive Mobile Learning Content Framework

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Delivery options for mobile learning are increasing, however new technologies alone will not improve the experience of mobile learners. There are a number of factors that impact on a typical learning experience, and many more when that learning experience becomes 'mobile'. This paper presents a framework to describe the factors that play an important role in delivering learning content to mobile learners, and their relationship to each other. Once the necessary information is collected about a user — either automatically (e.g. location, device, previous usage) or through user input (e.g. age) — learning content can be adapted to meet the unique and personal needs of that learner within their current context. The learning content framework allows consideration of individual learning styles and scenarios, device and application capabilities, and material structure, leading to a customization of the type and delivery format of learning information in response to the user. Ultimately, the personalized response to each user (whether they are working independently or in communication with other learners) improves user engagement and the overall learning experience, as well as saving time.

Paper ID: [P085]   **Time: 11:30 – 12:00**

Wireless Commons against the Digital Divide

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Guifi is a community-based telecommunications network that originated in a rural area of the Spanish region of Catalonia. Guifi primarily uses unlicensed spectrum for its communications links, and its users create network nodes on a volunteer basis from state-ofthe-art yet inexpensive off-the-shelf WiFi equipment. Guifi's self-organizing community is governed by a Wireless Commons charter that views unlicensed spectrum as a public asset, which means that Guifi satisfies the definition of both an open Commons (an open network with free access) and a closed Commons (a self regulating community with a well defined charter).

This article identifies key factors for the exponential growth and success of the WiFi network, which has put some rural areas in Catalonia well above European average for broadband penetration. Moreover, this article identifies the threats that Guifi faces as both an open and closed Commons, and explores what Guifi does or should do to mitigate them. These threats are referred to in literature as the "Tragedy of the Commons". Finally, the article also considers possible consequences of Guifi's intentions to expand its network with fiber connections.

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Abstracts

Paper ID: [P130]   **Time: 12:00 – 12:30**

The ESCAPEE Model for Community ICT Projects

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There is ample evidence in the literature of the potential benefits of community informatics, and governments the world over have invested millions trying to secure these benefits, often with limited success. The literature suggests that some types of community ICT projects require a previous level of ICT experience for success and that there is a "natural" sequence to the types of projects that can be undertaken, particularly by regional and remote communities.

This paper presents this sequence, which we have called the ESCAPEE model, and some examples to validate the initial model. The model describes three phases of adoption and associates these with particular supporting technologies as follows:

(1) Education, Synchronous communication and Community acceptance (ESC)
(2) Access centres, Portals and Expertise (APE)
(3) E-Commerce, e-government, e-health adoption

The paper describes the research leading to the development of the model. It also describes initial studies which validate the model including: education projects in Saharakham, Thailand; the use of synchronous technologies by indigenous populations in Canada and South Australia; a community banking project in Thailand; access centre projects in NSW, Australia and Da Nang,Vietnam; a community portal project in Wollongong, Australia; and a community e-Commerce initiative in Hoi An, Vietnam.

Session: C	Location Based Services for Travel and Tourism	(*Special Track 1*)
Date:	Wednesday, 9 June 2010	
Time:	01:30 – 03:20	
Chair(s):	Jeff Robbins	
Venue:	67.107	

Paper ID: [P128]   **Time: 01:30 – 02:00**

GPS e-observation — The Next Market Research Revolution?

Sara Dolnicar[1] and Jason Buchanan[2]

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GPS Innovations

Market research stands at the very beginning of every organizational strategy, both in the commercial and the non-profit sector. Although a range of research techniques are available which provide valid and reliable data, such as experiments and observations, most market research uses the survey approach. Survey research has one major disadvantage: it does not provide information about people's behavior, although, ultimately, it is people's behavior that organizations are interested to understand. Instead, survey research collects people's statements about past behavior or statements about behavioral intentions and treats these statements about behavior as actual behavior.

It is widely acknowledged, however, that what people say they do is not always what they really do, either because they do not wish to share the true information (who would admit that they litter, that they have their air conditioner running day and night or that they use the internet for X-rated content?) or because they cannot remember given facts (who would remember the exact travel route on their last touring holiday, how often they filled up their car along the way or at what speed, on average, they were driving?). Based on studies in the area of transportation, stated behavior underreports actual behavior by as much as 60% (Stopher & Greaves 2009).

The traditional answer to this problem is observation. But large-scale observation is not feasible in market research because it is too time consuming and labor intensive to cater for organizations' needs for immediate data from a large sample at low cost. This has changed, however, with the advent of new technologies. With the availability of Global Positioning Systems (GPS) and related mobile technologies at affordable cost, a new approach to market research has become feasible: field observation using GPS technology as a measurement tool and real-time transfer of data to researchers via the wireless network (GPS e-observation). Through GPS e-observation a wide range of peoples behaviors can be observed in a non-intrusive way, similar to the traditional approach of covert observation in psychological studies. The result is real behavioral data which is not affected by behavioral modification due to the awareness of constantly being under scrutiny.

We discuss two feasibility tests for the viability of GPS e-observation: the tracking of backpacker tourists and the enrichment of GPS data with contributions backpackers make to an online community and the testing of anti-speeding advertisement effectiveness.

Paper ID: [P127]   **Time: 02:00 – 02:30**

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iTravel: Influence of iPhone Use on the Sensory and Social Structure of Tourist Experiences

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As of March 27, 2010, there were 159,611 iPhone applications available for download in the iTunes Apps Store (148Apps, 2010), while there were nearly 20,000 Android apps and close to 5,000 Blackberry apps (eMarketer, 2010). It is expected that consumers will spend a projected $6.2 billion in 2010 in mobile application stores and download more than 4.5 billion mobile applications (eMarketer, 2010). Travel-related applications currently account for 5.8% of the downloads, making it the 6th most popular applications category after books, games, entertainment, education and utilities (eMarketer, 2010). Applications included in the travel category range from generic destination guides to personalized eclectic applications.

These numbers suggest that ever more tourists have smart phones and increasingly use them during their trips. Due to the emergence of more specialized applications, this use is increasingly ubiquitous and sophisticated. Therefore, smart phones become important mediators of touristic experiences. Jansson (2006:1) stresses that "mediatization alters perceptions, of place, distance, sociality, authenticity, and other pre-understandings that frame tourism." The web-enabled mobile phone becomes the new "marker" (MacCannell, 1999), pointing out what should be considered as an attraction, powered by the applications and contents it features. At the same time, new media, especially smart phones which include tools such as navigation systems, can "eliminate some of the socio-cultural friction of touristic mobility" and affect travelers appropriation of foreign terrains (Jansson, 2007:13) in that they guide tourists to their locations and render the asking of questions regarding directions unnecessary, provide suggestions for restaurants or deliver interpretive contents in lieu of hotel concierge staff and tour guides. However, technologies also create new opportunities for social interactions. Travelers can connect with other travelers through software such as Gowalla. And travelers can also stay in touch with those at home.

This paper critically analyzes the mediation of tourist experiences through the use of smart phones like the iPhone in terms of its effects on how tourists see, communicate about and remember places, interact with other travelers and locals, and draw boundaries between work/leisure and home/away.

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Abstracts

Paper ID: [P131]	**Time: 03:00 – 03:20**

Geosocial Networking: A Case Study on Gypsii

Haralambos Arvanitakis

School of Information Systems and Technology, Faculty of Informatics, University of Wollongong, Australia.

Social networking has revolutionized how people communicate with one another in the digital age. Plat-forms like Twitter and Facebook allow anyone to communicate with friends and family, as well as business executives and employees on a global scale. With the increasing speeds that rapidly changing technol-ogy provides and costs of communicating with social networking mediums declining, the "global village" is changing how we manage our daily lives. The International Telecommunication Union's 2009 corporate annual report ranks the number of mobile phones in use at over 4.6 billion around the world- nearly 70% of the earth's population. Since 2005 there has also been growing widespread availability of 3G coverage to facilitate access to the Internet on a mobile phone. Wireless coverage is now ubiquitous in all developed countries, and with the increased adoption of embedded mobile data network access, devices such as the Netbook, the Amazon Kindle e-reader and the recently launched iPad can seamlessly access data on the go. Location contextual applications on these platforms have allowed social networking to be more personal and interactive with the use of the geographical position of the mobile device. Now, people can view their handheld device as a "personal lifestyle recorder" and share their experiences with their friends, family or colleagues while they are away from the tethered hassles of a computer. They can easily pinpoint where a friend's location is, and join them at a club. Parents can use locations of their children to keep an eye on them. Drivers can use crowd-sourcing to decide which route they should take to avoid traffic. Students can interact with other classmates and collaborate on lectures. Social networking and the technologies behind mobile devices have been combined to form an enhanced breed: geosocial networking. Gypsii, Foursquare, Google Latitude and Loopt are all apart of a growing collection of geosocial networking applications. They have their own strengths and weaknesses- accuracy, privacy, popularity and expandability- which will be discussed in the presentation.

Paper ID: [P133]	**Time: 02:30 – 03:00**

Location Based Social Networking for Smart Travelers: A Case Study on the Dopplr Service

Belinda Vicoroski

University of Wollongongs, Australia

Social networking is having a major impact on the way people communicate. Location-based social net-working (LBSN) provides additional functionality to allow friends, family, and employees, even strangers, to locate one another after opting in to an online service using a smart phone/device or a PC/Laptop. This presentation is a case study on the location based social networking (LBSN) service "Dopplr". Dopplr is con-sidered a service for smart international travellers. Members of the social network have the opportunity to share personal and business travel plans privately with their networks, and exchange tips on places to stay, eat and explore in cities around the world. Dopplr makes use of what is known as "collective intelligence". Collective intelligence with respect to travel and tourism can be defined as the travel patterns and advice of frequent travellers presented in terms of a social atlas. You can use Dopplr on a personal computer and a mobile phone. This presentation covers the major features of Dopplr, how one can use it, its potential pos-itive uses and some of its possible negative impacts. The presentation ends with an analysis of the Dopplr privacy policy.

Wednesday, 9 June 2010

Abstracts

Session: C	**Internet Filtering and Regulation**	(*Special Track 2*)
Date:	Wednesday, 9 June 2010	
Time:	01:30 – 03:20	
Chair(s):	Lyria Bennett Moses	
Venue:	67.104	

Paper ID: [P083]   **Time: 01:30 – 02:00**

Australia's Proposed Internet Filtering System and its Implications for Animation, Comics and Gaming (ACG) and Slash Fan Communities

Mark McLelland

This paper investigates the implications of the Australian Government's proposed Internet filtering system in the light of Australia's prohibition of 'virtual' child pornography (including cartoons, animation, drawings, digitally manipulated photographs, and text) for Australian fan communities of ACG and slash. ACG/slash fan groups in Australia and elsewhere routinely consume, produce and disseminate material containing 'prohibited content' (i.e. Featuring fictitious 'under-age' characters in violent and sexual scenarios). More-over, a large portion of the fans producing and trading in these images are themselves 'under age'. Focus-ing specifically upon the overwhelmingly female fandom surrounding Japanese 'Boys Love' (BL) manga, the paper argues that legislators have misrecognised the nature and scope of these online communities. It is argued that current Australian legislation not only forecloses the fantasy lives of young Australian fans but also harms these communities by rhetorically linking them with paedophile networks and threatening them with arrest, prosecution, and a lifetime on the sex offenders' list. It is also argued that the sheer scale of this kind of material, and the fact that it is legal for download and purchase in jurisdictions such as the US and Japan, make attempts to prohibit access to 'virtual' child pornography in Australia unworkable.

Paper ID: [P032]   **Time: 02:00 – 02:30**

EPIC FAIL: Games Classification and Implications for Internet Censorship in Australia

Christopher Moore

Faculty of Arts, University of Wollongong, Australia

The 'missing' restricted (R18+) classification absent from Australia's regulatory framework for digital games can be considered in terms of the gamer vernacular as FAIL. With attention to the Office of Film and Literature Classification Review Board's (OFLC) objections to the intensely violent experience of the zombie apocalypse multiplayer game Left4Dead2, this paper examines the intersection of digital games violence, censorship and the Australian Government's policy of mandatory Internet filtering in terms of the 'impact' on the communities and subcultures of online gamers. It is argued that the consequences of Internet filtering for Australian online gaming communities in combination with the lack of an appropriate classification for games designed for adults is best summarized as EPIC FAIL.

Paper ID: [P033]   **Time: 02:30 – 03:00**

'Extreme' Music and Graphic Representation Online

Andrew Whelan

Faculty of Arts, University of Wollongong, Australia. E-mail: awhelan@uow.edu.au

Previously obscure musical genres, traditionally mediated by tape trading, mail order and the like, become relatively public as they migrate into online environments. The niche is now easily available in 'pirated' format: mp3 blogs post links to material which was previously only available on limited-run cassette or vinyl.

Abstracts

Such material also circulates widely on peer-to-peer networks, and listeners can conveniently find each other and new bands through platforms such as Last.fm. One such genre is considered here: power electronics or noise'. The textual and visual material around power electronics is presented as a limit case for considering the grounds upon which censorship operates in Australia.

Power electronics has a longstanding thematic preoccupation with transgressive content, and it addresses such issues from a complex and sometimes indeterminate position, ultimately leaving judgement with the listener. However, such material appears increasingly problematic where there is no grasp of the context of use, and no grasp of the often surprisingly nuanced approach taken by the artists and fans involved. Ambivalence is characteristic of the subtle orientations evident in power electronics, and this has in the past led to interpretive problems inside and outside of the subculture. Regardless of whether an argument can be made about the aesthetic merits of this genre, its increasing online visibility is inflected in the Australian context by a legal framework likely to criminalise it 'on sight'. This is an imposition which obfuscates the meaning of the material, its social use, and most seriously, the broader societal context which gives rise to such material in the first place.

Paper ID: [P034]   Time: 03:00 – 03:20

Mistaken Identity: Computer Game Regulation in Australia

Jason Wilson

This paper will offer a history — encompassing the period from the late 1980s to the mid 1990s — where the classification regime for videogames was developed in Australia. It will consider the role of "media panic", a convergence of censorious political programmes, the acquiescence of the games industry, the lack of player representation, and importantly, the absence of media and cultural studies scholars, just as the infamous "policy moment" was unfolding. It will show how the regulatory process did not engage with cultures of use. It will consider the lessons it has for current considerations around Internet policy — the contest around emerging cultural capital and technological literacies, the desire for states to implement exemplary regulation, and the key role for media and cultural studies in intervening in the regulatory process.

Session: D1	**Technology Over Time**	(*Track one*)
Date:	Wednesday, 9 June 2010	
Time:	03:30 – 04:30	
Chair(s):	Holly Tootell	
Venue:	67.107	

Paper ID: [P082]   Time: 03:30 – 04:00

Time, Technology, and the Rhythms of Daily Life

Hilary Davis[1], Michael Arnold[2], Martin R. Gibbs[1] and Bjorn Nansen[2]

[1]*Department of Information Systems, University of Melbourne, Australia*

[2]*School of Philosophy, Anthropology and Social Inquiry, University of Melbourne, Australia*

In this paper we explore the implications of new technologies for performances in relation to work, family time, leisure and other everyday activities. Importantly, we mobilize our analysis around temporal patterns of daily life, rather than deploying cartographic metaphors and the boundaries they produce. Through fieldwork informed by five families over a period of three years, we highlight the role that technology plays in constituting the rhythms of contemporary domestic life. We identify four particular rhythms and argue that digital technology is not homogenising time in the home, nor are daily activities demarked by boundaries. Rather, technologies are implicated in reordering the rhythms of domestic life. Attention to the presence of distinct temporal patterns is crucial to understanding everyday life, and to understanding the implications of digital technologies for everyday life.

Wednesday, 9 June 2010

Paper ID: [P058]   **Time: 04:00 – 04:30**

The Role of Technological Acceleration in the Crisis of Modernity: A View by Paul Virilio

Eloy Portillo[a] and Pedro Costa[b]

EUIT Telecomunicaciones, Universidad Politécnica de Madrid. E-mail: [a]portillo@diatel.upm.es, [b]pcosta@diatel.upm.es

Technological progress is often referred as parallel with the fight against totalitarian regimes. This affirmation overlooks the problems that the modern world faces. Although developed countries have a high standard of life, underdeveloped areas of the world suffer violence, starvation and lack of social structure, condemning billions of people to poverty and no future.

If we want to review the relations between modernity, technology and totalitarian rule we should remember that for Freud, Nazism and Stalinism are not an unexpected guests of the Enlightenment, but a consequence of modernity, the moments when the essence of modernity is exposed in its purest form.

The French architect, town planner, and thinker Paul Virilio, has studied the lighting war (blitzkrieg) tactics of the 1930s, and shows how its essence has been moved to every area of modern life. Today no event is organized in the world of business, politics, art, marketing, etc. without a previous 'campaign launch' with the intention of maximizing the 'effect' of mobilization. With this in mind, this article will study how valid his thinking has been to the understanding of the all pervading presence of speed and speed technologies in modern life and their effects.

Session: D2	**Governement Intiatives Towards Digital Identity**	(*Track Two*)
Date:	Wednesday, 9 June 2010	
Time:	03:30 – 04:30	
Chair(s):	Mark Freeman	
Venue:	67.104	

Paper ID: [P092]   **Time: 03:30 – 04:00**

Social and Legal Implications of Digital Identity in a Multi-national Environment

Sergio Sánchez[a], Emilia Pérez[b], Ana Gómez[c] and Justo Carracedo[d]

DIATEL — Universidad, Politécnica de Madrid, Spain. E-mail: [a]sergio@diatel.upm.es, [b]belleboni@diatel.upm.es, [c]agomez@diatel.upm.es, [d]carracedo@diatel.upm.es

The i2010 e-Government Action Plan from the European Union forces Public Administrations (national, regional and local) of all Member States that by 2010 to meet all administrative acts of the citizens through the Internet. This implies the need for mechanisms and systems to be able to unequivocally identify people on the Internet, together with a reliable system of interoperable electronic identification management (eIDM), in such a way that citizens, businesses and government departments (even in different Member States) can identify themselves and certify their transactions accurately, quickly and simply.

However, despite the clear advantages that this entails for EU citizens, namely the fact that they possess a digital identity which allows them secure and identified access to the services offered by the various public administrations in Member States, the implementation of a solution of this kind involves a series of risks which, if they are not duly dealt with, may engender a reduction in the effectiveness of public institutions and citizens' trust in them. This article will analyse the problems associated with digital identity in the EU framework and the extent to which the solutions adopted to date meet the constitutional requirements, or fail to, highlighting aspects which may entail a risk or detriment to the freedoms of citizens and those relating to the handling of digital identity which have not yet been tackled but which, given their particular relevance, necessitate an immediate solution.

Abstracts

Paper ID: [P125]   **Time: 04:00 – 04:30**

Measuring Information Systems Success: A Case Study in a Health Care Setting
Ping Yu

Systematic evaluation of the social implications of information systems (IS) is a challenging task. As human computer interaction is a dynamic process that is influenced by the social, technical and culture factors surrounding the introduction and use of the system. It is challenge to weigh the relevant level of contribution of various factors and differentiate the critical ones. A conceptual framework will be useful in guiding the evaluation effort, otherwise data collection may not be relevant, accurate and adequate, which may lead to in-adequate interpretation of the potential implications of the information system. Based on comprehensive literature research and own IS evaluation practice, the author proposes a multi-method approach that incorporates both quantitative and qualitative measurement and based on DeLone and McLean Information System Success Model. The aim is to quantify the relevant performance of IS and its impact, and provide comprehensive and accurate explanations about the casual relationships of the different factors and their impact on the final performance of the system. A case study of the application of the research framework in evaluating the success of electronic nursing documentation in residential aged care in Australia is given to show the application of the research framework for measuring information system success.

Session: D3	DNA and Technological Developments	(*Track Three*)
Date:	Wednesday, 9 June 2010	
Time:	03:30 – 04:30	
Chair(s):	Carole McCartney	
Venue:	67.104	

Paper ID: [P114 (Unable to Present)]   **Time: 03:00 – 04:00**

The Legal, Social and Ethical Controversy of the Collection and Storage of Fingerprint Profiling and DNA Sampling in Forensic Science
Katina Michael

School of Information Systems and Technology, University of Wollongong (Unable to Present)

The collection and storage of fingerprint profiles and DNA samples in the field of forensic science for non-violent crimes is highly controversial. While biometric techniques such as fingerprinting have been used in law enforcement since the early 1900s, DNA presents a more invasive and contentious technique as most sampling is of an intimate nature (e.g. buccal swab). A fingerprint is a pattern residing on the surface of the skin while a DNA sample needs to be extracted in the vast majority of cases (e.g. at times extraction even implying the breaking of the skin). This paper aims to balance the need to collect DNA samples where direct evidence is lacking in violent crimes, versus the systematic collection of DNA from citizens who have committed acts such as petty crimes. The legal, ethical and social issues surrounding the proliferation of DNA collection and storage are explored, with a view to outlining the threats that such a regime may pose to citizens in the not-to-distant future, especially persons belonging to ethnic minority groups.

Wednesday, 9 June 2010

Abstracts

Paper ID: [P065 (Unable to Present)]   **Time: 04:00 – 04:30**

Technology and Overcoming the Vulnerabilities of Human Life: Orpheus as a Metaphor for Man Confronted with the Impact of Technology

Hendrik Opdebeeck

University of Antwerp, Belgium (Unable to Present). E-mail: hendrik.opdebeeck@ua.ac.be

Crucial ethical questions have been raised about the impact of technology on individual and organizational levels in society. In spite of the many advantages of technology, in an era of networking and globalisation, in this paper, we intend to explore how one can prevent the flaws of dark sides of technology from leading to ever-greater ethical decay. By ethical decay, we mean specifically the threat technology poses to what is referred to as the longing for being and solidarity with the other(s). The current globalisation of society goes hand in hand with an ongoing revolutionary impact of technology on many and especially on leadership. We need to extrapolate to what these technological developments will lead if they are allowed to pursue an autonomous course.

Wednesday, 9 June 2010

Workshop

The Fifth Workshop on the
Social Implications of National Security

Theme: The Social Implications of Location-Based Services and Other Emerging Technologies
Workshop Organizers: Katina Michael and M.G. Michael

Hosted by The Centre for Transnational Crime Prevention, Faculty of Law at UOW, in conjunction with the School of Information Systems and Technology, Faculty of Informatics at UOW

Date: 10th June 2010, iC

Workshop Overview

09.30 – 10.00 hrs	**Registration** ITAMS Building, 233.115
10.00 – 10.15 hrs	Welcome by Director of CTCP, *Professor Andrew Goldsmith*
10.15 – 11.15 hrs	**Keynote**: The Quest for RoboEthics: A Survey by *Professor Rafael Capurro*
11.15 – 12.15 hrs	**Open Forum Q&A**: Location-Based Services and RFID Implants: What's All the Fuss About by *Mr Amal Graafstra*
12.15 – 12.30 hrs	Speed Networking Session
12.30 – 01.30 hrs	Lunch
01.30 – 02.00 hrs	Reflecting on Novel Methodologies Used to Collect Data from the Field: A Look Back at Five Years of Research on Location Based Services in the Faculty of Informatics by *Associate Professor Katina Michael and Dr M.G. Michael*
02.00 – 02.30 hrs	The Social Implications of the National Location-Based Emergency Services in Australia by *Mr. Anas Aloudat*
02.30 – 03.00 hrs	Location-based Services (LBS) Regulation in Australia: Preliminary Findings from Stakeholder Consultation by *Ms Roba Abbas*
03.00 – 03.30 hrs	Coffee and Tea Break
03.30 – 04.30 hrs	Policings New Visibility by *Professor Andrew Goldsmith*
04.30	Close

ABSTRACTS

The Quest for Roboethics: A Survey

Rafael Capurro

Ethics and robotics are two academic disciplines, one dealing with the moral norms and values underlying implicitly or explicitly human behavior and the other aiming at the production of artificial agents, mostly as physical devices, with some degree of autonomy based on rules and programmes set up by their creators (Capurro and Nagenborg 2009). Since the first robots arrived on the stage in the play by Karel Capek (1921) visions of a world inhabited by humans and robots gave rise to countless utopian and dystopian stories, songs, movies, and video games. Human-robot interaction raises serious ethical questions right now that are theoretically less ambitious but practically more important than the possibility of the creation of moral machines that would be more than machines with an ethical code. The term 'roboethics' was coined by the engineer Gianmarco Veruggio (Veruggio 2006). The aim of this paper is give a brief account of subjects, projects, groups and authors dealing with ethical aspects of robots. I first start with recent research on roboethics in two EU projects namely ETHICBOTS (2005–2008) and ETICA (2009–2011). I report on the activities of Roboethics.org and particularly of the Technical Committee (TC) on Roboethics of the IEEE and list some ethical issues and principles currently discussed. I also report briefly on the Machine Ethics Consortium. In the second part I present some views on robotics and robots as discussed particularly in Japan leading to what I call intercultural roboethics, i.e., to an in-deep analysis of the way(s) in which robots are perceived in different cultures with different social and moral backgrounds, values and principles. An intercultural ethical analysis should make possible to be aware of these differences as a basis for a comparative normative ethics of robots (genitivus obiectivus) that is still in its infancy (Capurro and Nagenborg 2009). In the third part I briefly discuss the relationship between roboethics and digital ontology. In the conclusion I point to some topics and questions for a future agenda of intercultural roboethics.

Location-Based Services and RFID Implants: What's All the Fuss About?

Amal Graafstra

Amal.net, Author of RFID Toys

Reflecting on Novel Methodologies Used to Collect Data from the Field: A Look Back at Five Years of Research on Location Based Services in the Faculty of Informatics (2005–2010)

Katina Michael[1] and M.G. Michael[2]

[1]*Associate Professor;* [2]*Honorary Senior Fellow,*
School of Information Systems and Technology, Faculty of Informatics, UOW

Location-based Services (LBS) Regulation in Australia: Preliminary Findings from Stakeholder Consultation

Roba Abbas

PhD Candidate, School of Information Systems and Technology, Faculty of Informatics, UOW

Location-based services (LBS) are presently being deployed in Australia in a range of industries and for a variety of purposes, such as emergency management, employee monitoring, through to consumer navigation and social functions. However, literature and research reveal that the associated regulatory environment has not been adequately studied. This is partly due to the complexities involved in the provision of LBS to the

end user, through the LBS value chain of operational and non- operational entities. Essentially, a complex value chain exists due to the need for cooperation and partnership between vendors in order to successfully deliver a service. Based on the notion of collaboration, in addition to socio-technical and policy develop-ment principles, a consultation process is being conducted with the intention of encouraging stakeholders across the value chain to be involved in the design and conceptualization of ethically-sound LBS. The stake-holder consultation seeks to identify social (and other) implications associated with the deployment of LBS, while specifying possible means of addressing such implications. Preliminary findings from the consultation process indicate that a pragmatic approach is necessary, in which the benefits associated with the deploy-ment of LBS are acknowledged, while the possible concerns are categorized in terms of severity or potential impact. Based on such categorization, the documented risks can be addressed using a variety of mecha-nisms, relative to the situation and the associated level of concern. Stakeholders suggest techniques such as the development of industry codes/standards, the use of privacy impact assessments, and the integration of relevant technical safeguards into the location-based service itself. Stakeholders also recognize that existing legislation require review, to address both apparent inconsistencies and provide adequate coverage of LBS. However, any suggested mechanism, regulatory or otherwise, must accommodate a number of competing interests that were expressed thus far. Namely, the need to manage user and other stakeholder concerns, while simultaneously ensuring technological innovation in the LBS industry is not unnecessarily prohibited. Insights into the stakeholder consultation are presented, and a roadmap for future research is introduced.

The Social Implications of the National Location-Based Emergency Services in Australia

Anas Aloudat

PhD Candidate, School of Information Systems and Technology, Faculty of Informatics, UOW

The Australian Federal, States and Territories Governments announced in 2009 their future intentions to utilize location-based services under a national all-hazards emergency warning and alerting system. The location-based component should allow the system to disseminate warnings based on the physical loca-tion of the active mobile handset if the handset is in the vicinity of a defined emergency area. While the application of location-based government services is discerned as a valuable addition to the existing emer-gency management arrangements, a look is taken nonetheless into the social implications of the national introduction of these services in Australia. In particular, the issues the services wide utilization is expected to evoke, including concerns about privacy, location information control and peoples trust in these services during emergencies. To provide tangible recognition of the identified issues, results of a survey conducted to probe peoples opinions about the services are presented as well. Albeit the results markedly demonstrate peoples trust in the services and also their trust in the governments to act as proxies over their personal locational information during emergencies, concerns about privacy are still expressed as prominent issues that need further consideration in order to understand the future success of these services in Australia.

Policing's New Visibility

Andrew Goldsmith

Director, Centre for Transnational Crime Prevention, Faculty of Law, UOW

In this article, I argue, the conditions of choice open to police organizations and personnel in this regard have been eroded dramatically in recent years as a consequence of new communicative technologies and their social use. In short, the article examines the changing circumstances of *policing's in/visibility*. Pervasive new camera and video technologies and social networking practices are creating a new generation of media producers as well as consumers, contributing to a "disappearance of disappearances" (Haggerty and Ericson 2000), and thus to a "new visibility" in policing (Thompson 2005). In terms of both public perception and formal accountability, the police are losing their ability to "patrol the facts" (Ericson 1989). While many details remain unclear, it seems highly probable that that the new capacities for surveillance of policing inherent in these technologies may increase the polices accountability to the public, while decreasing their account ability (Ericson 1995). Much, if not all, of that *accountability* however is likely to take place in the court of public opinion rather than through courts of law and other institutionalized channels of public accountability.

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| Programme-At-A-Glance		
Time	**Monday, 7 June 2010**	
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Welcome CHAIR (Chair: Mark Gasson, ISTAS 2010 General Chair)		
09:50 – 10:00	Welcome Remarks by Judy Raper - *UOW PVC Research*	
10:00 – 10:05	Opening Comments by Greg Adamson - *SSIT Australia*	
10:05 – 10:10	IEEE Division VI Director by *Mark Montrose*	
10:10 – 10:15	IEEE SSIT Past President by *Janet Rochester*	
Session A: A Vision for Nanotechnology (Chair: Peter Hyland)		
10:15 – 10:45	Keynote-1: Nanotechnology: Will it revolutionise health care? by **Gordon Wallace**	
10:45 – 11:35	Keynote-2: In defence of the precautionary principle by **John Weckert**	
Time/Venue	67.107	67.104	
11:35 – 12:35	**Session B1:** Regulating Emerging Technologies	**Session B2:** Data Security	
12:35 – 01:35	Boxed Lunch @ Bld. 67, Level 1, Foyer	
Time/Venue	67.107	
Session C: ICT Implants in the European Union (Chair: Mark Gasson)		
01:35 – 02:30	Plenary/Theme Lectures 1: Ethical Aspects of ICT Implants in the Human Body (Opinion no. 20): European Group on Ethics in Science and New Technologies by **Rafael Capurro**	
Time/Venue	67.107	67.104	40.131
02:30 – 03:30	**Session D1 :** RFID Acceptance and Privacy	**Session D2:** RFID Acceptance and Privacy	**Session D3:** 3G Mobile and Social *Networking*
03:30 – 03:50	Afternoon Tea		
03:50 – 05:20	**Session E1: Positioning and RFID Technology**	**Session E2:** Social Media Education	**Session E3:** Information Security and Surveillance
05:30 – 06:30	**SSIT Australia Meeting**		
06:30 – 07:30	**UniBar**		
Time	**Tuesday, 8 June 2010**	
08:30 onwards	Registration	
Time/Venue	67.107	
Session A: Microchip Implants for Humans- the Risks and the Rewards (Chair: Keith Miller)		
09:00 – 09:45	Plenary/Theme Lectures 2: Human Enhancement: Could you become infected with a computer virus? by **Amal Graafstra**	
09:45 – 10:30	Invited Talk 1: Social-Technical Issues Facing the Humancentric RFID Implantee Sub-clulture through the Eyes of Amal Graafstra Story by Mark Gasson	
10:30 – 10:50	Morning Tea	
Time/Venue	67.107	67.104	40.131
10:50 – 12:30	**Session B1:** Biometrics and RFID Implants for Patron ID	**Session B2:** Digital Identity	**Session B3:** Enterprise Software Accountability
12:30 – 01:25	Boxed Lunch		
Time/Venue	67.107	
Session C: Cyborgs (Chair: Shiro Uesugi)		
01:25 – 02:10	Plenary/Theme Lectures 3: The Challenge of Cyborg Rights by **Rafael Capurro**	
Time/Venue	67.107	67.104	40.131
02:10 – 03:10	**Session D1:** Workplace and Citizen Surveillance	**Session D2:** E-learning with Social Media	**Session D3:** Advocacy: Technology and Risk
03:10 – 03:30	Afternoon Tea		
03:50 – 05:00	**Session E1:** LBS Tracking and Monitoring	**Session E2:** Socially Beneficial Technology	
07:00	Dinner		
07:30	Dinner Speaker: Q & A for Kevin Warwick on Cyborg 1.0, Cyborg 2.0ss by **Kevin Warwick** *(Venue : Citybeach Function Centre)*	
Time	**Wednesday, 9 June 2010**	
09:00 onwards	Registration	
Time/Venue	67.107	
Session A: Social Implications of Technology (Chair: Lucy Resnyansky)		
09:20 – 10:00	Invited Talk 2: In Defense of Privacy: The Concept and the Regime by *Colin Bennett*	
10:00 – 10:40	Invited Talk 3: Of Weighty Reasons and Indiscriminate Blankets: The Retention of DNA for Forensic Purposes by *Carole McCartney*	
10:40 – 11:00	Morning Tea	
Time/Venue	67.107	67.104	40.131
11:00 – 12:30	**Session B1:** Emergency Management and Social Media	**Session B2:** Smart Phones and acritique of Privacy	**Session B3:** Wireless Communications and Location
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01:30 – 03:20	**Session C:** Special Track 1 - Location Based Services for Travel and Tourism	**Session C:** Special Track 2 - Internet Filtering and Regulation	
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03:30 – 04:30	**Session D1:** Internet Regulation in	**Session D2:** Governement Intiatives	**Session D3:** DNA and Technological Developments
04:30 – 04:40	**CLOSE by Janet Rochester**		
05:00 – 07:00	SSIT BOG Meeting		
03:00 – 07:30	Nanobionics Workshop @ Innovative Campus		
Time	**Thursday, 10 June 2010**	
09:30 – 04:30	The 5th Workshop on the Social Implications of the National Security *(Please refer abstract booklet pg. 36 for detailed the programme)*	

CALL FOR PAPERS

2010 IEEE International Symposium on Technology and Society (ISTAS '10)

"Social Implications of Emerging Technologies"

June 7- 9, 2010
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ISTAS'10 will be held at the Novotel Northbeach near the University of Wollongong
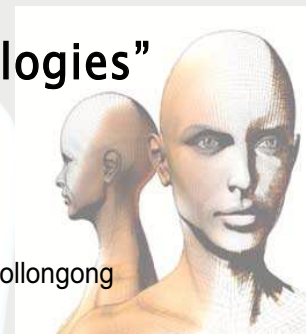
The IEEE International Symposium on Technology and Society (ISTAS) is an annual international forum sponsored by the IEEE Society on Social Implications of Technology (SSIT). ISTAS`10 in Wollongong, NSW, Australia, will bring together participants sharing research, projects, and ideas about:

Automatic Identification
- Automatic identification technologies including biometrics (DNA), RFID
- Surveillance, dataveillance, sousveillance, anti-surveillance, uberveillance
- National security, emergency response, border control, e-tollways, e-passports

Location-Based Services
- Geographic information systems, digital mapping, geotagging, street view, CCTV
- Location-based services, global positioning systems (GPS), tracking, monitoring

Social Networking
- Social networking applications, blogs, glogs, cyberstalking, collaboration
- Data collection, data merging, data matching, data mining, disclosure
- Mobile comms, wearable computing, ubiquity, context-aware applications

Nanotechnology
- Microchip implants, biomedical solutions, diagnostics, drug delivery
- Nanotechnology, bionics, transhumanism, artificial intelligence, robots, cyborgs

Privacy, Security & Human Rights
- Cyberethics, privacy, data protection, trust, control, consent, transborder flows
- Security, law enforcement, covert/overt policing, laws, regulations, public policy
- Social implications, registers, human rights, intellectual property, social equity

Additional papers on other traditional fields of interest to SSIT also are welcome.

ISTAS '10 will be a multi-disciplinary event for engineers, scientists, researchers in the social sciences, arts/law and humanities, and decision makers in the public and private sectors.

Important Dates

Abstract submission (200 words)	**October 2, 2009**
Full/Short paper submission (5000/2000 words):	**November 13, 2009**
Author notification:	**February 26, 2010**
Final camera-ready copy:	**March 26, 2010**

All submissions to Katina Michael at: katina@uow.edu.au.

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