

Study Leave Report

1st July – 31st December 2005

Dr Katina Michael, Senior Lecturer

School of Information Technology and Computer Science

5. Objective.

The primary aim of the study leave was to develop a ‘track record’ in terms of quality publications which would culminate in the submission of a national competitive grant.

The value to the applicant is in the development of a portfolio of papers that address the same underlying theme(s). As a staff member who still qualifies as an Early Career Researcher (ECR), a good track record would be invaluable to the submission of an ARC-Discovery grant.

The value to the discipline is in highlighting the increasing importance of location-based services in mobile commerce and in exploring the implications that these emerging services may have on society.

6. Program and Itinerary

Itinerary	Month	Institution/ Work-in-Progress	Reason for Visit
RNSA Computer Forensics Workshop	July	Queensland University of Technology	Workshop Delegate
IEEE Mobile Business	July	Crown Plaza, University of Technology, Sydney	Conference Presentation
Collector Workshop	July	Crown Plaza, Collector Series	My four students presenting work
IEEE eCommerce Technology	July	Technische Universitat Munchen, Germany	Training for teaching ebusiness
IEEE Mobile Commerce and Services Workshop	July	Technische Universitat Munchen, Germany	Workshop Presentation
IEEE Technology & Society Magazine	August	ID Techniques paper submission (10 pages)	High impact magazine
RFID World Exhibition	August	Darling Harbour, Convention Centre	Exhibition Attendee
Electronic Commerce Research and Applications	Sept	RFID transponder implants paper submission (20 pages)	High impact electronic commerce journal
Social Implications Workshop (RNSA)	Sept	Workshop proposal submitted to RNSA board	Workshop to be held 29 May 2006
Collector Latin America	Oct	University of Talca, Chile	Four Conference Presentations
IEEE eBusiness Engineering	Oct	Tsinghua University, Beijing, China	Conference Presentation

32 nd ARS Spatial Information Systems	Nov	University of NSW	Seminar Presentation
Urban Transit Conference	Nov	Sheraton on the Park, Melbourne	Technical Presentation
RNSA Workshop on Risk Assessment	Nov	University of NSW	Workshop Presentation
ARC-D Grant	Dec	Location-based Services	Grant Proposal
DCITA Grant	Dec	Location-based Services	Grant Proposal
FSA Agreement IACT304	Dec	University of Wollongong	Proposal completion

7. Realisation of Objectives

Papers that were either published/presented during the study leave period or have been accepted for publication are listed below:

1. Michael, K. & Michael, M.G. (n.d.). "The proliferation of identification techniques for citizens throughout the ages", *IEEE Technology & Society Magazine*, 10 pages (accepted for publication subject to revision).
2. Masters, A. & Michael, K. (n.d.). "Lend me your arms: the use and implications of humancentric RFID", *Electronic Commerce Research and Applications*, Elsevier Press, 20 pages (accepted for publication).
3. Michael, K. & Masters, A. (2005). "Realised applications of positioning technologies in defense intelligence" in H. Abbass & D. Essam (eds), *Applications of Information Systems to Homeland Security and Defense*, IDG Press, ch. 7, pp. 167-195.
4. Michael, K. & Masters, A. (2005). "The advancement of positioning technologies in defense intelligence" in H. Abbass & D. Essam (eds), *Applications of Information Systems to Homeland Security and Defense*, IDG Press, ch. 8, pp. 196-220.
5. Michael, K. (2006). "The effects of downsizing on knowledge management", *The Second International Conference on International Business and Management (13-16th February 2006)*, pp. 1-8 (in press).
6. Perusco, L. & Michael, K. (2005). "Humancentric applications of precise location-based services", *IEEE Conference on e-Business Engineering*, (18-22nd October: Beijing, China), IEEE Computer Society, Washington, pp. 409-418.
7. McCathie, L. & Michael, K. (2005). "Is it the end of barcodes in supply chain management?", *Collaborative Electronic Commerce Technology and Research LatAm (3-5th October: Talca, Chile)*, University of Talca, Chile, pp. 1-19.
8. Cooper, R. & Michael, K. (2005). "E-mail business models", *Collaborative Electronic Commerce Technology and Research LatAm (3-5th October: Talca, Chile)*, University of Talca, Chile, pp. 1-15.
9. Alves, K. & Michael, K. (2005). "The rise and fall of digital music distribution services: a Cross-Case Comparison of MP3.com, Napster and Kazaa", *Collaborative Electronic Commerce Technology and Research LatAm (3-5th October: Talca, Chile)*, University of Talca, Chile, pp. 1-22.
10. Masters, A. & Michael, K. (2005). "Humancentric applications of RFID implants: the usability contexts of control, convenience and care", *The Second IEEE International Workshop on Mobile Commerce and Services (19th July: Munich, Germany)*, IEEE Computer Society, Washington, pp. 32-41.

11. Michael, K. & McCathie, L. (2005). "The pros and cons of RFID in supply chain management", *International Conference on Mobile Business* (11-13th July: Sydney, Australia), IEEE Computer Society, Washington, pp. 623-629.
12. Michael, K. & Tootell, H. (2005). "Introducing location-based services into information technology curriculum: reflections on practice", *International Conference on Mobile Business* (11-13th July: Sydney, Australia), IEEE Computer Society, Washington, pp. 220-226.
13. Sargent, J. & Michael, K. (2005). "The need for a digital aid framework in humanitarian relief", *The 9th World Multi-Conference on Systemics, Cybernetics and Informatics*, (10-13th July: Orlando, Florida), vol 5, pp. 1-7.
14. Michael, K. & Dunn, L. (2006). "The use of information and communication technology for the preservation of aboriginal culture: the Badimaya people of Western Australia", in L. Dyson (ed), *Information Technology and Indigenous People*, IDG Press, pp. 1-5 (in press).
15. Michael, K. (2005). "The use of geospatial intelligence for national Security: determining the threats and identifying the critical infrastructure to protect", *RNSA Risk Assessment Workshop*, UNSW, Nov 28th.
16. Michael, K. (2005). "Location-based services for tracking objects and subjects", *Urban Transit Conference*, Melbourne, Hilton on the Park, Nov 15th.
17. Michael, K. (2005). "Locatum", *The 32nd Annual Research Seminars of Surveying and Spatial Intelligence*, UNSW, Nov 6th.
18. Michael, K. (2005). "Towards a hierarchical positioning system", *Collaborative Electronic Commerce Technology and Research LatAm* (3-5th October: Talca, Chile).
19. Michael, K. (2005). "The integration of positioning technologies for precise location determination", *DSL Research Day*, 24th October, University of Wollongong.

Papers that are currently under review include:

20. Michael, K., McNamee, A., Michael, M.G., Tootell, H. (2006). "The social implications of tracking and monitoring subjects and objects using GPS", *IEEE International Symposium on Technology & Society*.
21. Michael, K. (2006). "The hybridisation of automatic identification techniques in mass market applications: Towards a Model of Coexistence", *IEEE Third International Conference on Management of Innovation and Technology*.
22. Michael, K. (2006). "The notion of a tracking device in US and Australian legislation", *The Social Implications of Information Security Measures to Citizens and Business*".
23. Michael, K. (2006). "Automatic location identification- a paradigm shift", *The Social Implications of Information Security Measures to Citizens and Business*".
24. Michael, K. (2007). "Geocoding", in H.A. Karimi (ed), *Encyclopaedia of GeoInformatics*, IDG Press.
25. Michael, K. (2007). "Thematic mapping", in H.A. Karimi (ed), *Encyclopaedia of GeoInformatics*, IDG Press.
26. Michael, K. (2007). "The importance of GIS to location-based services", in H.A. Karimi (ed), *Encyclopaedia of GeoInformatics*, IDG Press.

27. Michael, K. & Tootell, H. (2007). "Does the proliferation of automatic identification devices mean better national security?", in M. Quigley (ed), *Encyclopaedia of Information Ethics and Security*, IDG Press.
28. Michael, K. & McNamee, A. (2007). "Monitoring and tracking humans using the Global Positioning System", in M. Quigley (ed), *Encyclopaedia of Information Ethics and Security*, IDG Press.
29. Michael, K. & Michael, M.G. (2007). "The quest for immortality through electrophoresis", in M. Quigley (ed), *Encyclopaedia of Information Ethics and Security*, IDG Press.
30. Michael, K., Michael, M.G., Akela, M.R. (2007). "The use and potential misuse of medical transponder implants", in M. Quigley (ed), *Encyclopaedia of Information Ethics and Security*, IDG Press.

Program Committee invitations I have received since attending conferences and submitting papers include:

31. STEP, Social Technological Economic Progress 2005 Mentor, University of Wollongong
32. International Workshop on Data Engineering in E-Commerce and Services (DEECS 2006)
33. Third IEEE International Workshop on Wireless Commerce and Services (WMCS'06)
34. Information Management and Business 2006 Doctoral Consortium
35. Asia Pacific Program Committee IFIP e-Business, e-Government, e-Learning 2006.

Workshops I have proposed to specialist panels include:

36. RNSA Social Implications of Information Security Measures on Citizens and Business

The submission of two national competitive grants to:

37. The social implications of location-based services on Australian citizens (pending 2006; DCITA Telecommunications Research Grant)
38. Homeland defense location intelligence services (HeaDLoc-IS) using hierarchical positioning technologies (pending 2006; ARC-D Grant)

Honours Bachelor supervision that was completed during my study leave:

39. Chew, T-Y. "The integration of positioning technologies for precise location identification"
40. Gauci, R. "E-business solutions: complete versus segmented"
41. Johnston, K. "RFID privacy and security: a content analysis"
42. McKeon, L. "Wi-fi drivers and inhibitors: the Australian context"
43. McNamee, A. "Ethical issues arising from the real-time tracking and monitoring of people using GPS-based location services"

44. Parker, K. "An investigation into GIS management strategies: a case study on one of Australia's largest telecommunications carriers"
45. Perusco, L. "Humancentric applications of precise location-based services"
46. Trevarthen, A. "The importance of utilizing electronic identification for total farm management: a case study of dairy farms on the south coast of NSW"

321 Annual Software Project supervision that was completed during my study leave:

47. Carnes, B., Cockroft, A., Mead, C., Yu, J. (2005). Vehicle Fleet Tracker [Computer Software] sponsored by Nortel Networks. Wollongong, Australia.
48. Jackson, A., Macci, G., Erskine, M.S., Turner, W. (2005). Mobile Conference Organiser [Computer Software]. Wollongong Australia: Red Carpet.
49. Sogono, C., Cross, R., Nurmin, E., Heng, H. (2005). Enterprise Location Assertion Database [Computer Software] sponsored by Nortel Networks. Wollongong, Australia.
50. Zeltzer, M., McSweyn, B., Ridland, M. (2005). RFID Smart Supermarket [Computer Software]. Wollongong, Australia.

Staff recruitment committees I was involved in during my study leave:

51. Lecturer Software Engineering
52. Lecturer Information Technology

Teacher Training Courses I was involved in during my study leave:

53. *Oliviers of the Lecture Theatre* training course
54. *Teaching Survey Reflections* training course
55. *Chinese Cultural Language Awareness* training course
56. Attained a *Senior First Aid* Certificate
57. Participated in the *Diversity and Inclusivity Forum* (Student Equity Project) on campus lead by Associate Professor Greg Hampton
58. Guest lecture in IACT301 Information and Communication Security Issues

Miscellaneous activities I was involved in during my study leave:

59. December graduations (Wednesday, Friday)
60. Faculty Service Agreement kick-off for IACT 304 (2006)
61. CRWP BIT Lecturers meeting
62. CRWP BIT "Let's ask industry" meeting
63. Promotion to Senior Lecturer Application

64. Seminar presentation to Café DSL 08/08/05
65. Marked three Honours theses and assessed two 321 Software Projects
66. Attended SITACS 321 Annual Software Trade Show
67. The supervision of two PhD students

Some of the academics and practitioners I had an opportunity to network with include:

- Adrian Paschke, Research Assistant, Internet-based Information Systems, Technische Universität München, Germany
- Associate Professor Andrew Dempster, School of Surveying and Spatial Information Systems, University of New South Wales
- Associate Professor Anthony Bergin, University of NSW, ADFA
- Associate Professor Colin Duffield, Department of Civil and Environmental Engineering, University of Melbourne
- Associate Professor Elaine Lawrence, University of Technology, Sydney
- Associate Professor Jim Underwood, University of Technology, Sydney
- Associate Professor Priyan Mendis, Department of Civil and Environmental Engineering, University of Melbourne
- Associate Professor Rodger Clarke, Australian National University
- Associate Professor Rodger Jamieson, University of NSW
- Associate Professor Supriya Singh, RMIT
- Athol Yates, RNSA Outreach Manager
- Christoph Goth, Information Management, University of Zurich
- Colonel Andrew Smith, Centre for Defence and Strategic Studies, Australian Defence College
- Dr Adrian McCullagh, Information Security Institute, QUT
- Dr Alexander Felfernig, University Assistant, Universität Lagenfurt, Austria
- Dr Axel Kupper, Mobile and Distributed Systems Group, Ludwig Maximilians Universität München, Germany
- Dr Chris Flaherty, Department of Civil and Environmental Engineering, University of Melbourne
- Dr Collette Burke, University of Melbourne
- Dr Emilia Belleboni, Polytechnic University of Madrid, Spain
- Dr H.W. Peter Beadle, Critical Infrastructure Protection
- Dr Hussein Tahiri, Research Analyst, Victoria Police, Victoria
- Dr Ian W. Douglas, Assistant Program Director, Florida State University, Tallahassee, Florida, USA
- Dr Iris Junglas, Management Information Systems, C.T. Brauer College of Business, University of Houston, USA
- Dr James Stellos, Australian National University
- Dr Katrin Gabner, Institut Software-und Systemtechnik, Germany
- Dr Lauren May, Information Security Research Centre, Queensland University of Technology, QLD
- Dr Lucy Resnyansky, Research Scientist, Effects-Based Modelling and Analysis, Defence Science and Technology Organisation
- Dr Mark Rix, Graduate School of Business, University of Wollongong
- Dr Mike Davies, Head of Effects-Based Modelling and Analysis, Defence Science and Technology Organisation
- Dr Paul Ferrar, Research Project Officer, Australian Academy of Science
- Dr Per Bro, Engineering School, University of Talca, Chile
- Dr Robyn Lawson, School of Computing and Information Technology, University of Western Sydney

- Dr Sean Brawley, School of History, University of NSW
- Dr Timber Haaker, Telematica Institut, The Netherlands
- Dr Tony Green, School of Safety Science, University of NSW
- Dr Yan Wang, Lecturer, Department of Computing, Macquarie University
- Eamonn Glennon, SigNav, Canberra, Australia
- Geoff Crowe, Hassell, Senior Associate
- Glen Scribner, Intelligence Officer, Australian Federal Police
- Ir Yan Wang, Delft University of Technology, The Netherlands
- Johnson Ihyeh Agbinya, Senior Lecturer, Telecommunications Engineering, University of Technology, Sydney
- Maggie Burke, Business Director, Exner
- Matt Higgins, Satellite Positioning Applications, Queensland Government
- Michael Wallbaum, Aachen University of Technology, Germany
- Professor Andy Simmonds, Computer Science, University of Technology, Sydney
- Professor Chris Rizos, Head of Surveying and Spatial Information Systems, SNAP, University of NSW
- Professor David Lowe, Faculty of Engineering, University of Technology, Sydney
- Professor Donald Lambertson
- Professor Dr Burkhard Stiller, Communication Systems, University of Zurich
- Professor Dr Claudia Linnhoff-Popien, Mobile and Distributed Systems Group, Ludwig Maximilians Universitat Munchen, Germany
- Professor Ed Dawson, Director Information Security Research Centre, Queensland University of Technology, QLD
- Professor George Mohay, Information Security Institute, QUT
- Professor Jean Cross, Safety Sciences, University of New South Wales
- Professor Liu Lu, BeiHang University, School of Economics and Management, Beijing, China
- Professor Lynn Batten, Director, Information Security Group, Deakin University
- Professor Margaret Jackson, Computer Law, RMIT
- Professor Mary Barrett, Marketing, University of Wollongong
- Professor Narciso Cerpa, Pro-Vice Chancellor, University of Talca, Chile
- Professor Peter Croll, Preventative Health, CSIRO, QUT
- Professor Simon Bronitt, National Europe Centre, ANU
- Professor Simon Davies, London School of Economics
- Professor Yun Yang, Academic Leader, Computer Science and Software Engineering, Swinburne University
- RFID Protrac, Roger Whyborn, Carbrook QLD
- Richard Frewen, Senior Advisor, Seraphim Risk Management
- Senior Lecturer Dr Frances Miley, ADFA
- Senior Lecturer Laurel Dyson, University of Technology, Sydney
- Senior Lecturer Rob Steele, University of Technology, Sydney
- Suzanne Lockhart, UNISA ARC PhD Grant Recipient
- Toshihiko Yamakami, Evangelist R&D, Access Co, Japan

8. General comments and conclusions

Teaching Outcome

- The conferences, workshops and seminars I have attended have informed my teaching in the area of eBusiness bringing me up-to-date with current research.
- I have received training in the areas of teacher reflection, communication styles, first aid, and Chinese cultural awareness which will support my teaching practice.
- I have published a paper on teaching reflection in the IEEE mBusiness conference, informing the work I did in 2004 on Case Studies in IT (Location-Based Services).

- I have been involved in the completion of one Faculty Service agreement (IACT406) and the beginning of another (IACT304)
- The value that my study leave has brought to my teaching is a better understanding of cutting-edge research in the domain of eBusiness bringing me up-to-date with the latest research and industry practice. I have also developed a strong interest in national security.
- The value that my study leave will bring to SITACS is a more mature, well-rounded academic who has an interdisciplinary understanding of current events in her discipline.

Research Outcome

- I have successfully supervised the completion of 8 honours projects and four 321 Annual Software Projects in S2 of 2005.
- Continued to conduct literature reviews on the following topics:
 - RFID transponder implants for humancentric applications
 - Positioning technologies such as GPS and their impacts on society
 - Location-based service applications
 - Socio-technical dimensions of eBusiness
- I have gained an appreciation for who the primary authors are in the above-mentioned topics and the types of studies that are conducted in my field.
- In writing the volume of papers that I have, I have gained an appreciation for the importance of collaboration and how to cultivate co-author relationships, especially during demanding times when papers are due.
- The papers I have researched and written have encouraged me to explore a diverse range of methodologies from usability contexts, scenario planning, interviews, to surveys, content analysis and document analysis.
- The value that study leave has brought to my research is a more focused effort in a given area of expertise. I have had the opportunity to sit back and think about what I want to be working on in the long-term and how I can go about doing so.
- The value that study leave has brought to my research with respect to SITACS is in strengthening the outcomes of the DSL-CeBAR research group. Already a senior member of this group, I believe my research will help boost the group's profile. The study leave has also assisted me to mentor others.

Publication Outcome

- I had nineteen papers either accepted or published or presented in S2 of 2005. Fourteen of these papers were published in conference proceedings, journal papers or book chapters. At least half of these publications were in the IEEE. I credit this to sustained and consistent work. This study leave has helped me establish a track record in the domain of LBS>mBusiness>eBusiness. I believe I am now one of the few authors publishing in the socio-technical implications of LBS.
- I have ten papers that are currently under review.

Value to the University

- I believe that my research outcomes have helped place me and the university on the 'LBS map of academics'. Now that I have established some type of track record my future vision is to attempt to publish in high-impact journals that receive wider coverage than conference proceedings. I hope to become involved in larger research projects that can result in findings that carry more weight.

- I have also networked with key academics across the globe.

Conclusion

- Study leave has granted me an incredible opportunity to explore areas of interest further. While a lot of the study leave was spent preparing for conference presentations or writing papers or physically present at workshops, I felt the experience was timely. It has given me the ability to establish a precise 'area of expertise' and to communicate this to peers in other institutions. The networks I established during this time are invaluable to my future as an academic.
- The emerging area I am committed to is "Technology & Society" within the context of New Media and Emerging Services, namely the using of positioning technologies in a social context. Very few academics are presently writing about RFID implants in humans, and only one or two are writing on the social implications of these technologies in emerging applications, I therefore am in the rare position of "establishing" a branch of research.

Snapshots from my study leave:



From top left to right: Spatial information systems seminar at UNSW, Co-author presenting paper in Munich Germany at the IEEE Mobile Commerce and Services, Collector Latin America Conference presentation on e-Malls, VIC Trams Operation Centre Visit, Computer Forensics Workshop at QUT, IEEE e-Business Engineering Conference dinner, Collector Latin America Location Services presentation, IEEE Mobile Business Conference dinner at Darling Harbour.

Katina Michael

13 January 2006