

*AUCKLAND UNIVERSITY OF TECHNOLOGY*  
*School of Computing and Mathematical Sciences*

**Master of Computer and Information Sciences & Bachelor of Computer and Information Sciences (Honours)**

**TOPICS for Thesis/Dissertation research, updated 12 May 2013**

Supervisor Details	Research Areas / Topics / Projects
<p><b>Professor Ajit Narayanan</b></p> <p><b>Head of School of Computing and Mathematical Sciences</b>  <a href="mailto:ajit.narayanan@aut.ac.nz">ajit.narayanan@aut.ac.nz</a></p>	<ol style="list-style-type: none"> <li>1. Application of artificial intelligence techniques (e.g. genetic algorithms, neural networks, fuzzy logic, particle swarm optimisation). No previous knowledge of molecular biology is required.</li> <li>2. Simulations of quantum computing to identify novel quantum algorithms. No previous knowledge of basic quantum mechanics required.</li> <li>3. Intelligent forensic IT: the application of artificial intelligence techniques to detect computer fraud, including internet fraud (e.g. e-laundering), and computer misuse.</li> </ol>
<p><b>Dr. Stephen Thorpe</b></p> <p><b>Deputy Head of School of Computing and Mathematical Sciences</b>  <a href="mailto:sthorpe@aut.ac.nz">sthorpe@aut.ac.nz</a></p>	<p>Potential areas of supervision: Online Groups, Global Virtual Teams, Computer Mediated Communication, E-Government, Cloud Computing, Social Media, Interactive Learning Systems, Online Learning, Cloud Security, Systems Usability, Online Leadership and Facilitation, Multi-Stakeholder Engagement.</p> <p><b>Specific current projects:</b></p> <ol style="list-style-type: none"> <li>1. Use of Galaxy, iPad and other mobile devices with pre-school and young people for learning</li> <li>2. The use of SharePoint in facilitating a collaborative research culture in crown research entities</li> <li>3. Facilitation and management of global virtual teams or cloud computing collaboration</li> <li>4. 3D virtual worlds and education</li> <li>5. Satisfaction drivers for participants in the emerging collaborative consumption culture</li> <li>6. Systemic literature review of virtual teams</li> </ol>
<p><b>Shoba Tegginmath,</b></p> <p><b>Programme Leader CIS, SCMS</b>  <a href="mailto:shoba.tegginmath@aut.ac.nz">shoba.tegginmath@aut.ac.nz</a></p>	<p><b>Research areas of interest:</b></p> <ol style="list-style-type: none"> <li>1. Linked data and the semantic web</li> <li>2. Ontologies and the semantic web</li> <li>3. Data modelling, process modelling</li> <li>4. Databases and data warehousing</li> <li>5. Mobile applications development</li> </ol> <p><b>Specific current project</b></p> <ul style="list-style-type: none"> <li>• Publications ontology and expertise mining</li> <li>• Semantic search</li> </ul>

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<b>Krassie Petrova, SCMS</b> <a href="mailto:kpetrova@aut.ac.nz">kpetrova@aut.ac.nz</a>	<ol style="list-style-type: none"> <li>1. Mobile apps design, design science research, incl. evaluation</li> <li>2. Investigating the regulatory environment related to mobile service</li> <li>3. Mobile service design and implementation, service science research</li> <li>4. Services and applications for the 'mobile' campus</li> </ol>
<b>Mali Senapathi, SCMS</b> <a href="mailto:msenapat@aut.ac.nz">msenapat@aut.ac.nz</a>	<ol style="list-style-type: none"> <li>1. IS adoption, implementation and diffusion.</li> <li>2. Software Engineering</li> <li>3. Post-adoptive usage of Agile Software Development Methodologies.</li> <li>4. Data and Process Modelling, Agile Modelling.</li> </ol>
<b>Associate Professor Tony Clear, SCMS</b> <a href="mailto:tclear@aut.ac.nz">tclear@aut.ac.nz</a>	<p><b>Potential areas of supervision:</b> Collaborative Computing, developing and evaluating collaborative technologies and virtual environments; Global Virtual Teams &amp; Global Software Engineering (GSE); Computing Education Research (CER); Software Development/Software Engineering and professional practice, The nature of research and the research process</p> <p><b>Specific current projects</b></p> <ol style="list-style-type: none"> <li>1. Mobile Computing in Education - Tablet PCs and mobile platform implementations of explanograms</li> <li>2. 3D virtual worlds and cybericebreaker enhancements</li> <li>3. Technology-Use Mediation in Global Software Engineering Teams</li> <li>4. Operationalising the theory of Collaborative Technology Fit through field studies</li> <li>5. Extended Bibliometric analysis of research performance in the computing disciplines using electronic databases and search engines</li> <li>6. Empirical studies of professional programmers and the novice to expert continuum</li> </ol>
<b>Associate Professor Nurul Sarkar, SCMS</b> <a href="mailto:nsarkar@aut.ac.nz">nsarkar@aut.ac.nz</a>	<p><b>Potential areas of supervision:</b> Network protocol design and optimisation, Wireless MAC and routing protocols, Cross-layer design optimisation, VoIP and Video over WLANs, Multiple QoS provisioning for emergency traffic in WLANs and WiMAX, High-density WLANs, Cognitive radio networks, Wireless mesh networks, MANETs, VANETs, Nanonetworks, Optical networks, and Network security.</p> <p><b>Specific current projects</b></p> <p><b>A: WLAN and Bluetooth Performance</b></p> <ol style="list-style-type: none"> <li>1. Performance study of IEEE 802.11n WLAN in noise and interfering environments</li> <li>2. Impact of walls and partitions on the performance of a typical 802.11n in obstructed office environments</li> <li>3. Performance study of IEEE 802.11n in the presence of hidden stations</li> </ol>

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	<ol style="list-style-type: none"> <li>4. A study of Wi-Fi cloud performance in the shopping malls using propagation measurement and simulation</li> <li>5. An investigation on the impact of traffic distribution on WLAN performance</li> <li>6. A study on the combined effect of received signal strength and video streaming over WLANs</li> <li>7. Performance study of IEEE 802.15-based wireless PANs (Bluetooth)</li> </ol> <p><b>B: WLAN and Bluetooth Performance</b></p> <ol style="list-style-type: none"> <li>8. Performance estimation of VoIP over WLANs</li> <li>9. Performance estimation of Video over WLANs</li> <li>10. Performance study of IEEE 802.11u for emergency communications</li> <li>11. QoS provisioning for emergency services in IEEE 802.16-Based Mobile WiMAX</li> </ol> <p><b>C: MANETs and Mesh networking</b></p> <ol style="list-style-type: none"> <li>12. An energy efficient routing protocol for MANETs: Modelling and performance evaluation</li> <li>13. Modelling and optimisation of wireless mesh network MAC protocols</li> <li>14. Performance modelling of congestion control mechanisms in wireless mesh networks</li> <li>15. Performance study of routing protocols for wireless mesh networks</li> </ol> <p><b>D: VANETS</b></p> <ol style="list-style-type: none"> <li>16. Performance study of IEEE 802.11p for Vehicle-to-Vehicle communications using simulation and modelling</li> <li>17. WiFi for VANETs: Performance modelling and analysis</li> </ol> <p><b>E: Smart metering, ATM, Nanonetworks, and Optical networks</b></p> <ol style="list-style-type: none"> <li>18. A communication link for smart meter systems: Modelling and performance analysis</li> <li>19. Modelling and performance studies of ATM networks</li> <li>20. Optical backbone networks: Modelling and performance study</li> <li>21. Nanonetwork architecture: design, modelling and performance evaluation</li> </ol> <p><b>F: Network security</b></p> <ol style="list-style-type: none"> <li>22. Evaluating security mechanisms in various protocol layers of IEEE 802.11-based WLANs</li> <li>23. Developing an improved security mechanism for IEEE 802.11-based WLANs</li> <li>24. Developing a framework for network security and risk management</li> </ol>
<p><b>Dr Alan Litchfield, SCMS</b>  <a href="mailto:alitchfi@aut.ac.nz">alitchfi@aut.ac.nz</a></p>	<p><b>Research areas of interest:</b></p> <ol style="list-style-type: none"> <li>1. Philosophy of Information Systems: The development of a pragmatic holistic philosophy of Information Systems.</li> <li>2. Cloud Computing – issues in processing large data sets</li> <li>3. The impact of Web 2.0 on Information Systems Work Systems.</li> <li>4. Is Web 2.0 a disruptive technology?</li> <li>5. Development of tools for tribal genealogical research</li> </ol>

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<p><b>Dr David Parry , SCMS</b>  <b>Director of the AUT RFID Applications (AURA) laboratory</b>  <a href="mailto:dparry@aut.ac.nz">dparry@aut.ac.nz</a></p>	<p><b>Research areas of interest:</b></p> <ol style="list-style-type: none"> <li>1. Health informatics – Computing applications in healthcare</li> <li>2. Radio Frequency Identification (RFID) Data handling and system development</li> <li>3. Semantic Web, ontologies and information retrieval</li> </ol> <p><b>Planned projects include:</b></p> <ul style="list-style-type: none"> <li>• activity representation and analysis, from RFID and motion capture data</li> <li>• “crowdsourcing” for ontology creation and use in the medical domain</li> <li>• ubiquitous computing in healthcare</li> <li>• RFID for sports events</li> </ul>
<p><b>Professor Alvis Fong, SCMS</b>  <a href="mailto:afong@aut.ac.nz">afong@aut.ac.nz</a></p>	<ol style="list-style-type: none"> <li>1. Multimedia processing : Semantic understanding of media contents - a multi-modal signal processing approach</li> <li>2. Multimedia data management: Annotation, indexing, and retrieval of media contents - a complete semi-automatic (or fully automatic) framework that could be customizable for different application domains (e.g. video library, music library, surveillance footage, etc.), and in the context of Web 2.0.</li> <li>3. Applied image processing: Adaptation and development of (existing/new) image processing techniques for specific applications</li> </ol>
<p><b>Boris Basic, SCMS</b>  <a href="mailto:bbasic@aut.ac.nz">bbasic@aut.ac.nz</a></p>	<p><b>Supervision Areas</b></p> <ul style="list-style-type: none"> <li>• Video, image, sound and alternative multimodal signal processing,</li> <li>• Sport coaching and biomechanics applicative computation (automation),</li> <li>• Digital media design - computing assisted software design,</li> <li>• Motion data acquisition, processing and visualisation,</li> <li>• Applications (including the areas above) in soft computing, machine learning and evolving (neuro fuzzy evolutionary) systems.</li> </ul> <p><b>Examples of the specific projects</b></p> <ul style="list-style-type: none"> <li>• Marker and Marker-less motion capture,</li> <li>• Human Pose, body or silhouette estimation,</li> <li>• Scene modelling from video,</li> <li>• Ubiquitous computing for motion acquisition.</li> </ul> <p>Prospective students should have a positive attitude and be willing to learn or advance in some of the following areas, as needed:</p> <ul style="list-style-type: none"> <li>• Hardware and/or software design <i>i.e.</i> some knowledge in software development and architectures; using languages and tools or being able to acquire new ones,</li> <li>• Algorithms.</li> </ul>

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<p><b>Jim Buchan, SCMS</b>  <a href="mailto:jbuchan@aut.ac.nz">jbuchan@aut.ac.nz</a></p>	<p><b>Areas of Interest</b></p> <ul style="list-style-type: none"> <li>• Requirements engineering</li> <li>• Software engineering</li> <li>• Model driven development</li> <li>• Problem oriented design</li> <li>• Software process improvement</li> <li>• Applications of ontologies and their management</li> <li>• Knowledge Management</li> </ul> <p><b>Specific projects and previous supervisions:</b></p> <ol style="list-style-type: none"> <li>1. Sharing domain understanding for requirements engineering</li> <li>2. Ontology-based techniques for domain knowledge sharing and reuse for software development</li> <li>3. Cognitive complexity in domain problem understanding for software development</li> <li>4. Understanding the effects of test-driven development on software development</li> <li>5. An integrated tool set for supporting software development and learning (with Anne Philpott and Dr. Andy Connor)</li> <li>6. Risk Management in small to medium software development companies (with Prof. S. MacDonell)</li> <li>7. Requirements prioritisation techniques for large requirements sets</li> <li>8. Object-relational mapping metrics (with Prof. S. MacDonell)</li> <li>9. Model based verification of domain and user requirements</li> <li>10. Knowledge management and reuse using fuzzy ontologies (with Dr. Dave Parry)</li> <li>11. Retrofitting unit and automated testing to product driven development</li> <li>12. User-driven ontology development and maintenance</li> </ol>
<p><b>Leo Hitchcock, SCMS,</b>  <a href="mailto:lhitchco@aut.ac.nz">lhitchco@aut.ac.nz</a></p>	<ol style="list-style-type: none"> <li>1. Cross cultural Issues in Global Collaborative systems software development projects</li> </ol>
<p><b>Dr Philip Carter, SCMS</b>  <a href="mailto:pcarter@aut.ac.nz">pcarter@aut.ac.nz</a></p>	<ol style="list-style-type: none"> <li>1. Usability investigations of any computer-involved artefact typically using some combination of usability testing, personas and/or scenarios.</li> <li>2. User-Centred Design. Research-based design of a computer-based artefact involving some aspect of usability testing and/or formulation of personas and scenarios.</li> <li>3. Projected identity. Exploration of mechanisms in the choosing of items to represent aspects of the psychological or internal self in on-line, virtual worlds. Investigations into the strength and nature of that projected identity.</li> <li>4. Computer-based psychodramatic enactments. Creation of a virtual stage and methods in which users can participate in unscripted drama of events and/or their own internal schemas and social self. Can be applied to any self-help or therapeutic endeavour.</li> </ol>

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<p><b>Professor Sergei Gulyaev, SCMS</b>  <b>Director of the Institute for Radio Astronomy and Space Research at AUT</b>  <b>Dr Tim Natusch, SCMS</b>  <a href="mailto:sergei.gulyaev@aut.ac.nz">sergei.gulyaev@aut.ac.nz</a></p>	<ol style="list-style-type: none"> <li>1. Visualisation of data from the first NZ Hydrogen Atomic Clock: Development of software for the Atomic Clock, processing data from the Atomic Clock, producing Frequency Standard Stability plots and other statistics, 3-D visualisation.</li> <li>2. Using fibre network for distribution of ultra-high precision Time Standards: investigation of network performance for transferring ultra-high precision data, development of computerised statistical model for time series, and analysis of errors involved.</li> <li>3. Visualisation of Radio Astronomy observations: working with the robotic Radio Telescope in Warkworth, development of programs to open and analyse Radio Telescope recorded data files, 3-D visualisation of Radio Telescope data.</li> <li>4. Development of networking capacity for the robotic Radio Telescope in Warkworth: investigation of speed of KAREN network, linking Radio Telescope to AUT network, 1G Ethernet implementation, 10G Ethernet investigation, investigation of performances of network protocols (TCP/IP vs. UDP, HS-TCP, BIC ...).</li> <li>5. Supercomputing with the NZ Supercomputing Centre in Wellington: Radio astronomy data correlation, parallelisation algorithms, e-Research in Radio Astronomy and Space Geodesy.</li> <li>6. Development of software algorithms for Radio Telescope investigation: implementation of mathematical methods for radio telescope calibration, development of on-line algorithm for Radio Telescope tracking and pointing regimes.</li> <li>7. Imaging Synthesis in e-Research: Imaging synthesis and visualisation in Radio astronomy, investigation of dynamical evolution of Active Galactic Nuclei – the primordial object in the Universe – based on real astronomical observations.</li> </ol>
<p><b>Dr Russel Pears, SCMS</b>  <a href="mailto:rpears@aut.ac.nz">rpears@aut.ac.nz</a></p>	<p><b>Areas of Interest</b></p> <ul style="list-style-type: none"> <li>• Machine Learning and Data Mining</li> <li>• Data Warehousing</li> <li>• Data Compression</li> </ul> <p><b>Specific Projects</b></p> <ol style="list-style-type: none"> <li>1. Mining High Speed Data Streams with Decision Trees</li> <li>2. Mining Association Rules in High Speed Data Streams</li> <li>3. Mining Highly Imbalanced data sets</li> <li>4. Machine Learning techniques for improving Dynamic Credit Scoring using Payment Prediction</li> <li>5. #Use of Data Compression techniques for optimizing queries in Data Warehouses</li> <li>6. Building of Dynamic Network Models for Multivariate Time-Series: Financial Data Behavior, Modeling and Prediction.</li> </ol>
<p><b>Professor Nik Kasabov,</b>  <b>Director of AUT Knowledge Engineering and Discovery Research Institute (KEDRI)</b>  <a href="mailto:nkasabov@aut.ac.nz">nkasabov@aut.ac.nz</a></p>	<ol style="list-style-type: none"> <li>1. Knowledge engineering and knowledge discovery using neural networks (Connectionist systems)</li> <li>2. Neuro-, fuzzy and evolutionary systems</li> <li>3. Spiking neural networks for spatio- and spectro-temporal data modelling and pattern recognition</li> <li>4. EEG data analysis</li> <li>5. Brain- Computer Interfaces (BCI)</li> </ol>

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	<ol style="list-style-type: none"> <li>6. Controlling robots through brain signals</li> <li>7. Quantum inspired evolutionary computation</li> <li>8. Bioinformatics</li> <li>9. Speech-, image and multimodal signal processing</li> <li>10. Moving object recognition</li> <li>11. Personalised modelling for personalised medicine</li> <li>12. Environmental data modelling</li> </ol>
<b>Professor Phillip Sallis, SCMS</b> <b>Director, Geoinformatics Research Centre</b> <a href="mailto:psallis@aut.ac.nz">psallis@aut.ac.nz</a> <b>Dr Subana Shanmuganathan</b> <a href="mailto:sshanmug@aut.ac.nz">sshanmug@aut.ac.nz</a>	<ol style="list-style-type: none"> <li>1. Data mining <ul style="list-style-type: none"> <li>• Geo-referenced (coded) data analysis</li> <li>• Sensor design/ wireless telemetry systems</li> <li>• Hybrid approaches to analysing disparate data sets</li> </ul> </li> <li>2. Image processing</li> <li>3. Text mining</li> </ol>
<b>Anne Philpott , SCMS</b> <a href="mailto:aphilpot@aut.ac.nz">aphilpot@aut.ac.nz</a>	<ol style="list-style-type: none"> <li>1. Software Engineering Support Tool for Novices. Development of a tool that uses intelligence to support novice software developers/development teams and both enables concept learning and reinforces best practice.</li> <li>2. Software Development Practices</li> <li>3. Software Development Tools</li> <li>4. Software Development Methodologies</li> <li>5. Software Design</li> <li>6. Agile Development</li> </ol>
<b>Dr Robert Wellington, SCMS</b> <b>Director HCI Lab</b> <a href="mailto:rwellling@aut.ac.nz">rwellling@aut.ac.nz</a>	<p>As the Director of the Human Computer Interaction (HCI) lab Dr Wellington promotes, supports, and supervises research in this area. A variety of research is currently being undertaken, and much more possible with the resources available.</p>
<b>Dr Brian Cusack, SCMS</b> <b>Director CRISM Security</b> <a href="mailto:bcusack@aut.ac.nz">bcusack@aut.ac.nz</a>	<ol style="list-style-type: none"> <li>1. IT governance</li> <li>2. Security audit</li> <li>3. ISO / IEC standards implementation</li> </ol>
<b>Dr Jacqui Whalley, SCMS</b> <a href="mailto:jwhalley@aut.ac.nz">jwhalley@aut.ac.nz</a>	<b>Areas of supervision:</b> <ol style="list-style-type: none"> <li>1. Geographical Information Systems</li> <li>2. Information Visualization</li> <li>3. e-Heritage</li> </ol>

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	<ol style="list-style-type: none"> <li>4. Audio Processing and Visualization</li> <li>5. Computing and Mathematics in Medicine and Biology</li> <li>6. Computer Graphics</li> <li>7. Computer Science Education</li> <li>8. Search Based Software Engineering (with Dr. Andy Connor)</li> </ol> <p><b>Possible research projects include:</b></p> <ol style="list-style-type: none"> <li>1. Visualizing Tribal Genealogies</li> <li>2. Historic Site Preservation and e-Heritage</li> <li>3. Visualization of Genomic Data</li> <li>4. Audio Processing and Visualization</li> <li>5. RFID for managing heritage archives (with Dr. Dave Parry situated in the AURA laboratory)</li> <li>6. Examining the development of expertise in computer programmers</li> <li>7. Tools for novice programmers</li> </ol> <p><b>For further information see:</b> <a href="http://elena.aut.ac.nz/homepages/staff/J-Whalley/index.html">http://elena.aut.ac.nz/homepages/staff/J-Whalley/index.html</a></p>
<p><b>Dr. WeiQi Yan, SCMS</b>  <a href="mailto:wyan@aut.ac.nz">wyan@aut.ac.nz</a></p>	<p><b>Areas of interest:</b></p> <ol style="list-style-type: none"> <li>1. Information Security/Information Hiding</li> <li>2. Intelligent Surveillance</li> <li>3. Intelligent Forensics</li> <li>4. Intelligent Network</li> <li>5. Multimedia Security</li> </ol> <p><b>Research Projects:</b></p> <ol style="list-style-type: none"> <li>1. Mobile based intelligent navigation</li> <li>2. Surveillance devices control using mobile</li> <li>3. Mobile voting system</li> <li>4. Mobile based teaching and learning system</li> <li>5. Cloud security and forensic in hypervisor</li> <li>6. Cloud computing for intelligent surveillance</li> <li>7. Alarm making for surveillance</li> <li>8. Biometrics for suspects recognition</li> <li>9. Privacy protection</li> <li>10. Content based visual cryptography</li> <li>11. Digital currency forensics</li> <li>12. Network forensics and anti-forensics</li> </ol>



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	13. Digital image splicing 14. Streaming forensics
<b>Dr. Quan Bai, SCMS</b>  <a href="mailto:Quan.Bai@aut.ac.nz">Quan.Bai@aut.ac.nz</a>	<b>Areas of interest:</b> <ol style="list-style-type: none"> <li>Intelligent systems</li> <li>Data management</li> <li>Knowledge discovery</li> <li>Trust management</li> <li>Multi-agent Systems</li> </ol> <b>Specific Projects for 2011:</b> <ol style="list-style-type: none"> <li>Provenance based trust estimation</li> <li>Trust based service composition</li> <li>Trust evaluation for groups of agents</li> <li>Smart phone based street safety</li> </ol>
<b>Dr. Jairo Gutierrez, SCMS</b>  <a href="mailto:jairo.gutierrez@aut.ac.nz">jairo.gutierrez@aut.ac.nz</a>  921 9999 Ext. 5854  021 630 747	<b>Areas of interest:</b> <ul style="list-style-type: none"> <li>Computer Networks (including wireless)</li> <li>Network management systems</li> <li>Quality of Service issues associated with Internet protocols</li> </ul> <b>Specific Projects for 2012/2013:</b> <ol style="list-style-type: none"> <li>Use of Mechanism Design techniques to enhance the Border Gateway Protocol (using incentives)</li> <li>Business Models for Digital Services</li> <li>Provision of energy efficient cloud computing using policy-based management systems (with Dr. William Liu)</li> <li>Research into alternatives to 4G+ cellular systems</li> <li>Pricing of ubiquitous network services</li> </ol>
<b>Dr. Barry Blundell, SCMS</b>  <a href="mailto:Barry.blundell@aut.ac.nz">Barry.blundell@aut.ac.nz</a>	<p>Volumetric displays permit 3D images to be depicted in a transparent physical volume. Since images displayed in this way are inherently three-dimensional, depth cue conflict (and hence eye strain) is avoided. However, much work remains to be done in order to successfully develop volumetric displays. Two exemplar research projects are:</p> <ol style="list-style-type: none"> <li>Determination of image flicker as a function of the duty cycle of image update. This project involves a literature search and some basic experimental work, and is likely to be particularly of interest to students who wish to develop some basic hardware.</li> <li>The implementation of swept-volume volumetric displays employing composite forms of mechanical motion. This project</li> </ol>

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	involves the development of simulation software and is likely to be of interest to students who enjoy computer graphics programming.
<b>Dr. William Liu, SCMS</b>  <a href="mailto:william.liu@aut.ac.nz">william.liu@aut.ac.nz</a>	<b>Areas of interest:</b> <ol style="list-style-type: none"> <li>1. Network sustainability i.e., green networking</li> <li>2. Network survivability and robustness</li> <li>3. Trustworthy computing</li> <li>4. Cloud networking security</li> <li>5. Content based network routing</li> </ol> <b>Specific Projects for 2012 and 2013:</b> <ol style="list-style-type: none"> <li>1. Energy aware routing in next generation networks (NGNs)</li> <li>2. Trade off study in green networking</li> <li>3. Greening cloud data centres</li> <li>4. Service resilience in smartgrid communication networks</li> <li>5. Robustness in complex networks</li> <li>6. Trust based routing in next generation networks (NGNs)</li> <li>7. Optimization in smartgrid communication networks</li> <li>8. Security key management in wireless networks</li> <li>9. Dependability study in cloud networking</li> </ol>
<b>Dr Stefan Schliebs SCMS</b>  <a href="mailto:sschlieb@aut.ac.nz">(sschlieb@aut.ac.nz)</a>	<b>Research area/Topics/Projects:</b> <ol style="list-style-type: none"> <li>1. Applications of machine learning algorithms</li> <li>2. Analysis and simulation of spiking neural networks</li> <li>3. Reservoir computing</li> <li>4. Evolutionary computation</li> </ol>

See also:

**Computing and mathematical sciences research at AUT University at**

- <http://www.aut.ac.nz/study-at-aut/study-areas/computing--mathematical-sciences/profiles/research>
- <http://www.aut.ac.nz/study-at-aut/study-areas/computing--mathematical-sciences/profiles/research/current-and-past-masteras-research-titles-theses-and-dissertations>

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**Research Institutes and Centres**

- AUT Radiofrequency Identification Applications Laboratory (AURA) <http://www.aut.ac.nz/study-at-aut/study-areas/computing--mathematical-sciences/profiles/research/radiofrequency-identification-applications-laboratory>
- Centre for Artificial Intelligence Research (CAIR) <http://www.aut.ac.nz/research/research-institutes/cair>
- Geoinformatics Research Centre <http://www.geo-informatics.org/>
- Institute for Radio Astronomy and Space Research (IRASR) <http://www.irasr.aut.ac.nz/>
- Knowledge Engineering and Discovery Research Institute (KEDRI) <http://www.kedri.aut.ac.nz/>
- Software Engineering Research Laboratory (SERL) <http://www.aut.ac.nz/study-at-aut/study-areas/computing--mathematical-sciences/profiles/research/software-engineering-research-laboratory-serl>
- AUT Cloud Computing Centre (<http://www.aut.ac.nz/cloud> - coming soon)
- Security Computing Group (<http://www.aut.ac.nz/security> - coming soon)

**SCMS Staff at** <http://www.aut.ac.nz/study-at-aut/study-areas/computing--mathematical-sciences/profiles/our-staff>

**For enquiries about enrolling in a MCIS/BCIS(Hons) thesis or dissertation, contact:**

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