Information and computing sciences

From research into cyber security, intelligent virtual agents and malware to data mining and controlled languages, Macquarie's information and computing sciences researchers are uniquely positioned to help shape the complex issues that define the future of humanity.

Our location in the heart of Australia's largest high-tech precinct facilitates collaborative research projects with industry that seek bold solutions for national and global challenges.

High-profile industry partners include Atlantek Vision, the Australian Signals Directorate, BCS Online, CSIRO, Datacom, Defence Science and Technology Organisation, EMC, Holocentric, Honeywell, Huawei, IBM, Microsoft and Optus.

Recently, we collaborated with Optus Business to launch the $10 million Optus Macquarie University Cyber Security Hub, which supports businesses and government to recognise and protect themselves from increasing cyber threats through research, professional training and consultancy services to the private sector and government agencies.

Our renowned researchers – including a Fellow of the Association for Computational Linguistics and a Microsoft Chair in Innovation in Computing – have made major contributions to the ARC Research Networks in Human Communication Science and Enterprise Information Infrastructure, as well as to one of three ARC/NHMRC Thinking Systems projects, and partner in the Capital Markets CRC.

Macquarie also enjoys enviable rankings – in the most recent Excellence in Research for Australia evaluation, our research in the sub-discipline of computation theory and mathematics received a rating of 'performance above world standard', and our research in the sub-disciplines of artificial intelligence and image processing, and distributed computing received a rating of 'performance at world standard.'

As a higher degree research candidate at Macquarie, you will have the opportunity to research alongside some of the world's best scholars whose cutting-edge research continually pushes the boundaries of knowledge. You will also benefit from our working partnerships with many of the global IT companies neighbouring our campus.

mq.edu.au/research/information-and-computing-sciences

MACQUARIE
University
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AREAS OF SPECIALISATION

- Algorithms and cryptography
- Category theory
- Computer and network security
- Computer games
- Cyber security
- Information systems
- Intelligent systems
- Machine learning
- Natural language processing
- Programming languages
- Services computing and cloud computing
- Social networks
- Software verification
- Trust management
- Virtual reality

RESEARCH HUBS

- Advanced Cyber Security Research Centre
- Centre for Advanced Computing
- Centre for Language Sciences
- Centre for Language Technology
- Centre of Australian Category Theory
- Intelligent Systems Group
- Programming Languages and Verification Group
- Sustainable Software and Systems Group
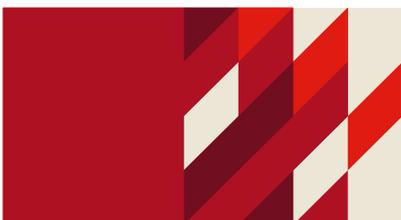- Virtual and Interactive Simulations of Reality

OUR RESEARCH PRIORITIES

We pursue excellence in a broad range of research areas. Our five interdisciplinary strategic research priorities – Healthy People, Resilient Societies, Prosperous Economies, Secure Planet and Innovative Technologies – respond to globally significant challenges and opportunities to improve the lives of millions. Together, these research priorities provide a focal point for research, with discoveries made under these priorities translating into real improvements in the lives of local, national and global communities.

JOINTLY SUPERVISED PHD PROGRAMS

Macquarie actively encourages cotutelles and joint degrees – shared supervision arrangements with universities whose research activity strongly aligns with ours. Under each model, you are enrolled at two universities with a principal supervisor at each and may be eligible for additional scholarship support.

mq.edu.au/cotutelle-and-joint-phd

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