AREAS OF SPECIALISATION

- Algorithms and cryptography
- Category theory
- Computer and network security
- Computer games
- 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
- Virtual and Interactive Simulations of Reality

From research into cybersecurity, 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, Australian Signals Directorate, BCS Online, CSIRO, Datacom, Defence Science and Technology Organisation, EMC, Holocentric, Honeywell, Huawei, IBM, Microsoft and Optus.

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 (ERA) 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.
Highlights


• We also have close involvement with the ARC Centre of Excellence in Cognition and its Disorders.

• Several higher degree research candidates have received awards from reputable conferences and journals in recent years, including IEEE SCC, IEEE TrustCom and The Computer Journal.

Support

You will be provided with individualised support, as well as a range of opportunities, at all stages of your research degree, including:

• higher degree research learning skills advisers who provide valuable training options such as workshops in research communication, presentation skills, academic writing skills, thesis planning and more

• inspirational supervision and mentoring

• a candidature management plan that closely supports progress, commencement programs, work-in-progress reviews, and presentations providing opportunities for feedback from a panel of academics

• real-world engagement with opportunities for cotutelle and joint degrees

• financial support for a range of research-related activities

• world-class facilities

• a transformative research experience that fosters cross-disciplinary collaboration.

RESEARCH LEADERS

Meet some of our internationally renowned researchers.

Professor Mark Johnson is a Fellow of the Association for Computational Linguistics. His expertise spans computational linguistics, natural language processing and machine learning, with a specific focus on parsing and its applications to information extraction from text and speech. He is the director of the Centre for Language Sciences (CLaS) – a Macquarie University Concentration of Research Excellence – a former president of the Association for Computational Linguistics (ACL), and the 2015 President of ACL’s SIGDAT.

Professor Vijay Varadharajan is the Microsoft Chair in Innovation in Computing, and is a member of the Australian Government’s peak security advisory body. He is a former member of the Australian Research Council College of Experts in Engineering, Mathematics and Informatics and a former Technical Board Director at the Australian Computer Society. His research has made significant impact and contributed to the development of several successful commercial security systems.