Macquarie’s information and computing sciences research is of an international calibre. In the Excellence in Research for Australia (ERA) 2012 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’.

Located in the heart of Australia’s largest high-technology precinct, Macquarie’s information and computing science researchers are uniquely positioned to conduct collaborative research of national and international significance.


Our high-profile researchers, who include a Fellow of the Australian Academy of Science, 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, contribute to one of three ARC-NHMRC Thinking Systems projects, and partner in the Capital Markets CRC.

As an HDR candidate 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, and you’ll also benefit from our working partnerships with many of the global high-tech IT companies neighbouring our campus in Australia’s largest high-technology precinct.
The information in this document is correct as at the date of publication but the University reserves the right to vary or withdraw any general information, any program(s) and/or fees without notice.

**Highlights**

- Several members of the Centre for Advanced Computing – Algorithms and Cryptography participate in the ARC Centre of Excellence for Quantum Computation and Communication Technology, while members of the Centre for Language Technology play a major role in the ARC Network in Human Communication Science.

- Researchers sit on the editorial boards of leading journals including *Siam Journal of Computing; Computational Linguistics; Design, Codes and Cryptography; ACM Transactions on Information and System Security; Software: Practice and Experience; Mathematics of Computation;* and *IEEE Transactions on Dependable and Secure Computing.*

**Support**

HDR candidates are provided with strong academic and administrative support. This includes:

- Annual conference at which research candidates receive feedback on their work from a panel of academics and a general audience
- Commencement and Completion programs
- Discipline-specific research training units, including workshops in research communication, presentation skills, academic writing skills, thesis planning, and poster preparation
- Financial support for research project costs, including top-up scholarships from industry
- Regular progress reports and interviews

**Research leaders**

Macquarie is home to many internationally renowned researchers, including:

**Professor Igor Shparlinski** is a Fellow of the Australian Academy of Science and holds a Medal of the Australian Mathematical Society. He has made important contributions to the mathematical foundations of cryptography, computer security and computer science through theoretic cryptography and number theory. He has obtained a number of significant new results, resolving several long-standing open problems that resisted the efforts of many distinguished researchers.

**Professor Mark Johnson** is a Fellow of the Association for Computational Linguistics. He has expertise across the field of computational linguistics, with a specific focus on parsing and its applications to text and speech processing. He is a former president of the Association for Computational Linguistics, and spent two decades as a professor at Brown University.

**Professor Vijay Varadharajan** is the Microsoft Chair in Innovation in Computing; and a member of the Australian Research Council College of Experts in Engineering, Mathematics and Informatics; and the Australian Government’s Peak Security Advisory Body, ITSEAG. His research has contributed to the development of several successful commercial security systems.