

The Department of Computing offers two research degrees: the Master of Philosophy (MPhil) and Doctor of Philosophy (PhD).

MPhil

The MPhil degree is designed to prepare students for doctoral research. It is awarded on the basis of original research detailed in a thesis. Typical applicants will have undertaken a bachelor's degree in computer science and are required to have at least an upper second class honours degree in computer science to be considered for the programme. MPhil students are expected to take two academic years to complete their degree. Acceptance into the programme is subject to the availability of a supervisor.

PhD

The Ph.D. degree in computer science is awarded on the basis of original research culminating in a dissertation. Applicants must have an MPhil or an MSc degree in computer science to be considered for the programme. Students are expected to complete the degree within three to five years. Prospective students are not assigned to pre-specified projects. They are expected to propose an area or topic of interest, and will only be accepted if an appropriate and willing supervisor is

available. Applicants should therefore prepare a statement of proposed research indicating their intended topic and research strategy.

All research students must complete the course - Research Methodologies in Computer Science, COMP6010 (CS60R). This course aims to provide students who have not previously been engaged in computer science research activity with the basic training necessary to make a smooth transition to confidently pursue their research. At the end of semester 1, each student should have a research proposal. This should:

- show an understanding of existing work in the field
- identify an area for new work
- have concrete goals and deliverables for the first year
- indicate how these goals will be achieved.



General Areas of Interest

At present, the department's research activities are in the following areas:

1. Software Engineering

The application of a systematic, disciplined, quantifiable approach to the development, operation, and maintenance of software, and the study of these approaches. The Software Engineering Research Group (SWERG) is actively involved in research in e-learning, component-based software development, software certification and security requirements engineering.

2. WAVE

The Web, Animation, Visualisation and E-learning group is engaged in research in animation and visualisation for e-learning, human-computer interaction, and computer science education.

3. Amorphous Computing and Robotics

Amorphous computing refers to computational systems that use very large numbers of identical, parallel processors each having limited computational ability and local interactions. A robot is a mechanical, intelligent agent which can perform tasks on its own, or with guidance.

4. Networks and Communications

A computer network is a collection of computers and devices interconnected by telecommunication channels that facilitate communication and allows sharing of resources and information among interconnected devices. Our research has been focused on sensor networks.

5. Knowledge Management and Data Mining

Knowledge Management comprises a range of strategies and practices used by an organisation to identify, create, represent, distribute, and enable adoption of insights and experiences. Data mining is the process of discovering new patterns from large data sets involving methods from statistics,

artificial intelligence and database management. Our work in these areas has been focused on ontologies, association rules and various studies in the local health sector.

For further information contact:

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**Department of
Computing**

**Research
Degrees**

