SWINBURNE UNIVERSITY OF TECHNOLOGY

SOFTWARE AND ELECTRICAL ENGINEERING

Swinburne's School of Software and Electrical Engineering offers courses in computer science, software engineering, telecommunications, robotics, biomedical engineering and electrical engineering.

Swinburne's emphasis on fostering innovation means that our teaching and research is always at the forefront of the latest technology.

AREAS OF RESEARCH FOCUS

- Agent-based systems
- Broadband Internet Protocol (IP) architectures
- Cloud computing and computing education
- Data science, visualisation and database systems
- Energy efficient networking
- Human Computer Interaction (HCI)
- Image recognition and visualisation
- IP network resilience and security
- Intelligent transport systems
- Internet of Things (IoT)
- Model-driven engineering and networking
- Optimisation and workflow management
- Power system stability and control
- Service virtualization
- Smart cities, smart grids and microgrids
- Software engineering, analysis and testing
- Software security
- Wireless communication
- Electric vehicles, automation and control systems

DEPARTMENTS

The **Department of Computer Science and Software Engineering** is a leading powerhouse of research activity spanning the breadth of the computer science, software engineering and computer education disciplines.
Our fields of research include cloud computing, role-orientated adaptive design, energy-management software, data management, computing education, cybersecurity and intelligent-agent technology.

The **Department of Telecommunications, Electrical, Robotics and Biomedical Engineering** provides courses in telecommunications, robotics, biomedical engineering and electrical engineering. Our research covers the latest developments shaping our world, from next-generation computers to industrial robots. Research strengths include artificial intelligence in manufacturing, automation and control systems, electric vehicles, power system stability and control and signal and image processing.

RESEARCH FACILITIES

The **Cisco Networking Laboratory** is used to train the next generation of telecommunications engineers and data networking specialists. Each student workstation can set-up, control and enable a wide range of real world networking environments, from small to extremely large and complex networks.
The **ANFF-Vic Biointerface Engineering Hub** focuses on the use of synthetic and biological components to create materials and surfaces with new properties.

Contacts

Name	Position/Expertise	Contact details
A/Prof Sebastian Ng	Chair, Department of Computer Science and Software Engineering • Software engineering education • Software testing	sng@swin.edu.au
Dr Tony Cricenti	Chair, Department of Telecommunications, Electrical, Robotics and Biomedical Engineering • Intelligent Transport Systems • Internet of Things	tcricenti@swin.edu.au
Prof Qing-Long Han	Pro Vice-Chancellor, Research Quality • Control theory and control engineering • Electric and electronic engineering	qhan@swin.edu.au
Prof Timos Sellis	Director, Swinburne Data Science Research Institute • Database systems • Data science and big data	tsellis@swin.edu.au
Prof Dimitrios Georgakopoulos	Director, Internet of Things Lab, Digital Research Innovation Capability Platform • Internet of Things (IoT) • Health monitoring • Manufacturing supply chain	dgeorgakopoulos@swin.edu.au
A/Prof Zhenwei Cao	• Automation and control systems • Signal and image processing • Intelligent control • Robotics	zcao@swin.edu.au
Prof TY Chen	• Software analysis and testing	tychen@swin.edu.au
A/Prof Phillip Branch	• BGP anomaly detection • Internet of Things	pbranch@swin.edu.au
Dr Mehran Motamed Ektesabi	• Electric drive trains • Electric vehicles	mektesabi@swin.edu.au
Prof Cishen Zhang	• Medical imaging • Control and signal processing • Power and renewable energy systems	cishenzhang@swin.edu.au
Prof Liu Chengfei	• Data format • Artificial intelligence and image processing • Information systems	cliu@swin.edu.au
A/Prof Kai Qin	• Machine learning • Intelligent data analytics • Optimisation	kqin@swin.edu.au
Prof Yang Yun	• Cloud and internet computing • Software development environments, tools and verification	yyang@swin.edu.au
Prof Zhang Cishen	• Control • Signal processing	cishenzhang@swin.edu.au
Prof Zhihong Man	• Robotics and automation • Control systems	zman@swin.edu.au
Prof Ajay Kapoor	Pro Vice-Chancellor (International Research Engagement) Dean, School of Engineering • Electric vehicle • Design for ageing population	akapoor@swin.edu.au
A/Prof Jingxin Zhang	• Power system stability and control • Smart grids and microgrids • Medical devices and diagnostics	jingxinzhang@swin.edu.au
Prof Ryszard Kowalczyk	Wipro Chair, Artificial Intelligence Director, Intelligent Software Systems Lab, Digital Research Innovation Capability Platform • Intelligent systems, artificial intelligence, collective intelligence	rkowalczyk@swin.edu.au
A/Prof Bao Quoc Vo	• Agent-based systems • Cloud computing and intelligent transport systems	bvo@swin.edu.au