

# COMPUTER SCIENCE

## CONTACT DETAILS

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Computer science is the study of how software and hardware can be combined to overcome a remarkable range of challenges. The School undertakes a wide range of research activities with highly qualified and experienced academic staff teaching at all levels and supervising a large number of Masters and PhD students.

Many of the School's higher degree graduates now hold prestigious positions in the academic, commercial and government sectors. Commercialisation of the School's research has led to the award of national and international prizes.

## Research Interests

- 3D scene reconstruction from images
- Agile software processes
- Adaptive business intelligence
- Artificial intelligence
- Automated verification of concurrent systems
- Bioinformatics
- Cluster computing
- Communication architectures for parallel machines
- Component based verification
- Computer vision
- Control and pole placement problems
- Data hiding, multimedia coding and transmission
- Distributed simulation
- Dynamic software evolution

- Evolutionary computing and genetic algorithms
- Flexible architectures in distributed shared memory systems
- Formal modelling and verification
- Garbage collection algorithms for massive object stores
- Genome indexing
- Grid resource brokers
- High performance computing
- Inverse problems in linear algebra
- Knowledge classification and reasoning
- Language systems for web-based application development
- Large-scale distributed data archives (data grids)
- Memory management of distributed and persistent systems
- Mobile agents and intelligent multi-agent systems
- Network security and privacy preserving computation
- Numerical linear algebra
- Optical networks
- Parallel and distributed systems
- Peer to peer data sharing
- Performance modelling of parallel programs
- Protocols and modelling of network quality of service
- Requirements engineering, processes and techniques
- Safe re-configuration and adaptation of software
- Sensor networks
- Software architectures that comply with application needs
- Tools for grid application development
- Video surveillance and analysis
- Visualisation of distributed systems
- Visualising program behaviour for program understanding
- Web caching and content delivery networks
- Web semantics
- Web services composition
- Wireless communication and networking.

