THE UNIVERSITY OF MELBOURNE

Melbourne School of Engineering

SPATIAL INFORMATION CAREER PATHWAYS

For more information, visit
eng.unimelb.edu.au

SPATIAL INFORMATION AT MELBOURNE

Spatial information science and spatial systems is a rapidly expanding area, comprising remote sensing from satellites, GPS, surveying, 3D computer visualisation, mapping, and all forms of data with a geographic coordinate.

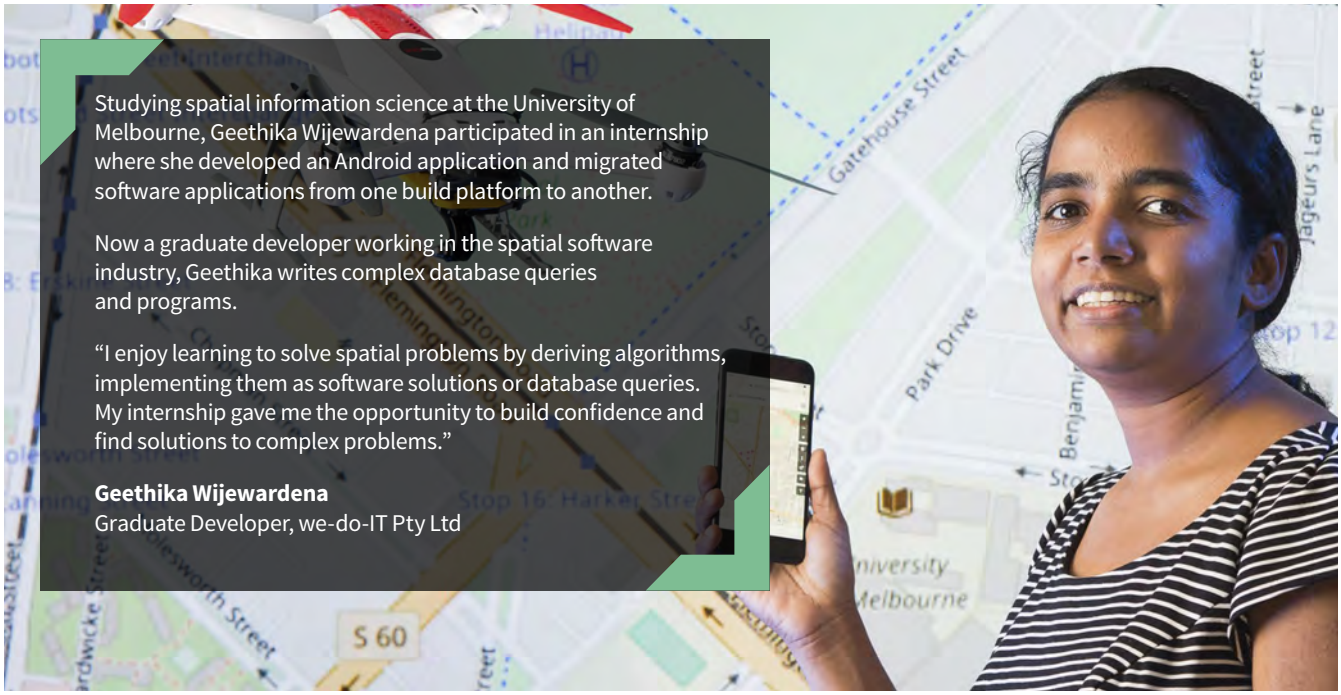
The Melbourne School of Engineering is the leading provider of engineering and IT education in Australia*.

Whether you are interested in a professional qualification, a career change, expanding your technical skills or pursuing a new interest, the Melbourne School of Engineering has a range of world class programs to meet your needs.

Our professional master of engineering program is the first in Australia to offer accreditation from Engineers Australia and EUR-ACE®^, enabling graduates to pursue international career opportunities in Europe, the US, Japan, Singapore, and more.

Programs we offer in spatial information include:

- Master of Engineering (Spatial)
- Master of Information Technology (Spatial)
- Master of Philosophy (Engineering)
- Doctor of Philosophy (Engineering)



Studying spatial information science at the University of Melbourne, Geethika Wijewardena participated in an internship where she developed an Android application and migrated software applications from one build platform to another.

Now a graduate developer working in the spatial software industry, Geethika writes complex database queries and programs.

"I enjoy learning to solve spatial problems by deriving algorithms, implementing them as software solutions or database queries. My internship gave me the opportunity to build confidence and find solutions to complex problems."

Geethika Wijewardena
Graduate Developer, we-do-IT Pty Ltd

Specialisations

A spatial information qualification enables you to work in roles relating to land surveying, environmental remote sensing, disaster management, aircraft and ground-based sensors, mapping, spatial data infrastructure and 3D visualisation.

Some examples of areas you could specialise in include:

- **Cadastral/Land Surveyor:** marks property boundaries and records the information on plans and maps. You must be licensed to do this work, as the plans you make provide the basis for legal transactions of land parcels.
- **Engineering Surveyor:** surveys routes for railways, roads, pipelines, canals, sewers and tunnels and makes detailed surveys of construction sites, dam sites, multi-storey buildings and other engineering projects.
- **Positioning:** uses signals from a multitude of sensors, among them satellites such as GPS, inertial measurement units, WiFi or other radio-based technologies, or electronic distance measurements such as SONAR or LIDAR, to locate positions accurately within a variety of environments.
- **Mining:** measures underground and open-cut mines in detail. Creates surveys to help mining organisations locate new mines safely, avoid older mines, and allow connections to be made between different underground passages. Mine surveyors also establish the boundaries of mining claims in some states and territories.
- **Remote Sensing:** uses digital data from high resolution satellites and airborne imagery systems to monitor changes in the surface features of the Earth.
- **Topography:** provides information for the compilation of maps of physical features of the Earth's surface, such as hills, valleys, rivers and lakes, by making field measurements and taking aerial photographs. They work on, above or below the surface of the land or sea, and often work with other professionals.

*Information provided by the Australian Government Job Guide 2015.

Job Outlook

Engineering professionals are in demand, not only in Australia, but across the globe. With a rapidly growing population, the need for engineers will become more critical than ever to ensure our cities have adequate transport, power, water, telecommunications and healthcare.

Students are advised to begin building their employability skills whilst at university, to give themselves the best start to their careers. Visit the University Careers Service to find out more: careers.unimelb.edu.au

For more information about the job outlook for this sector, please visit the Australian Government's Employment Projections and Job Outlook website: joboutlook.gov.au

For information about salaries, see: graduateopportunities.com

Sectors & Employers

SPATIA L INFORMATI ON SECTORS AND INDUSTRIES		EXAMPLES OF EMPLOYERS	
Aeronautics	Departments & Agencies	Defence Science and Technology	Office of the Surveyor General, Victoria
Architecture	Land and Resources	Geomatic Technologies	Reeds Consulting
Construction	Mining	Geoscience Australia	Santos
Consulting	Property	GHD	Schlumberger
Government	Transport	Intergraph Australia	Shell
	Urban Planning		Sinclair Knight Merz

Career Progression

GRADUATE	3-5 YEARS EXPERIENCE		10 YEARS
Engineering Surveyor	Cartographer	Photogrammetrist	Business Analyst – GIS Solution Design
Geodetic Surveyor	Engineering Surveyor	GIS and LBS Developer	GIS Project Manager
Geospatial Officer	Geospatial Specialist	Spatial Information Systems Officer	Senior Surveyor
Geographic Information Systems (GIS) Officer	GIS Analyst/Developer	Topographic Surveyor	Survey Project Manager
Graduate Cartographer	GIS Specialist	Underground Surveyor	Technical Lead – GIS
Graduate Geospatial Analyst	Geospatial Enterprise Engineer		
Graduate Surveyor	Hydrographic Surveyor		
	Land and Engineering Surveyor		
	Mine Surveyor		

Alternative Careers

An engineering degree at the University of Melbourne gives you a solid technical and design foundation combined with strong analytical, problem solving and communication skills valued across a range of industries. Other areas our graduates have moved into include:

- Management consulting
- Finance, economics and banking
- Business analysis
- Project management
- Technical sales, marketing and communications
- Intellectual property management
- Technical writing
- Government and policy

Careers in Research

If you are passionate about a field of electrical engineering and would like to advance your research skills, enrolling in a graduate research degree could be a great option for you. Graduate research enhances your ability to problem solve, think autonomously and creatively, and analyse. Careers in research are diverse and may include:

- academic positions at universities;
- policy-making or research positions at public sector organisations;
- private sector research and development projects;
- self-employed consulting positions on technical or policy issues in your area of expertise.

Employability Services and Industry Links

Students undertaking our programs have access to a range of employability services, and benefit from a curriculum that offers excellent opportunities to connect with industry through:

- an elective internship subject
- student projects partnered with industry
- guest lectures led by industry leaders and experts
- site visits hosted by key organisations
- industry networking events
- career panels featuring industry representatives
- career question drop-in service
- an online jobs and internships portal

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