Advice to Prospective Research Students
Surveying & Geospatial Engineering (SAGE) Group
School of Civil & Environmental Engineering

Introduction

UNSW, with its main campus located in Sydney – one of the world's most livable and attractive cities – is a leading Australian teaching and research university, with over 50,000 students, including over 13,000 international students, and more then 5,000 staff. UNSW is consistently ranked by the Times Higher Education Supplement as Australia's top Technological University, one of the world's top 50 universities in the QS rankings, first in Australia in the Shanghai Jiao Tong rankings, and top research university in the state of New South Wales. UNSW is a foundation member of the Group of Eight leading research universities in Australia, the Universitas 21 international consortium, and a member of the GlobTech alliance.

The UNSW Faculty of Engineering is the largest and most diverse of its type in Australia. It offers a wide choice of undergraduate and postgraduate programs in Civil & Environmental Engineering, Electrical Engineering & Telecommunications, Computer Science & Engineering, Mining Engineering, Biomedical Engineering, Chemical Engineering & Industrial Chemistry, Mechanical & Manufacturing Engineering, Petroleum Engineering, and Photovoltaic & Renewable Energy Engineering. The Faculty has approximately 10,000 students, almost 7,500 of which are undergraduate students.

The School of Civil & Environmental Engineering is the largest and most successful school of its kind in Australia and is a dynamic and integral part of the Faculty of Engineering, itself consistently ranks as the best in Australia. It has about 1,700 undergraduate students, 600 postgraduate coursework students, and around 200 higher degree (masters/PhD) students. The school is also home to a strong Surveying & Geospatial Engineering (SAGE) research group.

SAGE Research Topics

The SAGE research themes are:

- Satellite navigation receiver design & signal processing algorithms
- Multisensor integration systems, algorithms & applications
- Personal & indoor positioning/navigation
- Precise GNSS positioning technology & applications
- Geodetic infrastructure & analysis
- Precise surveys for deformation & construction
- Earth observation systems
- Remote sensing technologies & applications
- Lidar, mapping & geoinformation management systems

Postgraduate Study Opportunities in SAGE Research

We are looking for special people to carry out exciting research in the research themes listed above. ***Why not do a PhD or Research Masters degree with us?*** There are currently over 30 higher degree students undertaking SAGE projects.

Are you:

- Passionate about geospatial technologies (and their applications) such as GPS, geodesy, earth observation, remote sensing, mapping, Lidar, GIS?
- Prepared to work hard and make an impact as a researcher in a fast moving field?
- Have expertise in software development, electronics, mathematics, statistics or geodesy?
- Keen to work within a team, and perhaps in collaboration with outside partners?
- Articulate, ambitious, and possessing of a forward-looking and confident personality?

We are looking for postgraduate students with the appropriate qualities and skills to join our various research teams. Expertise and qualifications in any of the following are especially welcomed: civil & environmental engineering, surveying, geospatial information systems, electrical engineering or telecommunications, computer science or engineering, mechanical engineering, mathematics and physics.

There is a global shortage of graduates with higher degree qualifications in the general topic areas of geodesy, GPS/GNSS, photogrammetry and remote sensing. SAGE graduates are particularly highly sought after, and easily find postdoctoral, academic or industry placements upon graduation.

SAGE staff are world class researchers in their fields. *For example*, Professor Chris Rizos is an expert on high precision GPS for geodetic and navigation applications, and is co-director of the premier "Satellite Navigation and Positioning" Group at UNSW. He is president of the International Association of Geodesy (IAG), a member of the International GNSS Service (IGS) governing board, and co-chair of the Multi-GNSS Asia organisation. He is a Fellow of the IAG, and a Fellow of the U.S. and Australian Institutes of Navigation.

There are two steps for prospective research students: (1) enrol in the Research Masters or PhD program, and (2) apply for scholarship support (if student is not self-funded). *More details provided on the following page*.

The SAGE PhD program code is 1681, online handbook details here.

The SAGE Research Masters program code is 2721, online handbook details here.

We encourage you to contact one of the SAGE staff (below) prior to applying for enrolment.

Application Procedure

The full procedure is outlined on this web page. Additional information can be found on the School's webpage. You can also seek advice from the UNSW Graduate Research School. When you have completed the application process, and your qualifications and associated documentation have been assessed, you will be made an offer for the program of your choice (ours is a calendar year system, with two dates of entry: March or August). Note that your qualifications will be assessed to ensure your undergraduate degree (and, if relevant, your Masters by coursework degree) is of a suitably high standard. (Advice in this regard may be sought from the School of Civil & Environmental Engineering postgraduate coordinator.)

The research topic area need only be defined in very broad terms. To assist in the application process you will need to provide evidence of contact with a *prospective* supervisor. You are advised to email a staff member from the SAGE research group:

- Professor Chris Rizos: GPS/GNSS, geodesy, navigation topics
- Associate Professor Samsung Lim: Lidar, mapping, GIS topics
- Associate Professor Jinling Wang: GPS/GNSS, multisensor systems, navigation topics
- Associate Professor Linlin Ge: remote sensing, earth observations, InSAR topics
- Dr Craig Roberts: GPS/GNSS, precise positioning, geodetic datum topics
- Dr Bruce Harvey: precise surveying, deformation topics

Scholarship Support

There are a range of scholarships available from the Australian Government, UNSW, the Faculty of Engineering, as well as research groups with current research grants. The scholarships fall into two categories:

- General Postgraduate Research Scholarships for Local Students
- General Postgraduate Research Scholarships for International Students

If you are a **Local Student** – an Australian citizen or holder of a Permanent Resident visa – the scholarships for which you will apply are the Australian Postgraduate Award (APA) or University Postgraduate Award (UPA). Awards are made on the basis of the quality of your undergraduate qualification – check your eligibility. You may also be eligible for a faculty top-up scholarship valued at $30,000 or more per annum.

If you are an **International Student** the most common scholarships are:

- International Postgraduate Research Scholarship (IPRS)
- University International Postgraduate Award (UIPA)
- Tuition Fee Scholarship (TFS) plus a Research Stipend

There may also be funding support from other sources, such as home country or Australian aid scholarships. Chinese students should in particular note the China Scholarship Council (CSC) scheme, which has a special procedure. Note that there are English Language Requirements.

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