

Development of broadband electronic warfare sensors for signal detection and direction finding

Up for a challenge?

Join us to work on an industry-led research project with SRC Aus.

Who can apply?

- Australian & New Zealand Citizens

Industry partner and funding body

- [SRC Aus Pty. Ltd.](#)
- [Defence Trailblazer](#)

Program of study available

- Doctor of Philosophy (PhD) with the University of Adelaide

Total annual stipend amount

- \$50,000 p.a. for four years

Start date

- Plan for a start no later than 31/12/2023

About the project

In military terms, electronic support (ES) is the branch of electronic warfare (EW) related to the collection and analysis of electromagnetic signals in the environment to identify and inform decision makers/users for situational awareness.

The aim of this project is to develop a novel airborne ES sensor capable of operating in a complex congested Radio Frequency (RF) environment. The sensor will consist of a broadband antenna array, RF front end and digital backend. The candidate(s) will develop novel antenna designs with Direction Finding (DF) functionality, integrating the designs to build a complete sensor device. They will also be exposed to cutting edge algorithms for emitter DF, and signal parameterisation and characterisation.

Eligibility criteria

- Applicants with strong experimental and numerical skills in antennas, RF circuit designs, and signal processing will be considered favourably
- Excellent students who hold an Honours degree or equivalent in Electrical Engineering, Computer Science, IT, Software Engineering, Telecommunications, or Mathematics would be especially suitable and encouraged to apply
- Applicants with well-developed written and verbal communication skills will be considered favourably
- Be willing to provide your personal details by way of a Student Deed Poll.

Benefits

- Work closely with experts on defence industry led projects
- Translate research into a tangible solution
- \$50,000 p.a. tax-free* stipend (pro-rated for eligible part-time students)
- No tuition fees apply
- Acquire a unique set of skills and expertise
- Enhance your employability skills sought after by industry; graduates are highly regarded by employers
- Opportunities for local and international travel
- Work alongside world-leading researchers
- Gain industry experience and grow your networks
- Solve real life problems through industry engaged projects
- Publish your contributions
- Become an expert and make a real impact
- Access paid annual, parental and personal leave.

* Conditions apply

How to apply

- Complete an [expression of interest](#)
- The primary supervisor will assess your eligibility, and if successful, will prompt your application for admission via the University of Adelaide.

More about Defence Trailblazer

The Defence Trailblazer for Concept to Sovereign Capability is a once in a generation opportunity to strengthen the collaboration between defence, academia and industry whilst accelerating research and commercialisation.

In partnership with the University of Adelaide (UoA), the University of New South Wales (UNSW), industry partners and supported by the Australian Government, the initiative will skill the workforce of the future, support defence-focussed innovation, and play a leading role in accelerating the delivery of sovereign capabilities for the nation's security and prosperity...at-speed and at-scale.

Learn more: <https://dtb.solutions/>

Industry Research Program

All students supported under the Defence Trailblazer initiative will participate in the Defence Trailblazer Industry Research Program (IRP).

Candidates will be located on-site at both university and industry offices for at least 60 FTE days (pro-rated for eligible Masters candidates), to enable professional development opportunities in an industry setting.

Defence Research Capability

Academics participating in the Defence Trailblazer IRP are leaders in their fields.

UNSW adds a critical dimension to preparing defence forces across areas as diverse as Autonomous Systems, Hypersonics, Sensors and Space. The UNSW Defence Capability Portfolio showcases UNSW's excellence in defence research and technology and highlights work across academia, government and industry, as well as with global policy makers, to create a hub of defence-related knowledge. The vision is to translate this knowledge into impact which can transform Australian and global societies.

There's no greater reassurance for our community than knowing we're well prepared to prevent or avert threats to our security. UoA researchers support this in very domain: on land and online; in space, the air and at sea, working extensively with the [Department of Defence](#) and defence-related organisations in a variety of ways—as an advisor, research partner and producer of high-quality, career-ready graduates equipped to make our world a better and more secure place.

[Find out more](#) about defence research at the University of Adelaide.

Further information

For a confidential discussion contact:

Associate Professor Brian Ng
School of Electrical and Mechanical Engineering
The University of Adelaide

E: brian.ng@adelaide.edu.au

T: 08 8313 5054

Defence Trailblazer, together with UoA and UNSW, are actively working to support equity groups. We strongly encourage applications from people with a disability, veterans and women interested in working in non-traditional work settings
University of Adelaide CRICOS Number 00123M

