



College/Division:	ANU College of Engineering and Computer Science
Faculty/School/Centre:	School of Computing
Position Title:	Postdoctoral / Research Fellow
Classification:	Academic Level A/B
Position No:	
Responsible to:	Assoc Prof Hanna Kurniawati

PURPOSE STATEMENT:

The ANU College of Engineering and Computer Science (CECS) has embarked on a major initiative to reimagine the role of engineering and computing in the 21st century. As outlined in the CECS Strategic Intent the College has a unique set of national responsibilities and an obligation to have a degree of impact befitting Australia's only national university.

To achieve such impact our College embodies principles and values to guide the pursuit of excellence in education; research, engagement and impact; and collegiality. These principles include collaborative teamwork, common strategic intent, nurturing peer and junior staff members, and acting with purpose and professionalism. These attributes are articulated in the CECS Academic Performance Standards, which also indicate that each individual may pursue a unique path on the basis of their impact—which may cover a range of outputs and impact indicators. Our community contribute to making our environment the very best possible venue for all staff, stakeholder and student bodies.

KEY ACCOUNTABILITY AREAS

The ANU College of Engineering and Computer Science is an interdisciplinary venture, with the aim of housing the very best and brightest from around the world to find and solve problems—not just engineers or computer scientists, but also the brightest minds both from industry and other academic disciplines, with varied backgrounds and areas of expertise. We will reimagine the traditional engineering and computing disciplines. We believe the responsibility of engineering and computing in the 21st century is to bring together expertise on people, technological systems, and science to put technology at the service of creating a more sustainable, responsible and safe world.

The School of Computing is a new organisation, springing from foundations in the computing and information sciences at the ANU. It is a leading centre for research in artificial intelligence and machine learning, computer systems and software, and theoretical foundations of computing. It encompasses traditional computer science but also data science and computational science, addressing the critical need to design, drive and sustain a fundamental program of strategic activities that will launch the new school. This is an opportunity to establish an innovative and forward-looking intellectual agenda, built on a diverse, inclusive culture.

The School of Computing has four broad focus areas, or activity clusters: Intelligent Systems, Data Science/Analytics, Secure Software & Systems, and Computational Science. Each cluster will have an Academic Lead who is responsible for shaping the education, research and engagement activities in their cluster. This structure will allow for the concentration of resources and activities to increase potential for meaningful impact.

The purpose of this appointment is to undertake foundational research on robust robot planning and learning in partially observed and adversarial scenarios.

POSITION DIMENSION AND RELATIONSHIPS:

The Research Fellow will be a member of the School of Computing within the Intelligence activity clusters, accountable to the lead Chief Investigator, Dr Kurniawati, Activity Cluster Lead and to the School Director, and (as relevant) will be responsible for relationships with industry, government and other academic and professional staff across the University.

Specifically, the appointee will join the School of Computing's Robust Decision-Making and Learning (RDL) group, which is part of the Intelligence Activity Cluster of the School. The RDL is a close-knit research team, specialising on planning and learning in robotics, with multiple research collaborations across discipline and industry, such as with the ANU Humanising Machine Intelligence, the Australian Defence Science and Technology, and several established industries. This setting allows us to focus on fundamental research, while leveraging our collaborators' expertise and domain knowledge of real-world problems.

The Research Fellow will collaborate with Dr Kurniawati in developing novel approaches for robot planning and learning in partially observed and adversarial scenarios. The appointee will liaise with relevant professional and academics staff members within the School of Computing and the ANU, as well as establishing and maintaining relationships with the wider research community and collaborators.

Role Statement:

Level A

Specific role of a Level A Postdoctoral Fellow may include

1. Undertake research in the area of planning under uncertainty and robotics, independently and as part of a team, with a view to publishing original and innovative results in refereed conferences and journals, present research at academic seminars and at national and international conferences, and collaborate with other researchers at a national and/or international level. This may include working on an externally funded project subject to deadlines and being primarily responsible for project delivery in some areas.
2. Support the teaching activities of the School at the undergraduate and graduate levels. This includes, but is not limited to, supporting the preparation and delivery of lectures and tutorials, the preparation of online material, marking and assessment, consultations with students, acting as subject coordinators and the initiation and development of course/subject material.
3. Assist supervising at a varying levels, working on individual or group projects.
4. Contribute to the operation of the School.
5. Assist in outreach activities.
6. Maintain high academic standards in all endeavours.
7. Take responsibility for their own workplace health and safety and not willfully place at risk the health and safety of another person in the workplace.
8. A demonstrated understanding of equal opportunity principles and policies and a commitment to their application in a university context.
9. Other duties as required consistent with the classification level of the position.

Level B

Specific role of a Level B Research Fellow may include

1. Undertake research in the area of planning under uncertainty and robotics, independently and as part of a team, with a view to publishing original and innovative results in refereed conferences and journals, present research at academic seminars and at national and international conferences, and collaborate with other researchers at a national and/or international level. This may include working on an externally funded project subject to deadlines and being primarily responsible for project delivery in some areas.
2. Help the preparation and submission of research proposals to external funding bodies.
3. Contribute, at a reduced intensity relative to a standard faculty appointment, to the teaching activities of the School at the undergraduate and graduate levels. This includes, but is not limited to, the preparation and delivery of lectures and tutorials, the preparation of online material, marking and assessment, consultations with students, acting as subject coordinators and the initiation and development of course/subject material.
4. Supervise students working on individual or group projects at undergraduate, honours, graduate- coursework levels. Assist with supervision of research students.
5. Contribute to the operation of the School.
6. Assist in outreach activities.
7. Maintain high academic standards in all endeavours.
8. Take responsibility for their own workplace health and safety and not willfully place at risk the health and safety of another person in the workplace.
9. A demonstrated understanding of equal opportunity principles and policies and a commitment to their application in a university context.
10. Other duties as required consistent with the classification level of the position.

SELECTION CRITERIA:

Level A

1. A PhD or close to completing a PhD in Computer Science, Robotics, Artificial Intelligence, Mathematics, Aerospace Engineering, Electrical Engineering, or a related area, with a track record of high-quality research in one or more of the following areas: Planning under uncertainty, Motion planning under uncertainty, Multi-robot planning under uncertainty, Reinforcement Learning, Markov Decision Processes, Partially Observable Markov Decision Processes, Algorithmic Game Theory, or Robust Control, as evidenced by publications in peer-reviewed conferences and journals, and by other measures such as awards.
2. Experience in applying one of the above research areas to physical robot is a plus.
3. Evidence of the ability to articulate and execute innovative research in AI/ML/robotics.

4. High proficiency in computational techniques and programming.
5. Ability to work effectively, both independently and as part of a team, meeting deadlines for project elements.
6. Excellent oral and written English language skills to interact effectively with a variety of collaborators and to foster respectful and productive working relationships with staff, students and colleagues at all levels.
7. Potential and interest in teaching at all levels and in contributing to the delivery of the educational agenda.
8. Commitment to upholding the University's values and outstanding personal qualities of openness, respectfulness, and integrity, including a demonstrated understanding of equal opportunity principles and policies and a commitment to their application in a university context.

Level B

1. A PhD or close to completing a PhD in Computer Science, Robotics, Artificial Intelligence, Mathematics, Aerospace Engineering, Electrical Engineering, or a related area, with a track record of high-quality research in one or more of the following areas: Planning under uncertainty, Motion planning under uncertainty, Multi-robot planning under uncertainty, Reinforcement Learning, Markov Decision Processes, Partially Observable Markov Decision Processes, Algorithmic Game Theory, or Robust Control, as evidenced by publications in peer-reviewed conferences and journals, and by other measures such as awards.
2. Experience in applying one of the above research areas to physical robot is a plus.
3. Evidence of the ability to articulate and execute innovative research in AI/ML/robotics.
4. High proficiency in computational techniques and programming.
5. Ability to work effectively, both independently and as part of a team, contributing to team management and meeting deadlines for project elements.
6. Excellent oral and written English language skills and a demonstrated ability to communicate and interact effectively with a variety of collaborators and to foster respectful and productive working relationships with staff, students and colleagues at all levels.
7. Ability and willingness to teach at all levels, though with reduced intensity relative to standard academic appointment.
8. The ability to assist in supervising PhD / Master research students
9. Commitment to upholding the University's values and outstanding personal qualities of openness, respectfulness, and integrity, including a demonstrated understanding of equal opportunity principles and policies and a commitment to their application in a university context.

References:

[Academic Minimum Standards](#)