College/Division:	ANU College of Engineering and Computer Science
Faculty/School/Centre:	School of Computing
Position Title:	Research Fellow
Classification:	Academic Level B
Position No:	
Responsible to:	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.

The ANU is seeking a Postdoctoral Research Fellow to join the Humanising Machine Intelligence (HMI) project. The project aims to identify where machine intelligence can be maximally socially beneficial, remove the foundational obstacles in the way of developing moral AI, and design algorithmic autonomous decision-making systems that reliably make morally defensible choices.

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.

POSITION DIMENSION AND RELATIONSHIPS:

The Research Fellow will be a member of the School of Computing within the Intelligence activity cluster, and part of the HMI project.

The HMI is a major cross-disciplinary project at the ANU, uniting a team of computer scientists, philosophers, and social scientists in the pursuit of a more ethical future of machine intelligence. We share a common expertise in probabilistic decision-making, though coming from different perspectives. Such a multi-disciplinary background provides a holistic view of automated decision-making that the team, including the to be appointed Research Fellow, can leverage.

The Research Fellow position will be based at the ANU's School of Computing and collaborate closely with team members within and across discipline to make substantial progress towards robust, ethical, and strategic decision-making agents. The School of Computing is a community of high performing academic and professional staff, students and visitors sharing a deep commitment to transforming the future of computing for the next generation. It is a leading centre for research in artificial intelligence and machine learning, computer systems and software, and theoretical foundations of computing.

The Research Fellow position will have a specific focus on the design and development of robust and strategically compassionate decision-making agents, with robotics applications.

Role Statement:

In their role as ANU academic level B in the School of Computing, the appointee will be expected to:

1. Undertake research in the area of the HMI project, 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.
2. Seek and secure external funding including 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:

1. A PhD or close to completing a PhD in Computer Science, Artificial Intelligence, Robotics, or allied discipline relevant to the HMI project (economics, engineering, mathematics, philosophy, political science, statistics, sociology) with a track record of independent research in one or more of the following fields: Automated planning, including motion planning and multi-agent planning, robotics, machine learning, algorithmic game theory, or robust control, as evidenced by publications in peer-reviewed conferences and journals, a record of developing and maintaining collaborations, and other indicators of peer recognitions, such as awards.
2. Evidence of the ability to articulate and execute innovative research in ethical AI/ML/robotics, or closely related topic relevant to the HMI project.
3. High proficiency in computational techniques and programming.
4. Demonstrated ability to work cooperatively and harmoniously in a team, with the capacity to engage in cross-disciplinary research and build a research community.
5. An ability and commitment to assist bids for competitive external funding to support individual and collaborative research activities.
6. Ability and willingness to teach at all levels, though with reduced intensity relative to standard academic appointment.
7. The ability to assist in supervising PhD / Master research students
8. Excellent oral and written English language skills and a demonstrated ability to communicate and interact effectively with a variety of staff and students in a cross-disciplinary academic environment and to foster respectful and productive working relationships with staff, students and colleagues at all levels.
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](#) |