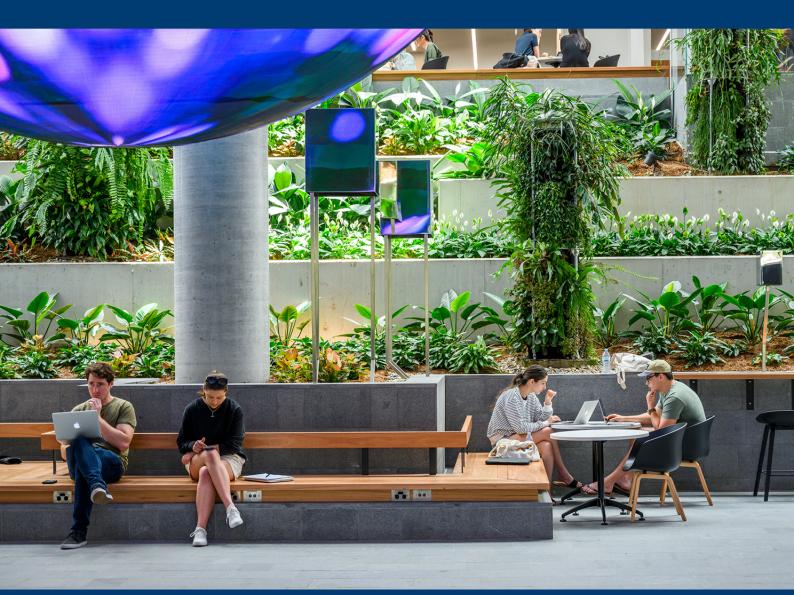# QUT

Postdoctoral Research Fellow – Australian Robotics Centre

FACULTY OF CREATIVE INDUSTRIES, EDUCATION AND SOCIAL JUSTICE

ACADEMIC DIVISION

About the Position

The ARC Training Centre for Collaborative Robotics in Advanced Manufacturing has an exciting opportunity for a Postdoctoral Research Fellow to play a key role in our Human-Robot-Interaction Program.

The position will contribute to strengthening existing partnerships with external stakeholders and help develop new and ongoing partnerships.

In conventional Human Robot Collaboration (HRC), safety has been paramount and humans are trained to simply use the robot as a tool. To increase the scope of genuine collaboration, operators need to interact safely with an industrial robot across the whole production cycle, with minimal need for training. Novel interaction approaches using multi-sensory interfaces, gesture control devices and augmented reality can reduce training costs, enable rapid prototyping, and make robots safer and easy to use in production tasks. This Program addresses how humans are made aware of the movement and intentions of robotic systems (mutual awareness & robotic intention visualisation), how to build toolkits for the rapid prototyping of collaborative robotic solutions, and how to leverage multimodal interaction, including Augmented Reality and Virtual Reality, with robotic systems. The Program will be based on an in-depth understanding of collaborative work routines and the task domain. It will develop domain appropriate HRC solutions and build skills and capacity for industry to adopt the Program's outcomes.

The Research Fellow will also assist with the supervision of postgraduate students and will be an active member of the research community within the university and across the centre's network.

The centre is focused on collaboration and knowledge sharing between industry and research partners. This role may include considerable periods working directly at our partner organisations, including Cook Medical, LA Services, and Weld Australia and at our university partner sites, which will involve travel outside of Brisbane and interstate.

The centre offers a training program which has an emphasis on professional development as well as technical skills. The program includes opportunities to build your knowledge, skills, experience, and professional standards

through on-the-job tasks, social learning and formal training opportunities.

The position is supported by the Australian Research Council's Industrial Transformation Training Centre program which has been funded for up to 5 years.

This position reports to the Program Leader for supervision, workload management and for Performance Planning and Review (PPR).

Key responsibilities include:

- Conducting high-quality research relevant to the research program as part of project teams to meet goals timelines and deliverables.
- Participating and contributing to ethical, high-quality, and innovative research through activities such as quality publications, industry and end-user presentations, or conference presentations.
- Actively participating in strategic planning for Human-Robot Interaction research and development.
- Maintaining complete and accurate research records, including written and verbal reports, documenting details of IP, ethics approvals, publications, media mentions, and other key program metrics as required.
- With support from the Program Leader, developing and maintaining strategic relationships and networks with a wide range of stakeholders including industry partners, partner institutions and internal QUT partners based in other faculties.
- Liaising with collaborators and stakeholders; and generating, finalising and editing research reports, progress reports and project reports for collaborators.
- Leading and participating in high-performing multidisciplinary teams and assisting with the supervision of research students both undergraduate and postgraduate.
- Partaking in and encouraging HDRs to take part in the centre's professional development program.
- Reading academic papers, journals and textbooks to keep abreast of developments in own specialism and related disciplines.
- Implementing and administering University policy within the Faculty with respect to equitable access to education and workplace health and safety.

To ensure job flexibility the successful appointee may be required to:
- perform any other duties as nominated by the University consistent with the relevant classification descriptors detailed in the Enterprise Agreement. Staff undertaking any new duties will receive training;
- participate in job rotation or multiskilling in consultation with their supervisor;
- work across campuses and partner organisations.

Type of appointment

This appointment will be offered on a fixed-term, full-time basis for three (3) years.

The centre is open to flexible working arrangements including job-share and part time working.

Location

Gardens Point campus.

Selection Criteria

1. Completion or near-completion of a doctoral qualification in related field with proven knowledge of research techniques and methodologies in a key field of research with experience with Interaction Design, Human-Computer Interaction (HCI) and/or Human-Robot Interaction (HRI).
2. Demonstrated experience in developing and/or using qualitative and hybrid research methods, and design research methods in a relevant research context.
3. Ability to lead or contribute to research projects including identifying and tracking milestones, reporting on progress and identifying barriers to completion.
4. Demonstrated capacity to work collaboratively and proactively as part of a multi-disciplinary and multi-institution research team, as well as proven ability to work effectively with minimal supervision.
5. Demonstrated written communication skills for scholarly publications, technical reports and project documentation with a track record or capacity to publish in high quality journals.
6. Oral communication skills with a demonstrated ability to present research findings to a variety of audiences.
7. Demonstrated interpersonal skills including the ability to build relationships, influence, lead, manage conflict and communicate

effectively with colleagues at all levels.

Remuneration and Benefits

The classification for this position is Academic Level B (LEVB) which has an annual remuneration range of $117,480 to $139,522 pa. Which is inclusive of an annual salary range of $99,272 to $117,898 pa and 17% superannuation.

In July 2020 QUT staff voted in favour of a variation to its Enterprise Agreements. The variations were approved by the Fair Work Commission in August 2020.

The variation impacts leave loading (for new staff no loading will be paid or accrued during the period the variation is in effect), salary increases (the salary increase which was due to occur in the first full pay period of December 2020 was deferred until the first full pay period of December 2021, however it has been brought forward by the Vice-Chancellor to be paid in June 2021) and superannuation (superannuation will be paid to staff as though the salary increase which would have been paid in December 2020 has taken effect and, subject to the rules of the superannuation fund, a defined benefit member will continue to make contributions in alignment with the contributions made by the University). A link to the variation is here.

Beyond personal and professional fulfilment, a career at QUT brings a broad range of tangible benefits. With competitive remuneration including superannuation, the University offers real and generous benefits.

QUT is a high quality and flexible organisation that is proud of its excellent employment conditions which include but are not limited to:

- Reduced working year scheme
- Parental leave provisions
- Study support encompassing leave and financial assistance
- Comprehensive professional development
- Salary Packaging

Further benefits can be found at the Life at QUT page.

Information for applicants

Applicants who have unrestricted work rights in Australia for the duration of the fixed-term appointment. In support of our strategic priority of Indigenous Australian success, Aboriginal

Australians and Torres Strait Islander people are encouraged to apply.

For further information about the position, please contact Associate Professor Markus Rittenbruch, on (07) 3138 8355; or for further information about working at QUT contact Human Resources on +61 7 3138 5000.

Candidates who are interested in the position are encouraged to apply even though they may feel they are not strong on individual selection criteria.

In assessing merit, the panel will take into consideration "performance or achievement relative to opportunity". We recognise that many staff today have a range of personal circumstances, and career histories that challenge traditional ideas of an academic staff member. This may mean, for example, prioritising the quality of achievement rather than the quantity, as considerations of part-time employment, career interruptions and significant periods of leave are taken into account when assessing performance or achievement.

The selection panel is also committed to conducting a process which is fair and free from bias, including unconscious bias.

How to Apply

For further information and to apply, please visit www.qut.edu.au/careers for reference number **21998**.

When applying for this position your application must include the following:

- A current resume
- Cover Letter (max. 1 page)
- Response to the selection Criteria (max. 2 pages)

Applications close 4 October 2021

About QUT

QUT is a major Australian university with a global outlook and a 'real world' focus. We are one of the nation's fastest growing research universities and our courses are in high demand.

We are an ambitious and collaborative institution that seeks to equip our students and graduates with the skills they will need in an increasingly disrupted and challenged world.

We are transforming the student experience we offer our 50,000 students and we place a premium on the international and national accreditation of our various professional degrees.

We offer academic programs in fields spanning business, creative industries, education, engineering, health, law, science, and social justice across five faculties.

We are transforming the learning experience and embed work integrated learning in courses and have a strong focus on developing entrepreneurial skills. QUT provides executive education and professional development to both individuals and organisations through QUTeX, and QUT Online lets students learn when it suits, through courses delivered entirely online. QUT College offers pathways for all students into our undergraduate programs.

QUT has two inner-city campuses in Brisbane at Gardens Point and Kelvin Grove.
Well known for our strong links to industry and government, the high impact of our research which involves multidisciplinary teams, QUT has been named one of the fastest rising universities in the world for scientific research.

Further information about QUT can be obtained from the website at www.qut.edu.au.

Our Vision

QUT's Blueprint 6 is our institutional strategic plan. The Blueprint formalises QUT's ambitions and declares our strong sense of purpose which is to provide transformative education and research relevant to our communities. It provides a framework and strategies to enable QUT to realise our vision to be the university for the real world and identifies the following priorities:

- support aspiration and inclusion
- encourage creativity and entrepreneurship
- embrace digital transformation and technology
- embed principles of health and wellbeing
- support Indigenous Australian engagement, success and empowerment
- enable professional engagement and ethical leadership and,
- focus on the environment and sustainability

Aligned to and supporting our vision are the QUT Values. These Values highlight what makes QUT distinct and successful. Providing a compass for our decisions, actions and behaviours and strengthening our community.

QUT Values

- Ambition
- Curiosity
- Innovation
- Integrity
- Inclusiveness

About the Academic Division

Academic Division includes the University's faculties and research centres. It is responsible for education (learning and teaching), research, research services and support, and digital business solutions. The Academic Division is led by the Provost.

About the Faculty

In our rapidly changing world, driving economic, social and cultural development increasingly requires collaboration. This new faculty acknowledges this context— and specifically that how society learns, creates, communicates and collaborates is at the forefront of all innovative and impactful contributions.

The focus of the Faculty of Creative Industries, Education and Social Justice will be to pursue research with impact and prepare our students for innovative roles as knowledge leaders at the nexus of design, education, communication, creative practice and social change.

With an intersection of creativity, education and social justice combined with QUT's overall focus on technology the faculty has strong ties to government and industry which provides our courses with a real- world focus.

The faculty is comprised of the following schools:

- School of Communication
- School of Creative Practice
- School of Design
- School of Early Childhood and Inclusive Education
- School of Teacher Education and Leadership

- School of Justice.

The Faculty of Creative Industries, Education and Social Justice is led by the Executive Dean and the Executive Management Team comprising the dean, heads of schools, and other senior faculty staff.

As the benefits of innovative creativity are recognised by multinational businesses, creative talents are increasingly in demand in a range of industries.

A world leader across communication, design and creative practice teaching and research, with extensive industry partnerships and a proven track record in growing the creative economy, our connections to industry and the leading-edge research we conduct strengthen our understanding that creativity has never been more valued by employers.

QUT is also a national leader in teacher education and in many areas of education research. We are a recognised leader in research and research training as evidenced by our 'above world standard' ranking overall in every Excellence in Research Australia assessment. We also have extensive links with partner organisations and universities in Australia and overseas.

Reflecting our vision for excellence in learning, teaching and research, the university has built a new $95 million Education Precinct on its Kelvin Grove campus. The precinct comprises imaginatively designed formal and informal face-to-face and online learning and teaching spaces, and offers excellent facilities for social interaction and recreation. The precinct's futuristic design and its location at the heart of the Kelvin Grove campus showcases education, gives it prominence, and demonstrates QUT's vision for the faculty as a leader, innovator, and model for the university.

About the School of Design

Design improves the quality of work and life, brings social and economic advantages to industry and community, and is central to the development of fulfilling citizenship and social innovation. Our students and researchers are part of a sustainability-focused, multidisciplinary school with close connections

to the design profession.

Our courses explore new digital technologies within well-equipped workshops and studios that offer a unique hands-on university experience.

Our study areas include:
- fashion
- industrial design
- interaction design
- visual communication

In 2019 a new curriculum commenced in the School that has seen the new Visual Communication course launched alongside the introduction of a number of cross faculty double degrees.

The new courses provide students with enhanced studio experiences through the introduction of a series of cross disciplinary Impact Labs at all year levels. Students participate in problem-based, collaborative approaches to learning aligned to real world experiences and contexts. Individuals wishing to further their skills and knowledge through postgraduate study can undertake practice-led or traditional research programs that are internationally renowned for their innovative, creative, and commercial contributions to Creative Industries and broader industry fields.

The School has established international connections including teaching and research partnerships with leading institutions and organisations including China, New Guinea, Denmark Indonesia, South Africa, South America, United Kingdom, and the United States.

About the Centre

The ARC funded Industrial Transformation Training Centres scheme fosters close partnerships between university-based researchers and other research end-users to provide innovative Higher Degree by Research (HDR) and postdoctoral training, for end-user focused research industries that are vital to Australia's future.

The ARC ITTC for Collaborative Robotics in Advanced Manufacturing is a collaboration between QUT, University of Technology Sydney (UTS) and Swinburne University of Technology and is headquartered in QUT. Although hosted within the QUT Faculty of Engineering, the transdisciplinary nature of our

research means that our researchers are drawn from different faculties and disciplines across all university partners.

The Centre for Collaborative Robotics in Advanced Manufacturing will achieve wins for Australian businesses and the economy by developing our capability for new forms of human-robot interaction in manufacturing environments. This will benefit Australian companies, especially small businesses (who will win on process innovation and lower costs), manufacturing workers (whose jobs will become safer and higher-skilled), and the economy (through the growth of jobs and exports). The Centre will achieve this by training the next generation of manufacturing leaders, researchers, and technicians with collaborative robotics expertise to make Australian manufacturing safer, more efficient and globally competitive. We will enhance this capability by researching and sharing with industry new knowledge to improve skills, workforce diversity and readiness to power Australian manufacturing with the digitally-capable workforce of the future.