



Position Description – Research Fellow

Position Details

Position Title: Research Fellow

College/Portfolio: STEM **School/Group:** Physics

Campus Location: Primarily based at Melbourne CBD campus, and the potential to work across other RMIT campuses as required.

Classification: Academic Level A or B

Time Fraction: 1.0

Employment Type: Fixed Term

Fixed Term Reason: Research

Reporting Line: Zixin Huang

RMIT University

RMIT is a global university of technology, design and enterprise, committed to creating transformative experiences for students and making a meaningful impact through research, innovation, and engagement. For more information on RMIT University follow the links below.

<https://www.rmit.edu.au/about>

<https://www.universitiesaustralia.edu.au/university/rmit-university/>

<https://www.rmit.edu.au/about/facts-figures>

Our campuses in Melbourne (City, Brunswick, Bundoora, and Point Cook) are complemented by international campuses in Vietnam and a centre in Barcelona, Spain. We proudly acknowledge the Woi Wurrung and Boon Wurrung peoples of the eastern Kulin Nation on whose unceded lands our campuses are located.

We are deeply committed to reconciliation and Indigenous self-determination, embedding these values throughout our policies, culture and structures.

<https://www.rmit.edu.au/about/our-locations-and-facilities>

Why Join RMIT?

Our people are at the heart of everything we do. At RMIT, we value innovation, collaboration and impact. Our values are the heart (durrung) of who we are and what we stand for at RMIT. They guide what we do, how we make decisions, and how we treat each other.



Inclusion Imagination Integrity Courage Passion Impact

Learn more about our values: <https://www.rmit.edu.au/about/our-strategy/values>

Organisational Accountabilities

RMIT is committed to the safety, wellbeing and inclusion of all staff and students. As a staff member, you are expected to comply with all relevant legislation and RMIT policies, including those related to: Equal opportunity, Occupational health and safety, Privacy and trade practices & Child safety standards:

Appointees are responsible for completing all required training and ensuring that they and their team members remain up to date on relevant compliance obligations.

Staff are expected to understand and support RMIT's child safe practices as part of their professional responsibilities. More about our child safety commitment: <https://www.rmit.edu.au/about/our-locations-and-facilities/facilities/safety-security/child-safety>.

Leadership at RMIT

At RMIT, leadership is not defined by position or hierarchy—it is a shared responsibility demonstrated by all staff, regardless of role or title. Leadership is grounded in our six core values, which guide and shape how we work together, make decisions, and create impact.

Effective leadership means consistently integrating these values into everyday actions and interactions, whether influencing a project outcome, supporting a colleague, or leading a team. All staff are expected to embody the principles of the *Be–Know–Do* Leadership Model:

Be – We are open and authentic, inclusive and empowering. We are purpose driven role models and communicators.

Know – We are self-aware, and understand our stakeholders, our sector and priorities.

Do – We set clear direction and expectations, we develop ourselves and others and promote mutual accountability to deliver results.

At every level, leadership at RMIT is about influence, contribution, and mindset. It is reflected in how we empower others, foster collaboration, and drive positive change through capability-building and alignment to strategic goals.

The STEM College

The STEM College holds a leading position and expertise in the science, technology, engineering, mathematics and health (STEM) fields. We are uniquely positioned to influence and partner with industry, as never before.

STEM College is a community of exceptional STEM researchers, teachers, inventors, designers and game-changers, supported by talented professional staff. We offer higher education programs across all STEM disciplines at the Bachelor, Master and PhD levels, and ensure our students experience an education that is work-aligned and life-changing.

The College is renowned for its exemplary research in many STEM areas including advanced manufacturing and design; computing technologies; health innovation and translational medicine; nano materials and devices; and sustainable systems. Our brilliant researchers attract funding from government and industry sources.

Industry is at the heart of what we do. It ensures our research has real world impact, and our students are truly work-ready. Under the leadership of DVC STEM College & Vice President, Digital Innovation, we have established new hubs of industry-connected digital innovation and endeavour and are engaging with global STEM organisations at scale.

Our diversity and shared values empower our work, and we are proud of the College's inclusive, caring culture. We offer a safe, dynamic work environment, and support every member of our community to achieve their potential. The College appointed Victoria's first ever Dean of STEM, Diversity & Inclusion in 2020, and this role drives gender equity, diversity and inclusion strategies across the College.

STEM College employs 1,000 staff who deliver onshore and offshore programs to approximately 20,000 students.

We are here to positively impact the world and create the next generation of STEM leaders.

www.rmit.edu.au/seh

Position Summary

We are seeking a Postdoctoral Research Associate at Academic Level B to contribute to the ARC Discovery Project **"Can quantum computers solve sensing problems?"**, in collaboration with Cornell University.

The project brings together quantum sensing and quantum computing to investigate which sensing problems can be solved efficiently using classical or quantum computational methods, and to develop new approaches for integrating quantum sensors with quantum processors.

The successful candidate will undertake independent research in quantum complexity theory, quantum algorithms, optimisation and quantum sensing. They will contribute to the development of computational frameworks for sensing optimisation, adaptive sensing protocols, short-depth quantum circuits, variational algorithms and error-corrected sensing methods.

The successful applicant will be appointed at level A or B depending on experience.

Please contact Zixin Huang (zixin.huang@rmit.edu.au) for further details.

Key Accountabilities

1. Conduct research/scholarly activities under limited supervision either independently or as a member of a team including: publishing and presenting research outputs at conferences and research forums; contributing to external research funding submissions; participating in supervision of higher degree by research candidates.
2. May undertake limited teaching and supervision at undergraduate levels as required.
3. Undertake administration related to the position.

Key Selection Criteria

Essential:

1. A PhD, or evidence of imminent PhD completion, in quantum information, physics, mathematics, computer science, or a closely related discipline.
2. Demonstrated research experience in quantum information theory, supported by a strong understanding of the mathematical foundations of quantum mechanics and quantum information science.
3. Demonstrated expertise in at least one of the following areas: quantum complexity theory, quantum algorithms, or quantum error correction.
4. Demonstrated ability to formulate and investigate complex research problems, apply appropriate analytical or numerical methods, interpret results, and contribute to the preparation of publications and research presentations.
5. Demonstrated ability to work independently while contributing effectively within a collaborative research environment, including the capacity to work constructively with colleagues, project leaders, students and external research partners.

6. Excellent written and verbal communication skills, including the ability to communicate complex technical concepts clearly to specialist and broader audiences.

Desirable selection criteria:

1. Research experience in quantum metrology, quantum sensing or quantum parameter estimation.
2. Experience with convex or semidefinite optimisation, variational methods, or computational complexity.
3. Proficiency in relevant scientific programming or quantum-software tools, such as Python, Julia, MATLAB, Mathematica, Qiskit, PennyLane or equivalent platforms.
4. Experience mentoring or co-supervising research students and contributing to collaborative grant-funded projects.

Qualifications

Mandatory: A PhD in physics, mathematics or a related discipline.

Working with Children Check

Appointment to this position is subject to holding a valid Victorian Working with Children Check and other checks as required by the specific role. Maintaining a valid Working With Children Check is a condition of employment at RMIT.