POSİTİON DESCRİPTION

Position Title: Postdoctoral Research Fellow
Organisation Unit: School of Mechanical and Mining Engineering
Position Number: NEW
Type of Employment: Full-time, Fixed Term
Classification: Research Academic Level A

THE UNIVERSITY OF QUEENSLAND

The University of Queensland (UQ) contributes positively to society by engaging in the creation, preservation, transfer and application of knowledge. UQ helps shape the future by bringing together and developing leaders in their fields to inspire the next generation and to advance ideas that benefit the world. UQ strives for the personal and professional success of its students, staff and alumni. For more than a century, we have educated and worked with outstanding people to deliver knowledge leadership for a better world.

UQ ranks in the world’s top universities, as measured by several key independent ranking, including the CWTS Leiden Ranking (32), the Performance Ranking of Scientific Papers for World Universities (40), the US News Best Global Universities Rankings (42), QS World University Rankings (47), Academic Ranking of World Universities (54), and the Times Higher Education World University Rankings (66). Excluding the award component, UQ is now ranked 45th in the world in the ARWU, and is one of the only two Australian universities to be included in the global top 50.

UQ has an outstanding reputation for the quality of its teachers, its educational programs and employment outcomes for its students. Our students remain at the heart of what we do. The UQ experience – the UQ Advantage – is distinguished by a research enriched curriculum, international collaborations, industry engagement and opportunities that nurture and develop future leaders. UQ has a strong focus on teaching excellence, winning more national teaching excellence awards than any other in the country and attracting the majority of Queensland’s highest academic achievers, as well as top interstate and overseas students.

UQ is one of Australia’s Group of Eight, a charter member of edX and a founding member of Universitas 21, an international consortium of leading research-intensive universities.

Our 53,000-plus strong student community includes more than 16,400 postgraduate scholars and more than 17,000 international students from 135 countries, adding to its proud 260,000-plus alumni. The University has more than 6,600 academic and professional staff (full-time equivalent) and a $2.15 billion annual operating budget. Its major campuses are at St Lucia, Gatton and Herston, in addition to teaching and research sites around Queensland and Brisbane city. The University has six Faculties and four University-level Institutes. The Institutes, funded by government and industry grants, philanthropy and commercialisation activities, have built scale and focus in research areas in neuroscience, biomolecular and
biomedical sciences, sustainable minerals, bioengineering and nanotechnology, as well as social science research.

UQ has an outstanding track-record in commercialisation of our innovation with major technologies employed across the globe and integral to gross product sales of $11billion+.

UQ has a rapidly growing record of attracting philanthropic support for its activities and this will be a strategic focus going forward.

**Organisational Environment**

With an excellent reputation for quality graduate training and research performance, the School of Mechanical and Mining Engineering delivers a comprehensive range of programs in aerospace, materials, mechanical, mechatronic and mining engineering.

Boasting strong student enrolments in professionally accredited programs, combined with world-class researchers and facilities, we are focused on strengthening our position in the engineering community. We will develop global solutions to contemporary issues and mentor the leaders of tomorrow by attracting the brightest minds and fostering a truly innovative and collaborative work environment.

Our people are our greatest asset. We offer collaborative, inclusive work and study places, which are enriched by the significant diversity of our staff, students and community. We genuinely believe that creativity and innovation flourishes in an environment where people feel supported, valued and empowered. Mutual respect, inclusivity and accountability are at the cornerstone of UQ’s culture.

The School is committed to supporting the career growth of women researchers and have a number of initiatives to support women in developing and achieving a fulfilling research career at the School.

For more information about the School, please visit: [http://www.mechmining.uq.edu.au/](http://www.mechmining.uq.edu.au/)

**Information for Prospective Staff**

The School recognises and values equity and diversity, and encourages applications from any individual who meets the requirements of this position irrespective of gender, sexuality, race, ethnicity, religion, disability, age or other protected attributes. The School strives to provide an inclusive working environment, and along with the University is committed to supporting staff with family and caring responsibilities by providing policies, programs and initiatives to help balance work and family responsibilities.

Further information about life at UQ including staff benefits, relocation and UQ campuses is available at - [http://www.uq.edu.au/current-staff/working-at-uq](http://www.uq.edu.au/current-staff/working-at-uq)

The University of Queensland **Enterprise Agreement** outlines the position classification standards for Levels A to E.
DUTY STATEMENT

Primary Purpose of Position
To work in close collaboration with Defence Science Technology (DST) Group on computational and experimental aspects of high-speed propulsion focusing primarily on simulations of high-speed flow paths including reacting cases. Some experimental design and testing will also be expected.

Duties
Duties and responsibilities include, but are not limited to:

Research
- Applied CFD and conjugate heat transfer analysis of scramjet propulsion systems of relevance to DST.
- Preparing shock tunnel models as needed.
- Conducting shock tunnel experiments, and analysis and reporting of results.
- Work with a team of students and other postdoctoral researchers tofacilitate testing/validation of the newly implemented variable time-stepping paradigm by means of a benchmarking against other comparable codes.

Teaching and Learning
- Contribute to teaching in undergraduate or postgraduate courses as needed.
- Supervise students undertaking undergraduate and postgraduate coursework engineering projects and participate in the supervision of Higher Degree by Research (MPhil and PhD students).

Service and Engagement
- Interface with Defence Science and Technology Group’s team members to communicate progress as well as to understand their computational architecture in order to use it for this project.
- Provide support to other staff if required including covering for others during absences.
- Assist to foster the School’s relations with industry, government departments, professional bodies and the wider community.
- Any other duties as reasonably directed by your supervisor.

Other
Ensure you are aware of and comply with legislation and University policy relevant to the duties undertaken, including but not exclusive to:
- the University’s Code of Conduct
- requirements of the Queensland occupational health and safety (OH&S) legislation and related OH&S responsibilities and procedures developed by the University or Institute/School
- the adoption of sustainable practices in all work activities and compliance with associated legislation and related University sustainability responsibilities and procedures
- requirements of the Education Services for Overseas Students Act 2000, the National Code 2007 and associated legislation, and related responsibilities and procedures developed by the University.

Organisational Relationships

The position reports Dr. Anand Veeraragavan.

SELECTION CRITERIA

- PhD in the area or significant progress towards the award of a PhD in Mechanical/Aerospace Engineering with a strong focus on the field of computational fluid mechanics preferably with strong elements of code development.
- Provide applied numerical & experimental support to DST propulsion-related research activities including conjugate heat transfer & CFD analysis.
- Support any DST propulsion-related activities, as requested by the project supervisors.
- Australian Citizenship, and ability to procure and hold a NV-1 security clearance with AGSVA for the duration of the position.
- Willingness to travel to DST premises in Brisbane and work embedded with them on a periodic basis potentially for 50% of the appointment.
- Demonstrated track-record of successfully conducting advanced hypersonic propulsion simulations in large supercomputing clusters, including post-processing of the results.
- Ability and willingness to:
  - effectively present research findings to a broad range of audiences.
  - provide high quality, student focused teaching/tutoring at the undergraduate and postgraduate coursework levels.
  - promote and adhere to a positive safety culture.
  - Demonstrated ability to work collaboratively with internal and external stakeholders.

Qualification Verification

An appointment to this position is subject to the verification of the highest academic qualification from the conferring institution.

The University of Queensland values diversity and inclusion and actively encourages applications from those who bring diversity to the University. Please refer to the University’s Diversity and Inclusion webpage (http://www.uq.edu.au/equity) for further information and points of contact if you require additional support.

This role is a full-time position; however flexible working arrangements may be negotiated.

Accessibility requirements and/or adjustments can be directed to the contact person listed in the job advertisement.