POSITION DESCRIPTION

Position Title: Senior Research Fellow (Power and Energy Systems)
Organisation Unit: School of Information Technology & Electrical Engineering
Position Number: 3042323
Type of Employment: Full-time, Fixed-Term for Three Years
Classification: Academic Level C

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 Performance Ranking of Scientific Papers for World Universities (43), the US News Best Global Universities Rankings (52), QS World University Rankings (47), Academic Ranking of World Universities (55), and the Times Higher Education World University Rankings (60). UQ again topped the nation in the prestigious Nature Index and our Life Sciences subject field ranking in the Academic Ranking of World Universities was the highest in Australia at 20.

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 50,000-plus strong student community includes more than 13,000 postgraduate scholars and more than 12,000 international students from 144 countries, adding to its proud 240,000-plus alumni. The University has about 7,000 academic and professional staff and a $1.8 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+ (see http://uniquest.com.au/our-track-record).

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

School of Information Technology & Electrical Engineering

It is an exciting time to get involved with the School of Information Technology and Electrical Engineering, located on UQ's St. Lucia campus. The School is ramping up its investment in teaching, research and engagement to create an inspiring, diverse and flexible workplace. The direction is backed by a bold, new strategic vision to ensure the School is at the forefront of meaningful research outcomes and pedagogy across its core impact areas of health, data, automation and energy. Boasting strong student enrolments in professionally accredited programs, combined with world-class researchers and facilities, the School is focused on strengthening its position in the global computer science and engineering communities. By attracting the brightest minds and fostering a truly innovative and collaborative work environment, the School will develop global solutions to contemporary issues and mentor the leaders of tomorrow.

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.

Details of the School may be accessed on its website at http://www.itee.uq.edu.au/.

Redback Technologies Research Centre

The Redback Technologies Research Centre is a research enterprise created in partnership between Redback Technologies and The University of Queensland. Redback Technologies is an innovative start-up company backed by major companies and located on UQ's Long Pocket campus.

The research centre is focused on data aggregation and analytics in the field of power and energy systems. The integrating of meters, digital controls and cloud computing will enable new data products for direct use by multiple disparate industries. Research, development, and utilization of these technologies will profoundly change the status quo, and see new business models, products and services in sectors such as insurance, finance, transport, infrastructure planning, home automation, and energy networks.

The centre focus will be the research and development of three principle technologies to transform energy grids and energy consumption. They are:

1. Embedded Networks & Transactional Systems
2. Human-centred design of interactive Information Visualisations
3. Data Science, Big Data Analytics, and Machine Learning

Information for Prospective Staff

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

**DUTY STATEMENT**

**Primary Purpose of Position**

The primary purpose of this position is to lead the research activity within the Power and Energy Systems research area and to ensure effective collaboration with the two other domain leaders as part of The Redback Technologies Research Centre to deliver the specific research outcomes of an Advanced Queensland Platform Technology Project.

The successful applicant will formulate and implement strategies to meet the Centre's network management, data analytics, and interaction design research objectives. The domain leader will work with the Centre's Director, and members of each research group, including research fellows and HDR students, to deliver the Centre's milestone commitments and project deliverables.

**Duties**

Duties and responsibilities include, but are not limited to:

**Research**

- Develop and implement annual research activity plans for the Power and Energy research streams of the Centre that ensure delivery against project milestones.
- Conduct specific research activities, including collaboration with researchers in the centre to successfully deliver the expected research outcomes.
- Actively seek funding from industry and government sources.
- Ensure the research outcomes are of highest quality and facilitate commercialisation of those outcomes in the best interests of the founding partners.
- Publish high-quality technical papers in domain-specific top outlets.
- Produce milestone reports and relevant project submission documents.
- Implement and be accountable for the policies and guidelines of both the University of Queensland and The Redback Technologies Research Centre.

**Teaching and Learning**

- Provide leadership within the Centre in research training and supervision,
- Have an active and effective record of principal supervision of research higher degree students.
- Participate in events to attract postgraduate students to the centre

**Service and Engagement**

- Contribute to the processes that enable the academic team to manage the work of the School, including participate in School decision-making and serve on School committees
- Represent the University in industry or funding body forums and develop and maintain a relevant industry network
• 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 to the Director of the Redback Centre and will work under the guidance of three research group leaders within the School of Information Technology and Electrical Engineering.
SELECTION CRITERIA

Essential

- PhD degree in Electrical Engineering
- Demonstrated research experience in field of low voltage distribution power network analyses and control including renewable generation integration.
- Practical system integration experience involving PV/inverter/storage (involving software and hardware).
- National recognition and strong track record of publications in highly refereed journals in power engineering or related area
- Track record of supervision of Honours and Research Higher Degree students to successful completion
- Evidence of a significant contribution to research, including successful external grant applications
- Experience in liaising and collaborating with external agencies to develop co-operative research initiatives
- Ability to successfully lead a research team to deliver outputs to industry
- Outstanding effective communication and interpersonal skills

Desirable:

- Short-term load and generation forecasting.
- Solid background in applied mathematics especially optimisation and statistical analysis.
- Knowledge of feedback control systems theory and applications.
- Knowledge in IoT systems.

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.