

## **Research Fellow (Postdoctoral) in Security-Enhanced Cyber Physical Systems, University of Auckland, New Zealand.**

Faculty of Engineering

Full-time, 18 months fixed-term

The University of Auckland is New Zealand's largest university and houses the country's most successful Engineering Faculty. The Department of Electrical, Computer and Software Engineering (ECSE) are seeking a talented Postdoctoral Research Fellow for an 18 month fixed-term contract to work on a project in Security-Enhanced Cyber Physical Systems for Safety-Critical Applications.

The successful appointee will research, design, develop, and evaluate embedded systems supporting security, energy efficiency and guaranteeing time-predictable processing as they becoming the most important design aspects of cyber physical systems especially for safety-critical applications. The focus of this research is to reduce the security vulnerabilities of the computational components, which are typically designed using a hardware/software co-design approach targeting a multi-processor system on chip architectural platform, while satisfying other system level design constraints.

### **The specific objectives of this research are:**

- automated analysis of the security vulnerabilities of a target application based on specified security rules in a system-level design space exploration framework
- developing dynamically reconfigurable hardware to augment the initial platform architecture to enhance the system's security
- investigating hard real-time reconfigurable architectures for system prototypes with enhanced hardware security to be used in the multi-tasking environment of safety critical applications (such as, autonomous vehicles and self-aware robotic systems).

A passion for research and engineering with a strong practical and problem-solving ability is essential, along with interpersonal skills that enable you to interact comfortably with a range of people across difference research disciplines, and across NZ and internationally. You will also exhibit a positive, can-do approach to both research and practical implementation.

### **We are seeking applications from candidates who:**

- hold a Ph.D. in Electrical and Computer Engineering or Computer Science
- have a strong knowledge and experience in computer architecture, hardware/software co-design of hard real-time embedded systems and hardware security
- have strong written and verbal communication skills
- have the ability to work as part of a team and a passion for cyber security.

### **Why us?**

The Faculty of Engineering is committed to creating an environment where people thrive and contribute to improving the quality of life in national and global communities, as well as enhancing the wealth creation of the nation, through excellence in teaching, research and service.

The University of Auckland employs more than 5400 academic and professional staff to support over 41,000 students, making us one of NZ's largest employers. The University is consistently one of the highest-ranked universities on the Pacific Rim.

The University is committed to providing an excellent working environment through:

- flexible employment practices
- career development programmes
- a competitive salary with five weeks' annual leave
- a company superannuation scheme, discounted car parking, a generous parental leave allowance, childcare and a number of other discounts on internal and external services.

Auckland's harbour setting, magnificent beaches and beautiful parks make this a great place to study and work, whilst the University's close proximity to New Zealand's major performance and event venues enables staff and students to rub shoulders with leading practitioners. The pace of life is relaxed, the people are friendly and Auckland's diverse culture and sense of hospitality makes this an exciting and welcoming place to work.

### **How to apply**

The postdoctoral position is for 18 months, with a tentative start date of 1 June 2019 (or earlier).

Inquiries may be made to Dr. Morteza Biglari-Abhari ([m.abhari@auckland.ac.nz](mailto:m.abhari@auckland.ac.nz))

Applications should include a cover letter, Ph.D. thesis abstract, and updated recent curriculum vitae. Please note letters of references may be requested for longlisted candidates.

Applications close Sunday, 31 March 2019.

For further information go to [auckland.ac.nz/opportunities](http://auckland.ac.nz/opportunities)

The University is committed to meeting its obligations under the Treaty of Waitangi and achieving equity outcomes for staff and students in a safe, inclusive and equitable environment. For further information on services for Maori, Pacific, women, LGBTI, equity groups, parenting support and flexible work go to [equity.auckland.ac.nz](http://equity.auckland.ac.nz)

Direct enquiries only please - no agencies.