Javad Ebrahimian Amiri

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Qualifications

2016–2020 **Ph.D. in Computer Science**, *Australian National University*.

Thesis Topic *A Verifiable Foundation for Development of Programming Languages for Real-Time Systems*

2011–2013 **M.S. in Software Engineering**, *University of Tehran*, Iran, *GPA: 17.7/20*.

Thesis Topic *Resource Management for Accuracy Improvement in Real-Time Systems: A Prototypical Implementation*

2006–2011 **B.S. in Software Engineering**, *University of Tehran*, Iran.

Career Interests

A practical research or engineering role in:

- *System software, including operating systems, compilers and language runtimes*
- *Safety-critical embedded systems with real-time requirements*
- *Emerging many-core and heterogeneous systems*

Professional/Academic Experience

2020–Now **Software Developer**, *Australian National University*.

Develop, maintain and enhance software in the Memory Management Toolkit (MMTk) project and its bindings for OpenJDK, V8 and JikesRVM:

- Programming in Rust, C/C++, Java, Python and X86 assembly
- Debugging large-scale multi-language low-level performance-critical code
- Working independently with minimal supervision
- Working in a diverse team

2017–2018 **Tutor of the Computer Organization and Program Execution course**, *Australian National University*.

2014–2016 **Convenor of the Operating Systems Lab**, *University of Tehran*.

Linux kernel programming:

- Programming in C on Linux
- Debugging low-level kernel code
- Teaching

2012–2016 **Tutor of the Operating Systems course**, *University of Tehran*.

Summer 2015 **Co-supervisor of two B.S. Students**, *University of Tehran*.

Fall 2015 **Educator of a workshop**, *Sharif University of Technology*, Title: Conceptual study and preliminary performance evaluation of some RTOSs.

Selected Posgraduate Courses

- High-Performance Computing *20/20*
- Fault-Tolerant Systems *18.8/20*
- Performance Evaluation *18.5/20*
- Adv. Operating Systems *17/20*
- Multi-Core Embedded Systems *20/20*
- Adv. Computer Architecture *18.5/20*
- Stochastic RT Systems *18.5/20*
- Real-Time Systems *16.5/20*

Selected Projects

MMTk Core	**A** high-performance Memory Management Toolkit, in Rust
MMTk V8	**A** high-performance third-party heap for Google V8, in Rust, C++ and X86 assembly
MMTk OpenJDK	**A** high-performance third-party heap for Oracle OpenJDK, in Rust, C++, Java and X86 assembly
MMTk JikesRVM	**A** high-performance third-party heap for JikesRVM Java VM, in Rust, Java and X86 assembly
RTZebu (Ph.D.)	**A** high-performance and predictable programming language VM for real-time systems, in Rust, C and X86 assembly
RT-RPython (Ph.D.)	**A** language VM for a restricted real-time variant of Python-2 written in Python, Rust, C and X86 assembly
RTEMS (M.S.)	Improving the timing behaviour of the network interrupt manager in RTEMS RTOS, in C and ARM assembly
GEM5 (M.S.)	Adding fault injection and AVF calculation to the GEM5 full-system simulator in C++

Technical Skills

Programming Languages	**Rust, C/C++**, *X86 & ARM assembly, Java, C#, Python*.

Honors and Awards

Awarded	**Ph.D. scholarship for international students**, *Australian National University*.
	Supplementary Ph.D. scholarship, *CSIRO Data61 (NICTA)*.
Ranked	**4th among 2000+**, *Ph.D. in software engineering entrace exam*, Iran.
	90th among 30000+, *M.S. in software engineering entrace exam*, Iran.
	394th among 200000+, *University entrace exam*, Iran.

Publications

J. E. Amiri and M. Kargahi. A predictable interrupt management policy for real-time operating systems. In *2015 CSI Symposium on Real-Time and Embedded Systems and Technologies (RTEST)*, pages 1–8, Oct 2015.

Javad Ebrahimian Amiri, Stephen M. Blackburn, Antony L. Hosking, and Michael Norrish. Designing a low-level virtual machine for implementing real-time managed languages. In *Proceedings of the 11th ACM SIGPLAN International Workshop on*

Virtual Machines and Intermediate Languages, VMIL 2019, page 1–11, New York, NY, USA, 2019. Association for Computing Machinery.