

## Mario J. Badr

---

CONTACT INFORMATION	The Edward S. Rogers Department of Electrical and Computer Engineering Room 1107, Sandford Fleming Bldg. 10 King's College Road, Toronto, ON M5S 3G4 Canada University of Toronto
EDUCATION	<b>University of Toronto</b> , Toronto, Ontario, Canada Ph.D., Computer Engineering, September, 2013 - Present Dissertation: "Developing Novel Evaluation Methodologies for Assessing Multi-Threaded Applications" Advisor: Natalie Enright Jerger  <b>University of Toronto</b> , Toronto, Ontario, Canada M.A.Sc, Computer Engineering, January, 2014 Thesis: "Synthetic Traffic Models That Capture Cache Coherent Behaviour" Advisor: Natalie Enright Jerger  <b>University of Toronto</b> , Toronto, Ontario, Canada B.A.Sc, Electrical Engineering, May, 2011
RESEARCH INTERESTS	Many/multi-core architectures, cache coherence, interconnection networks, application modelling, machine learning, design space exploration.
PEER-REVIEWED PUBLICATIONS	Joshua San Miguel, <b>Mario Badr</b> , and Natalie Enright Jerger. Load Value Approximation. In Proceedings of the International Symposium on Microarchitecture (MICRO), to appear, December 2014. (acceptance rate: 19%)  <b>Mario Badr</b> and Natalie Enright Jerger. SynFull: Synthetic Traffic Models Capturing a Full Range of Cache Coherence Behaviour. In Proceedings of the International Symposium on Computer Architecture (ISCA), June 2014. (acceptance rate: 18%)
PRESENTATIONS AND POSTERS	<b>International Workshop on Parallelism in Mobile Platforms</b> <i>Paper</i> <span style="float: right;"><i>June, 2015</i></span> Ajaykumar Kannan, Mario Badr, Parisa Khadem Hamedani and Natalie Enright Jerger. <i>Offloading to the GPU: An Objective Approach</i>  <b>International Symposium on Microarchitecture</b> <i>Poster</i> <span style="float: right;"><i>December, 2014</i></span> Joshua San Miguel, Mario Badr, and Natalie Enright Jerger. <i>Load Value Approximation</i>  <b>International Symposium on Computer Architecture</b> <i>Presentation</i> <span style="float: right;"><i>June, 2014</i></span> Mario Badr and Natalie Enright Jerger. <i>SynFull: Traffic Models Capturing Cache Coherence Behaviour</i>

INDUSTRY  
EXPERIENCE

**Qualcomm Research Silicon Valley**, Santa Clara, California, USA

*Intern*

*May, 2015 - August, 2015*

Used the Multicore Asynchronous Runtime Environment (MARE) to develop a complex application, with domain-specific kernels in C++, openCL, and Hexagon. Provided feedback to the MARE team on performance issues and bottlenecks.

**Environment Canada**, Toronto, Ontario, Canada

*Intern*

*June, 2009 - August, 2010*

Implemented new features and bug fixes for the NinJo workstation, a java-based tool for meteorologists. Notable projects include upgrading the visualization framework for lightning strikes to be faster and use significantly less memory, incorporating storm cell data for Canada, and helping to create a configurable view of weather data for a given storm cell.

TEACHING  
EXPERIENCE

**Engineering Strategies and Practice**, 1st Year Undergraduate

*Teaching Assistant*

*Tutorials*

Supervised students through the design process for a given project and provided feedback on written design documents, with a focus on stimulating an engineering methodology to design.

**Computer Fundamentals**, 1st Year Undergraduate

*Teaching Assistant*

*Tutorials, Computer Lab*

Taught the fundamentals of computer programming in C, including data structures, recursion, and sorting algorithms.

**Computer Organization**, 3rd Year Undergraduate

*Teaching Assistant*

*Computer Lab*

Supervised and helped students implement a simple von Neumann processor using verilog.

**Computer Architecture**, 4th Year Undergraduate & Graduate

*Teaching Assistant*

*Tutorials, Computer Lab*

Taught computer architecture concepts, including caches, pipelining, out-of-order cores, and cache coherence.

PROFESSIONAL  
DEVELOPMENT

**Prospective Professors in Training**

*Thirteen Seminars, One full-semester course*

*2014-2015*

Began preparations for becoming a professor in academia, attending several seminars and preparing a preliminary teaching dossier and research statement. Also completed a course on Teaching Engineering in Higher Education.

**Mini-MBA**

*Ten Classes*

*2015*

Gained an understanding of fundamental business concepts and applied what I learned in a group-based case competition.

**Oral Presentation Skills**

*Five Classes*

*2014*

Examined presentation structure and the use of visual aids. Exchanged feedback with peers and the instructor on individual oral presentations.

**Prewriting Strategies for Developing and Organizing Your Ideas**

*Four Classes*

*2014*

Learned several new strategies for developing and organizing ideas before (and during) the writing process.

**NSERC Proposal Workshop**

*Three Classes*

*2014*

Examined features of good and bad proposal writing, and exchanged feedback with peers on our own NSERC proposals.

**Teaching Fundamentals Certificate**

*Six Workshops*

*2012-2013*

Improved my teaching skills with workshops on pedagogy, research, academic integrity, and students in difficulty.

SCHOLARSHIPS &  
AWARDS

**Roberto Padovani Intern Scholarship - \$5,000**

*2015*

Awarded to seven Qualcomm Research interns across the globe for outstanding technical contributions made during their internship.

**Thomas Noakes & Queen Elizabeth II Graduate Scholarship - \$15,000**

*2015*

Awarded for excellence in science and technology.

**TA Teaching Excellence Award - \$200**

*2015*

Awarded to four recipients across the three University of Toronto campuses based on nominations, references, and teaching philosophy.

UNIVERSITY  
SERVICE

**Appointed Graduate Representative**

*2015-2016*

Executive Committee of Faculty Council - Faculty of Applied Science & Engineering

**Graduate Representative**

*2015-2016*

Faculty Council - Faculty of Applied Science & Engineering

**President**

*2015-2016*

Electrical and Computer Engineering Graduate Students' Society

**Member**

*January - April 2014*

Bargaining Support Committee

**Steward**

*2013-2014*

Canadian Union of Public Employees

**Social Event Coordinator**

*2012-2013*

Electrical and Computer Engineering Graduate Students' Society