MOHAMMAD HOSSEIN ASKARI HEMMAT

Personal Information

✉ m.h.askari.hemmat@gmail.com
http://hossein1387.github.io/
https://github.com/hossein1387/

Research Interest

- Hardware acceleration for deep neural networks
- Hardware design and verification
- Hardware software co-design

Education

- **Master of Applied Science** in Electrical and Computer Engineering 2013-2015
  Concordia University, Montreal, Quebec, Canada
  Total GPA: 4.15/4.3
- **Bachelor of Science** in Electrical Engineering 2008-2012
  Shahid Bahonar University of Kerman, Iran
  Total GPA: 3.2/4

Publications

- Towards code generation for ARM Cortex-M MCUs from SysML activity diagrams **M. H. Askari-Hemmat**, O. A. Mohamed and M. Boukadoum, ISCAS - International Symposium on Circuits and Systems 2016, Montreal
- Formal Modeling, Verification and Implementation of a Train Control System **M. H. Askari-Hemmat**, O. A. Mohamed and M. Boukadoum, ICM 2015 - 27th International Conference on Microelectronics
- Automatic Mapping of AF3 specifications to ARM Cortex-M based FRDM platform **M. H. Askari-Hemmat**, O. A. Mohamed and M. Boukadoum, ICM 2014 - 26th International Conference on Microelectronics
- Duplication Avoidance for Energy Efficient Wireless Sensor Networks A.Mahani, **M. H. Askari-Hemmat** and Yousef S. Kavian, 8th International Symposium on Communication Systems, Networks & Digital Signal Processing (CSNDSP), 2012

Honors and Awards:

- Graduate Student Support Program (GSSP) scholarship Apr 2014
- ReSMiQ Scholarship for M.SC students Feb 2014
- Partial Tuition Scholarship for International Students May 2013
- Graduate Student Support Program (GSSP) scholarship May 2013
- ReSMiQ Scholarship for M.SC students Jan 2013

Work Experience

- **ASIC Verification Engineer** at Microsemi (July 2016 to present)
  - Working on next generation of Optical Transport Network (OTN) processors
  - Writing tests in SystemVerilog using UVM methodology
  - Developing Ethernet traffic generator in C++
  - Developing scripts for analyzing test outputs

- **Computer Engineer** at TRU Simulation + Training (2015-2016)
  - Developing software drivers for various high speed avionic protocols in C++: Airbus VCOM, AFDX, A429
  - Building custom linux kernels as well as maintaining linux machines for the hosts and re-hosts of the test station
  - Developing scripts for running various avionic simulation packages

Academic Experience

- **Research Assistant** at Concordia University 2013-2015

  Thesis Description:
  - Formalizing SysML/UML activity diagrams based on NuAC semantics for ARM Cortex-M processors
  - Developing rules to map SysML/UML activity diagram node to it's equivalent in Keil RTX
  - Developing Java application for automating the process of mapping
  - Formal Verification, modeling and implementation of a Train Control System
  - Working on different hardware formal verification techniques with a special concentration on Model checking
  - Model checking of a Self stabilizing distributed clock Synchronization Protocol using NuSMV model checker and AutoFocus3
- **Teaching Assistant** at Concordia University 2013-2015

  - Teaching and lab assistant for Microprocessors and their Applications
  - Programmer on duty for Functional Verification
  - Teaching assistant for Digital System Design1&2
  - Lab assistant for Computer Organization and Software

Languages

English (Fluent), Persian (Native), French (B2)

Computer Skills:

- Programming Languages: C/C++, Scala, Java, Assembly
- Scripting: Python, Bash
- Hardware Description Languages: SystemVerilog, Chisel, SystemC
- Tools and Technologies: Vivado Design Suite, Vivado HLS, Xilinx ISE, KEILμVision, ModelSim, MATLAB
- Version Control Management: Git, SVN

References

- **Dr. Otmane Ait Mohamed** (Master Thesis Supervisor)
  Electrical and Computer Engineering Department
  Concordia University
  Montreal, Quebec, Canada
  E-mail: otmane.aitmohamed@concordia.ca

- **Dr. Mounir Boukadoum** (Master Thesis Co-Supervisor)
  Electrical and Computer Engineering Department
  Universite du Quebec a Montreal (UQAM)
  Quebec, Canada
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- **Dr. Sofiene Tahar**
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  Concordia University
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