MOHAMMAD HOSSEIN ASKARI HEMMAT

Contact Information

☎ +1-514-686-7204
✉ m.h.askari.hemmat@gmail.com
http://users.encs.concordia.ca/~mo_askar
https://github.com/hossein1387/

Research Interest

- Hardware Design and Verification
- CAD for digital circuits and FPGAs
- Hardware Software Co-Design
- Design Methods For Embedded Systems

Education

- Master of Applied Science in Electrical Engineering
  Winter 2013 to Spring 2015, Concordia University
  Total GPA: 4.15/4.3
  Formal Hardware Verification A+(4.3/4.3)
  Hardware Functional Verification A+(4.3/4.3)
  Embedded System Design A(4/4.3)
  ECSE-649 VLSI Testing, Mcgill University A(4/4)
- Bachelor of Science in Electrical Engineering
  Shahid Bahonar University of Kerman, Iran, July 2012
  Total GPA: 3.2

Publications

- Towards code generation for ARM Cortex-M MCUs from SysML activity diagrams M. H. Askari-Hemmat, O. A. Mohamed and M. Boukadoum, To be appeared on: ISCAS - International Symposium on Circuits and Systems 2016
- Formal Modeling, Verification and Implementation of a Train Control System M. H. Askari-Hemmat, O. A. Mohamed and M. Boukadoum, To be appeared on 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

Languages

English, Persian (Native), French (B2)

Honors and Awards:

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

Computer Skills:

- Programming Languages: C/C++, Java, Assembly
- Scripting: Python, Bash
- Hardware Description Languages: VHDL, Verilog, SystemC, SystemVerilog
- Formal Verification Languages and tools: NuSMV, Formality, Conformal, AutoFOCUS3
- Tools and Technologies: Vivado Design Suite, Vivado HLS, Xilinx ISE, KEILμVision, ModelSim, QuestaSim, MATLAB, Altium Designer, Android SDK, Visual DSP++
- Operating Systems: Linux, Android, Windows

- Version Control Management: Git, SVN

Academic Experience

- Research Assistant at Concordia University (2013 to April 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 to present)
  - Teaching and Lab assistant for COEN6711- Microprocessors and their application
  - Programmer On Duty for COEN6541- Functional Verification(System Verilog)
  - Teaching assistant for the course COEN 312-Digital System Design1 and COEN 313- Digital System Design2
  - Lab assistant for the course COEN 311- Computer Organization and Software

Work Experience

- Computer Engineer at TRU Simulation + Training (Since July 2015)
  - 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.
- HW engineer, Contractor: Kerman Municipality, Iran (2012 to 2013)
  Job Description: I was hired as a hardware engineer to design a data logger for mine trucks. I was asked to log the truck position and other sensor inputs data. I used a SIM908 GSM modem and an AVR microcontroller to send data back to the basestation.
  My key Contributions:
  - Designing and testing of the PCB using Altium designer
  - Writing firmware for the Microcontroller

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
  E-mail: boukadoum.mounir@uqam.ca

- Dr. Sofiene Tahar
  Electrical and Computer Engineering Department
  Concordia University
  Montreal, Quebec, Canada
  E-mail: tahar@ece.concordia.ca