

MOHAMMAD HOSSEIN ASKARI HEMMAT

PERSONAL INFORMATION

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

RESEARCH INTEREST

- Deep Learning Acceleration
- Computer Architecture

EDUCATION


- **Ph.D. Candidate** in Electrical and Computer Engineering 2018-
Polytechnique Montreal, Montreal, Quebec, Canada,
IFT6135 Representation Learning (Deep Learning)
ELE8307 Rapid prototyping of digital systems (Designing a CNN accelerator on
FPGA)
- **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

- RISC-V Barrel Processor For Deep Neural Network Acceleration
MohammadHossein AskariHemmat Olexa Bilaniuk, Sean Wagner, Yvon Savaria,
Jean-Pierre David, FCCM 2020
- U-Net Fixed-Point Quantization for Medical Image Segmentation
MohammadHossein AskariHemmat, Sina Honari, Lucas Rouhier, Christian S.
Perone, Julien Cohen-Adad, Yvon Savaria, Jean-Pierre David, MICCAI 2019
- Towards code generation for ARM Cortex-M MCUs from SysML activity diagrams.
M. H. Askari-Hemmat, O. A. Mohamed and M. Boukadoum, ISCAS - Interna-
tional 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. Kaviani, 8th International Sym-
posium on Communication Systems, Networks & Digital Signal Processing (CSNDSP),
2012

WORK EXPERIENCE

- **Internship** at CMC Microsystems (May 2020)
 - Designing a RISC-V barrel processor.
 - Developing a UVM based verification environment for a multi threaded RISC-V processor.
- **ASIC Verification Engineer** at Microsemi a Michrochip company (June 2016 to June 2018)
 - Worked on the next generation of Optical Transport Network (OTN) processors.
 - Writing tests in SystemVerilog using UVM methodology.
 - Developed Ethernet traffic generator in C++.
 - Developed scripts for analyzing test outputs.

	<ul style="list-style-type: none"> • Software Engineer at TRU Simulation + Training (2015-2016) <ul style="list-style-type: none"> - Developed software drivers for various high speed avionic protocols in C++: Airbus VCOM, AFDX, A429 - Built custom linux kernels as well as maintaining linux machines for the hosts and re-hosts of the test station - Developed scripts for running various avionic simulation packages
WORKSHOPS AND TALKS	<ul style="list-style-type: none"> • CMC Workshop: Accelerating AI - Challenges and Opportunities in Cloud and Edge Computing: In this talk, I reviewed the most effective methods for accelerating computation in Deep Neural Networks. Specifically, I talked about Quantization. Quantization in Deep Learning is a technique to reduce power, memory and computation time of deep neural networks. I talked about how one can improve the performance of a DNN using both software and hardware solutions. https://www.cmc.ca/workshop-accelerating-ai-montreal/ • Bahonar University Of Kerman: New Methods of Designing Digital Systems: I organized and presented a one day workshop on new methods of designing digital systems. The workshop was concentrated about how to use open source hardware tools and IPs with a special focus on risc-v ecosystem. Electrical Engineering Department of Shahid Bahonar University of Kerman, August 2017.  http://hossein1387.github.io/riscv_workshop/index_en.html
HONORS AND AWARDS:	<ul style="list-style-type: none"> • FRQNT scholarship for Phd students Apr 2020 • 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
LANGUAGES	Persian (Native), English (Fluent), French (B2)
COMPUTER SKILLS:	<ul style="list-style-type: none"> • Machine Learning Frameworks: PyTorch • Programming Languages: C/C++, Python, Scala, Bash • Hardware Description Languages: SystemVerilog, Chisel, SystemC • Version Control Management: Git, SVN
REFERENCES	<ul style="list-style-type: none"> • Jean Pierre David (PhD Supervisor) Electrical and Computer Engineering Department Ecole Polytechnique de Montreal Montreal, Quebec, Canada E-mail: JPDavid@polymtl.ca • Yvon Savaria (PhD Co-Supervisor) Electrical and Computer Engineering Department Ecole Polytechnique de Montreal Montreal, Quebec, Canada E-mail: yvon.savaria@polymtl.ca