Hodjat Asghari Esfeden

Curriculum Vitae

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DOB: December 24th, 1991

Education

2015–Present **University of California, Riverside, CA, USA**, *Ph.D.*, *Computer Science*.
Advisor: Professor **Nael Abu-Ghazaleh**

2015–2017 **University of California, Riverside, CA, USA**, *M.Sc.*, *Computer Science*.
GPA: 3.91/4.00

2010–2015 **Sharif University of Technology, Tehran, Iran**, *B.Sc.*, *Computer Engineering*.
Advisor: Professor **Hamid Sarbazi Azad**

Research Interests

- **Computer Architecture**
- GPU Architecture/Compiler Solution Design
- Efficient GPU Utilization for Machine Learning Purposes

Publications

ASPLOS'19 **CORF: Coalescing Operand Register File for GPUs**.
Hodjat Asghari Esfeden, Farzad Khorasani, Hyeran Jeon, Daniel Wong, and Nael Abu-Ghazaleh.
The 24th International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS), 13 pages, April 2019.

MICRO'18 **In-Register Parameter Caching for Dynamic Neural Nets with Virtual Persistent Processor Specialization**.
Farzad Khorasani, **Hodjat Asghari Esfeden**, Nael Abu-Ghazaleh, and Vivek Sarkar.
The 51st Annual IEEE/ACM International Symposium on Microarchitecture (MICRO), 13 pages, October 2018.

ISCA'18 **RegMutex: Inter-Warp GPU Register Time-Sharing**.
Farzad Khorasani, **Hodjat Asghari Esfeden**, Amin Farmahini-Farahani, Nuwan Jayasena, and Vivek Sarkar.
The 45th International Symposium on Computer Architecture (ISCA), 13 pages, June 2018.

DAC'17 **RIC: Relaxed Inclusion Caches for Mitigating LLC Side-Channel Attacks**.
Mehmet Kayaalp, Khaled N. Khasawneh, **Hodjat Asghari Esfeden**, Jesse Elwell, Nael Abu-Ghazaleh, Dmitry Ponomarev, and Aamer Jaleel.
The 54th Design Automation Conference (DAC), 6 pages, June 2017.

Experience

Winter'19 **Instructor**, UC Riverside.
CS161: Design and Architecture of Computer Systems.

2015–Present **Graduate Student Researcher**, UC Riverside.

Spring'18 **Teaching Assistant**, UC Riverside.
CS161: Design and Architecture of Computer Systems & CS141: Intermediate Data Structures and Algorithms

2014–2015 **Training and Research Assistant**, Institute for Research in Fundamental Sciences (IPM.), Tehran, Iran.

2013–2014 **Undergraduate Research Assistant**, High Performance Computer Architecture & Networks (HPCAN) Laboratory, Sharif University of Technology, Tehran, Iran.

2012–2015 **Teaching Assistant**, Sharif University of Technology, Tehran, Iran.
Electrical Circuit, Numerical Methods, and Fundamentals of Electrical and Electronical Circuits.

Selected Academic Projects

Spring'16 **Tomasulo Algorithm Simulator**, *Advanced Computer Architecture*.
C Implementation of Tomasulo algorithm for out-of-order pipeline architecture, with configurable hardware and instructions.

Fall'16 **Kernel Programming**, *Advanced Operating Systems*.

- Thread profiling & scheduling: profiled thread scheduling in Linux kernel, and changed the scheduling policy of threads from local to global scheduling.
- Kernel threads support: modified the xv6 implementation to add kernel threads support.

Winter'17 **Path Profiling**, *Advanced Compiler Construction*.
Collected the control flow information and instrumented the code to find the execution frequency of each basic block, edge and loop (Dynamic Analysis); implemented in Soot, a Java optimization framework that analyzes, instruments, and optimizes the Java programs.

Talks

Dec. 2015 **GPGPUs: Challenges and Opportunities**, *Institute for Research in Fundamental Sciences (IPM.), Tehran, Iran*.

Honors and Awards

2015 **Dean's Distinguished Fellowship**, *UC Riverside*.

2010 **Ranked** 17^{th}, *among more than 100,000 applicants in the nationwide university entrance exam for undergraduate students in Mathematics.*.

2010 **Ranked** 40^{th}, *among more than 100,000 applicants in the nationwide university entrance exam for undergraduate students in Pure English.*.

Leadership Experience

2013-2014 **Secretary of Senfi Council**, *Sharif University of Technology, Tehran, Iran*.

Skills & Abilities

Natural Languages: Persian (native), English (fluent), and Arabic (familiar).

Programming Languages: C, C++, Python, JavaScript, Assembly, Verilog HDL

Software and Design Tools: Soot, Git, Latex, Synopsis EDA Toolchain, Altera Quartus, HSPICE

Architectural Simulators: GPGPUSim, Gem5, ModelSim, CACTI, M-Sim