

# Moein Khazraee

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<b>Education</b>	PhD in Computer Engineering, UC San Diego Adviser: Aaron Schulman Specialization: Systems, Hardware	2013 - Current	
	Masters in Computer Science, UC San Diego, GPA: 3.97/4.0 Adviser: Michael Taylor Specialization: Computer Architecture	2013 - 2016	
	B.S. in Electrical Engineering, Sharif University of Technology Majoring in Digital Systems, GPA: 18.39/20.00 (3.84/4.0)	2008-2013	
<b>Publications</b>	<ul style="list-style-type: none"><li>• <u>M. Khazraee</u>, L. V Gutierrez, I. Magaki, M. B. Taylor, "Specializing a planet's computation: ASIC Clouds" <i>IEEE Micro top picks</i>, 2017.</li><li>• <u>M. Khazraee</u>, L. Zhang, L. V Gutierrez, M. B. Taylor, "Moonwalk: NRE optimization in ASIC Clouds, or, accelerators will use old silicon" <i>Proceedings of Architectural Support for Programming Languages and Operating Systems (ASPLoS)</i>, 2017.</li><li>• I. Magaki, <u>M. Khazraee</u>, L. V Gutierrez, M. B. Taylor, "ASIC clouds: specializing the datacenter." <i>Proceedings of the 43rd International Symposium on Computer Architecture (ISCA)</i>, IEEE Press, 2016.</li><li>• <u>M. Khazraee</u>, A. R. Zamani, M. Hallajian, S. P. Ehsani, H. A. Moghaddam, A. Parsafar, M. Shabany. "A novel hardware implementation for joint heart rate, respiration rate, and gait analysis applied to Body Area Network." <i>Circuits and Systems (ISCAS), 2013 IEEE International Symposium on</i>, IEEE, 2013.</li><li>• M. R. Homaeinezhad, M. Khazraee, <u>M. Khazraee</u>. "An Open-Source High Speed C++/MEX Framework for the Detection and Delineation of Long Duration Ambulatory Holter ECG Events: HSEDF." <i>International Journal of Information Engineering</i>, 2.1 (2012): 12-30.</li></ul>		
	<b>Research</b>	<b>ASIC Clouds</b>	Sep. 2015 - Present
		<ul style="list-style-type: none"><li>• Developed a prototypical ASIC Cloud architecture, which are datacenters full of ASICs, emerging in near future.</li><li>• Developed an infrastructure to design the TCO-optimal datacenter for these clouds.</li><li>• Showed that technology node selection is a major tool for managing ASIC Cloud NRE, which is the main challenge for ASIC Clouds. This allows the designer to trade off an accelerators excess energy efficiency and cost performance for lower total cost.</li></ul>	
		<b>Bioengineering</b>	2011 - 2013
		<ul style="list-style-type: none"><li>• Biomedical signal processing and digital circuit implementation for wireless medical care system based on Body Area Networks (BAN). Specifically establishing sensor networks through Bluetooth, utilizing MEMS and pressure sensors for gait detection, and ECG and body posture analysis.</li><li>• ECG signal processing for the detection of long duration ambulatory holter ECG events, using C++ (MEX in MATLAB) for high speed</li></ul>	
<b>Work Experience</b>	<b>Research Assistant</b> UC San Diego	Sep. 2013 - Present	
	<ul style="list-style-type: none"><li>• Evaluating performance and power trade-offs for different architectures ranging from small application specific processors to processors designed for servers</li></ul>		

**Software Engineer Intern** Google Apr. 2017 - Jul. 2017  
 Collaborated with a team of engineers to develop a methodology for TCO analysis for a part of Google's infrastructure (confidential):

- Learned about how TCO is evaluated in large scale datacenters
- Used different profiling tools such as perf, valgrind
- Understood a large in production C++ program with several dependencies and made a standalone C-like version of it which is easy to understand

**Activities**

**President of 'Cultural Iranian Student Association' (CISTA)** 2016  
 UC San Diego

**Financial Director of 'Cultural Iranian Student Association' (CISTA)**  
 UC San Diego 2014-2015

**Head and Executive Director of Promotion Committee**  
 Sharif University of Technology

- Sharif Cup 2012, the 1st Sharif open robotics competition Sep.26-28, 2012
- Smart Grid Conference Oct. 19-21, 2010
- RESANA, the Scientific and Cultural Group of students, performing all types of extracurricular activities in Electrical Engineering Department 2012-2013

**Academic Experience**

**Teaching Assistant** UC San Diego Fall 2014

- Teaching Assistant for Principals of Computer Architecture graduate course

**Teaching Assistant** Sharif University of Technology 2011-2013

- Instructor for "Verilog" part of "Logic Circuits and Digital Systems" course (three semesters), recreated a new syllabus
- Member of design group for "Embedded Systems' Laboratory"
- Revised lab experiments and instructions for "Structure of Computer and Microprocessors Laboratory"

**Teacher** Allame Helli 5 (NODET) Junior High School 2012-2013

- Computer Algorithms • Web Programming

**Major overhaul of the Microprocessor Lab.,** 2012  
 Sharif University of Technology

- I took responsibility for instructional and interior improvement in Microprocessor's Laboratory, in which courses such as EE25723 (Microprocessor's System Laboratory) and EE25776 (FPGA and ASIC Systems' Design) were taught.

**Conference Reviewer, IEEE BIOCAS** 2012 - Present

**Technical Skills**

SystemVerilog, C/C++, Python, Java, VCS, Design Compiler, Quartus, ModelSim, Keil uVision, Matlab, Vivado HLS, JavaScript

**Awards & Talks**

- Poster Presentation at the Center for Future Architecture Research Dec. 2016
- Qualcomm FMA Fellowship 2015-2016
- Fellowship for Ph.D. from University of California San Diego 2013-2014
- Privileged project winner for "Biomedical signal processing and digital circuit implementation for wireless medical care system based on Body Area Networks (BAN)", Electrical Engineering top projects competition Jun. 2012
- Scholarship for Minor in English, Sharif University of Technology 2010-2013
- Ranked amongst top 0.1% in the Nationwide University Entrance Exam 2008

**Graduate Coursework**

Parallel Computer Architecture, Advanced Micro-architecture, Validation and Prototyping of Embedded Systems, Operating Systems, Advanced Compiler Design, Data Mining and Analytics, Principle of Database Systems, Data Communication Networks, Computer Interface Circuits