



Sajjad Taheri

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| EDUCATION | Ph.D. in Computer Science, UC Irvine June 2019 (Expected) Thesis: <i>Towards engineering computer vision systems: from web to FPGAs</i> M.S. in Computer Engineering, University of Tehran, Iran 2013 B.S. in Computer Engineering, University of Tehran, Iran 2010 |
| INDUSTRY | <i>Google Summer of Code (GSoC) Mentor</i> OpenCV Foundation Summer 2017 Helped with mentoring two students participating in GSoC towards preparing documentation and web based tutorials for OpenCV. <i>JavaScript Engineering Intern</i> Mozilla Summer 2015 Contributed to FireFox JavaScript JIT compiler to support more ECMAScript SIMD (formerly known as SIMD.js) data types and operations. Vectorized several gl-matrix matrix and vector functions using SIMD.js API and achieved more than 2x speedup. |
| RESEARCH PROJECTS | OpenCV.js: Developed the initial version of OpenCV.js, a JavaScript binding for OpenCV library which brings hundreds of image processing and computer vision functions to web browsers with near native performance. Languages used: C++, JavaScript, HTML5, Python. <u>highlighted in the EE times</u> AFFIX: Developed a framework for FPGA acceleration of high level computer vision algorithms that are modeled as task graphs (based on OpenVX spec). It includes a graph compiler that translates computer vision algorithms to CPU and FPGA backends. Languages used: OpenCL (C99), Python, C++, CMake. WebRTC Bench: Contributed to development of a benchmark for performance evaluation of WebRTC implementations. Languages used: JavaScript, HTML5. |
| SKILLS AND TOOLS | <ul style="list-style-type: none">• Programming Languages: Proficient in Python, C/C++, JavaScript, Java, and assembly languages, familiar with C#, Haskell, and Rust• Software Development Productivity: CMake, Doxygen, Gtest, Sphinx, Git, and GitHub• Office Productivity: \LaTeX and PGF/TikZ 🍷• Computer Vision and Machine Learning: OpenCV, PCL, Caffe, Pytorch, Weka• Compiler Construction: LLVM, ANTLR• Web Standards: WebRTC, WebAssembly, SIMD.js• Hardware Design and Verification: OpenCL, Verilog, SystemC, and TCL• Algorithmic Programming and Problem Solving |
| HONORS AND AWARDS | UCI Dean Fellowship, 4 years of full financial support. 2013 Top %0.1 of country, ranked 296 among 200,000 in nationwide university entrance exam. 2005 |

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| TEACHING AND MENTORING EXPERIENCES | Mentor | |
| | UCI International Summer Undergraduate Research | 2016 and 2017 |
| | <ul style="list-style-type: none"> Proposed research projects for undergraduate interns from Korean universities and supervised them in completing them. | |
| | Teaching Assistant | |
| | <ul style="list-style-type: none"> Introduction to Computer Organization, UC Irvine Discrete Mathematics for Computer Science, UC Irvine Principles of Operating Systems, UC Irvine Data Structures, UC Irvine | |
| SELECT CONFERENCE PAPERS | [1] S. Taheri, P. Behnam, E. Bozorgzadeh, A. V. Veidenbaum, A. Nicolau, "AFFIX: Automatic Acceleration Framework for FPGA Implementation of OpenVX Vision Algorithms", ACM/SIGDA Symposium on Field-Programmable Gate Arrays (FPGA) 2019. | |
| | [2] S. Taheri, A. V. Veidenbaum, A. Nicolau, N. Hu, and M. Haghighat, "OpenCV.js: Computer Vision Processing for the Open Web Platform", ACM Multimedia Systems (MMSys) 2018. | |
| | [3] P. Behnam, B. Alizadeh, S. Taheri, M Fujita, "Formally analyzing fault tolerance in datapath designs using equivalence checking", Asia and South Pacific Design Automation Conference (ASP-DAC) 2016. | |
| | [4] S. Taheri, L. Beni, A. V. Veidenbaum, A. Nicolau, R. Cammarota, Jianlin Qiu, Qiang Lu and M. Haghighat, "WebRTC Bench: Performance Assessment of WebRTC Implementations", ACM/IEEE Embedded Systems for Real-time Multimedia (ESTIMEDIA) 2015. | |
| MAGAZINE ARTICLES | [5] S. Taheri, A. V. Veidenbaum, A. Nicolau, N. Hu, and M. Haghighat, " Computer Vision for the Masses: Bringing Computer Vision to the Open Web Platform ", Intel Parallel Universe Magazine, April 2018 issue. | |
| OTHER | [6] S. Taheri Bringing the Power of SIMD.js to gl-matrix , Mozilla Hacks Blog, 2015. | |
| PRESENTATIONS | Improving OpenVX Application Development and Optimization Process for FPGAs Systems, Intel, Santa Clara. | May 2017 |
| ACADEMIC SERVICES | Peer-reviewer for International Journal of Parallel Programming (IJPP) | |
| COMMUNITY SERVICES | Co-host "Static Waves" music show on KUCI radio station | Sep. 2016 - March 2017 |