

## Sajjad Taheri

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| CONTACT INFORMATION                | 3099 Donald Bren Hall,<br>University of California, Irvine<br>Irvine, CA 92617  | <i>Cell:</i> (949)-690-3484<br><i>E-mail:</i> <a href="mailto:sajjad@uci.edu">sajjad@uci.edu</a><br><i>Web:</i> <a href="https://sajjad.github.io">https://sajjad.github.io</a><br><i>GitHub:</i> <a href="https://www.github.com/sajjad">https://www.github.com/sajjad</a> |
| EDUCATION                          | <b>University of California, Irvine</b> (School of ICS), Irvine, CA   |   |
|                                    | <b>P.h.D. in Computer Science</b><br><b>University of Tehran</b> (School of ECE), Tehran, Iran  | 2013-2019 expected  |
|                                    | <b>B.Sc. and M.Sc. in Computer Engineering</b>  | 2005-2013   |
| PROFESSIONAL EXPERIENCES           | UC Irvine, Irvine, CA   |   |
|                                    | <b>Graduate Student Researcher</b>  | Sep 2014 to present   |
|                                    | <ul style="list-style-type: none"><li>• FPGA Acceleration of Data-flow-based Computer Vision Algorithms</li><li>• High-performance Computer Vision Processing for the Open Web Platform</li><li>• Performance Assessment of WebRTC implementations</li></ul> Mozilla, Mountain View, CA   |   |
|                                    | <b>JavaScript Engineering Intern</b>  | Jun 2015 to Sep 2015  |
|                                    | <ul style="list-style-type: none"><li>• Improved SIMD.js support for SpiderMonkey JavaScript engine</li><li>• Vectorization of gl-matrix library with SIMD.js</li></ul>   |   |
| TEACHING AND MENTORING EXPERIENCES | <b>Mentor</b>   |   |
|                                    | <i>Google Summer of Code</i>  | Summer 2017   |
|                                    | <ul style="list-style-type: none"><li>• Helped mentoring two students participating in Google Summer of Code program towards completing their proposed projects for OpenCV organization.</li></ul>  |   |
|                                    | <i>UCI International Summer Undergraduate Research</i>  | Summers 2016 and 2017   |
|                                    | <ul style="list-style-type: none"><li>• Proposed research projects for undergraduate interns</li><li>• Supervised undergraduate students from Korean universities in completing proposed projects</li></ul>   |   |
|                                    | <b>Teaching Assistant</b>   |   |
|                                    | <ul style="list-style-type: none"><li>• Introduction to Computer Organization, UC Irvine</li><li>• Discrete Mathematics for Computer Science, UC Irvine</li><li>• Principles of Operating Systems, UC Irvine</li><li>• Data Structures, UC Irvine</li></ul>   |   |
| SELECTED PROJECTS                  | <ul style="list-style-type: none"><li>• OpenCV.js: OpenCV in JavaScript: Targets WebAssembly and supports parallel processing using SIMD and parallel workers. It also comes with proper JavaScript bindings and extensive set of online tutorials and documentation.<br/>Available at <a href="https://github.com/ucisysarch/opencvjs">https://github.com/ucisysarch/opencvjs</a></li><li>• AFFIX: A tool to generate efficient heterogeneous FPGA-accelerated implementation from OpenVX based computer vision algorithms.</li><li>• A benchmark for performance assessment of different WebRTC implementations.<br/>Available at <a href="https://github.com/ucisysarch/WebRTCBench">https://github.com/ucisysarch/WebRTCBench</a></li><li>• SIMD.js vectorization for gl-matrix.<br/>Available at <a href="https://github.com/toji/gl-matrix">https://github.com/toji/gl-matrix</a></li></ul> |   |

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| SKILLS AND TOOLS   | <ul style="list-style-type: none"> <li>• <b>Programming Languages:</b> Functional: {Haskell}, Imperative: {Python, JavaScript, C/C++, Rust, and Java}</li> <li>• <b>Web Standards:</b> WebRTC, WebAssembly, SIMD.js</li> <li>• <b>Software Development Productivity:</b> CMake, Git and GitHub</li> <li>• <b>Hardware Design and Verification:</b> OpenCL, Verilog, SystemC and TCL scripting</li> <li>• <b>Scientific:</b> SAT solvers and integer programming optimization toolkits</li> <li>• <b>Machine Learning and Data Mining:</b> Caffe, Pytorch, Weka</li> <li>• <b>Office Productivity:</b> L<sup>A</sup>T<sub>E</sub>X and PGF/TikZ 🐉</li> <li>• <b>Algorithmic Programming and Problem Solving</b> Participated in numerous ACM ICPC events</li> </ul>   |   |
| RESEARCH INTERESTS | Programming Languages and Compilers<br>Web Technologies  | Computer Vision Acceleration<br>CONFERENCE PAPERS |
|                    | <p>[1] <b>S. Taheri</b>, P. Behnam, E. Bozorgzadeh, A. V. Veidenbaum, A. Nicolau, "AF-FIX: Automatic Acceleration Framework for FPGA Implementation of OpenVX Vision Algorithms", ACM/SIGDA Symposium on Field-Programmable Gate Arrays (FPGA) 2019.</p> <p>[2] <b>S. Taheri</b>, J. Heo, P. Behnam, A. V. Veidenbaum, A. Nicolau, "Acceleration Framework for FPGA Implementation of OpenVX Graph Pipelines", IEEE Field-Programmable Custom Computing Machines (FCCM) 2018.</p> <p>[3] <b>S. Taheri</b>, 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.</p> <p>[4] P. Behnam, B. Alizadeh, <b>S. Taheri</b>, M Fujita, "Formally analyzing fault tolerance in datapath designs using equivalence checking", Asia and South Pacific Design Automation Conference (ASP-DAC) 2016.</p> <p>[5] <b>S. Taheri</b>, L. Beni, A. V. Veidenbaum, A. Nicolau , R. Cammarota, Jianlin Qiu, Qiang Lu and M. Haghighat, "WebRTCBench: Performance Assessment of WebRTC Implementations", ACM/IEEE Embedded Systems for Real-time Multimedia (ESTIMEDIA) 2015.</p> |   |
| MAGAZINE ARTICLES  | <p>[6] <b>S. Taheri</b>, 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. Syndicated by EE Times.</p>   |   |
| OTHER              | <p>[7] <b>S. Taheri</b> <a href="#">Bringing the Power of SIMD.js to gl-matrix</a>, Mozilla Hacks Blog, 2015.</p>  |   |
| 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  | Fall-Winter 2016                                  |
| REFERENCES         |  |   |

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