Sajjad Taheri

Contact Information

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Education

University of California, Irvine (School of ICS), Irvine, CA

P.hD. in Computer Science 2013-2018 expected

University of Tehran (School of ECE), Tehran, Iran

B.Sc. and M.Sc. in Computer Engineering 2005-2013

Professional Experiences

UC Irvine, Irvine, CA

Graduate Student Researcher Sep 2014 to present

- FPGA Acceleration of Data-flow-based Computer Vision Algorithms
- High-performance Computer Vision Processing for the Open Web Platform
- Performance Assessment of WebRTC implementations

Mozilla, Mountain View, CA

JavaScript Engineeing Intern Jun 2015 to Sep 2015

- Improved SIMD support for SpiderMonkey JavaScript engine
- Vectorization of gl-matrix library with SIMD.js

Teaching and Mentoring Experiences

Mentor

Google Summer of Code Summer 2017

- Helped mentoring two students participating in Google Summer of Code program towards completing their proposed projects for OpenCV organization.

UCI International Summer Undergraduate Research Summers 2016 and 2017

- Proposed research projects for undergraduate interns
- Supervised undergraduate students from Korean universities in completing proposed projects

Teaching Assistant

- Introduction to Computer Organization, UC Irvine
- Discrete Mathematics for Computer Science, UC Irvine
- Principles of Operating Systems, UC Irvine
- Data Structures, UC Irvine

Skills and Tools

- **Programming Languages**: Python, JavaScript, C/C++, Rust, Java
- **Software Development Productivity**: CMake, Git and GitHub
- **Hardware Design and Verification**: OpenCL, Verilog, SystemC and TCL scripting
- **Scientific**: SAT solvers and integer programming optimization toolkits
- **Machine Learning and Data Mining**: Caffe, Pytorch, Weka
- **Office Productivity**: LaTeX and PGF/TikZ
- **Algorithmic Programming and Problem Solving** Participated in numerous ACM ICPC events

Research Interests

Computer Vision | Architecture and Compilers
Web Technologies | Programming Languages

Publications

[1] **S. Taheri**, P. Behnam, A. V. Veidenbaum, A. Nicolau, "AFFIX: Automated Acceleration Framework for FPGA implementation of Vision based OpenVX Algorithms", Submitted to ACM/SIGDA FPGA'19.

[2] **S. Taheri**, J. Heo, P. Behnam, A. V. Veidenbaum, A. Nicolau, "Acceleration Framework for FPGA Implementation of OpenVX Graph Pipelines", IEEE FCCM'18.

[3] **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. **Syndicated by EE Times.**

[4] **S. Taheri**, A. V. Veidenbaum, A. Nicolau, N. Hu, and M. Haghighat, "OpenCV.js: Computer Vision Processing for the Open Web Platform", ACM MMSys'18.

[5] P. Behnam, B. Alizadeh, **S. Taheri**, M Fujita, "Formally analyzing fault tolerance in datapath designs using equivalence checking", ASP-DAC'16.

[6] **S. Taheri** Bringing the Power of SIMD.js to gl-matrix, Mozilla Hacks Blog, 2015.

[7] **S. Taheri**, L. Beni, A. V. Veidenbaum, A. Nicolau , R. Cammarota, Jianlin Qiu, Qiang Lu and M. Haghighat, "WebRTCBench: Performance Assessment of WebRTC Implementations", ACM/IEEE ESTIMEDIA'15.

Presentations

Improving OpenVX Application Development and Optimization Process for FPGAs
Systems, Intel, Santa Clara. May 2017

Selected Projects

- OpenCV.js: OpenCV in JavaScript.
  Available at `https://github.com/ucisysarch/opencvjs`
- SIMD.js vectorizaion for gl-matrix.
  Available at `https://github.com/toji/gl-matrix`
- An optimizable compiler for PL241 language: Developed from scratch without using thrid-party libraries, includes SSA-based optimizations, linear scan register allocation, and code generation. Available at `https://github.com/sajjadt/pl241compiler`
- A benchmark for WebRTC implementations.
  Available at `https://github.com/ucisysarch/WebRTCBench`

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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Computer Science Department
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