

JOSEPH PUSDESIS

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(586) 436-0047

Education

University of Michigan, Ann Arbor M.S.E. in Computer Science Engineering	GPA: 4.0/4.0	Fall 2012 – Fall 2013 (3 semesters)
University of Michigan, Ann Arbor B.S.E. in Computer Engineering	GPA: 3.7/4.0 Major GPA: 3.9/4.0	Fall 2009 – Winter 2012 (6 semesters)

Employment

ARM, Design Engineer Winter 2014 - Present
Worked with the performance team on the ARM Cortex-A57, ARM's flagship 64 bit core.

University of Michigan, Research Assistant Fall 2010 - Winter 2014
Developed simulation and compiler infrastructure for new instruction sets, virtual machines, and microarchitectures. Ran experiments to correlate simulation and real hardware. Collaborated often with ARM research engineers. Managed a simulation cluster. Worked with Professor Trevor Mudge.

ARM, Research Intern Summer 2012
Explored the design of an accelerator interface IP block, exploration included software stack, hardware stack, and offload granularity. Discovered inconsistencies in program characteristics when running on hardware against simulation.

Qualcomm, Engineering Intern Summer 2011
Profiled, characterized, and optimized the dynamic memory allocation algorithms for the next generation of modems on a variety of targets including ARM11 and QDSP6.

Qualcomm, Engineering Intern Summer 2010
Designed and implemented a new platform for the automated testing of camera and camcorder sensors. This includes physical hardware interfaces, testing procedures, and a Perl programming interface.

Technical Summary

Expert on

- Programming languages: C and Forth
- Hardware description: Verilog
- Machine programming: G-code CNC, Parker 6k, and Parker Vi

Experience with

- Programming languages: D, C++, Java, Javascript, Lua, Perl, Python, and Scheme
- Assemblies: Alpha, ARM, MIPS, SPARC, QDSP6, and x86
- Profiling: Perf, ARM DS-5, Gprof, Oprofile, SystemTap, and hand-written kernel modules
- Debuggers: Gdb, Trace32, and Valgrind
- Graphic Design: CSS, Gimp, HTML, Illustrator, Inkscape, and the Adobe Suite

Patents

Joseph Pusdesris, Benjamin Vandersloot, Yiping Kang, Andrea Pellegrini, and Trevor Mudge. "Data Processing Apparatus with Memory Rename Table for Mapping Memory Addresses to Registers." Filed

Joseph Pusdesris, Trevor Mudge, and Thomas Manville. "A Data Processing Apparatus and Method for Decoding Program Instructions in Order to Generate Control Signals For Processing Circuitry of the Data Processing Apparatus." US 13/363,606 Filed April 17, 2012

Publications

Joseph Pusdesris, Benjamin VanderSloot, Trevor Mudge. "A Memory Rename Table to Reduce Energy and Improve Performance" To appear in the International Symposium on Low Power Electronics and Design (ISLPED 2014).

Anthony Gutierrez, **Joseph Pusdesris**, Ronald G. Dreslinski, Trevor Mudge, Chander Sudanthi, Christopher D. Emmons, Mitchell Hayenga, and Nigel Paver. "Sources of Error in Full-System Simulation" In the proceedings of the 2014 IEEE International Symposium on Performance Analysis of Systems and Software (ISPASS), pages 13-22, Monterey, CA, USA, 2014 (**Best Paper Award**).

Anthony Gutierrez, **Joseph Pusdesris**, Ronald G. Dreslinski, and Trevor Mudge. "Lazy Cache Invalidation for Self-Modifying Codes" In the proceedings of the 2012 International Conference on Compilers, Architecture and Synthesis for Embedded Systems (CASES), pages 151-160, Tampere, Finland, 2012.

Awards and Honors

University of Michigan Department of Computer Science First-Year Fellowship

Open Source Projects

Returnless

<http://pusdesris.googlecode.com/files/returnless.zip>

An esoteric programming language

2008

Project owner