

dan.luu@gmail.com

EXPERIENCE

- Google, Senior Engineer; Madison, WI** **2013 – 2014**
- ◊ Exploratory hardware/software co-design; details confidential *Verilog*
 - Took project from requirements gathering stage (2 people) to full implementation stage (~20 people)
 - ◊ Briefly consulted on a widget targeting 8-figure QPS on a single core *C++*
- Hacker School, Sabbatical; New York, NY** **Spring 2013**
- ◊ Projects include channels and coroutines in C and a BitTorrent client in Scala.
 - ◊ See <https://github.com/danluu/> and <http://danluu.com> for more.
- Centaur Technology (acquired by VIA), Member of Technical Staff; Austin, TX** **2005 – 2013**
- ◊ Here's one particular six-month project (adding an ARM front-end to our x86):
 - Helped reverse engineer the ARMv7 ISA (this was pre-AArch64)
 - Created architectural simulator and got Android running on it *C*
 - Implemented 1/2 of the translator, and wrote associated microcode *Verilog / Templating language*
 - Created test generator that found 90% of the first 1000 bugs on the project *F#*
 - Result was a circa 2010 ARMv7 processor with better performance than any current ARM processor
 - ◊ Other roles (often brief) included formal verification, adding fault tolerance to a distributed system, post-silicon debug, test tooling, etc.
- Ultrafast Optics and Fiber Communications Lab, Research Assistant; Lafayette, IN** **2003 – 2005**
- ◊ Lab work, included speeding up parallel (256 wavelength) polarimeter by 40x *MATLAB and C*
- IBM, Intern; Austin, TX** **Summer 2003**
- ◊ Semi-formal / constrained random POWER6 completion unit functional verification *VHDL*
- Micron Technology, Intern; Boise, ID** **Summer 2002**
- ◊ Flash product engineering / characterization. Automated previously manual tasks. *Perl*
- Spatial Systems Research Laboratory, Research Assistant; Madison, WI** **2001**
- ◊ Studied tilings and related combinatorial models, e.g., alternating sign matrices and square ice

EDUCATION

BS Math & CMPE (Wisconsin, '00-'03), MS EE (Purdue, '03-'05)

NON-WORK PROJECTS

- ◊ See <https://github.com/danluu/> and <http://danluu.com> for an exhaustive list
 - Sega system on Xilinx Vertex FPGA; translated Z80 instructions into RISC μ ops *Verilog and VHDL*
 - Experiments with a randomized algorithm as cache eviction policy *Dinero IV and SPEC*
 - A fuzzer written in an hour that found ~20 bugs in the Julia compiler and base libraries *Julia*
 - Formal verification of a secure hypervisor model *ACL2*

MISCELLANEOUS

- ◊ Languages: English mother tongue. Once-fluent Vietnamese. Once-functional (now moribund) Japanese and French. Willing (and eager) to learn any language
- ◊ Work Authorization: U.S. Citizen