dan.luu@gmail.com

EXPERIENCE

Senior Hardware/Software Engineer, Google; Madison, WI **2013 – 2014**

- ◇ Exploratory hardware/software co-design; details confidential —

Sabbatical, Hacker School; 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.

Member of Technical Staff, Centaur Technology (acquired by VIA); 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 *Internal 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.

Research Assistant, Ultrafast Optics and Fiber Communications Lab; Lafayette, IN **2003 – 2005**

- ◇ Sped up parallel (256 wavelength) polarimeter by 40x, from 50 Hz to 2 kHz *MATLAB and C*
- ◇ Designed and built Fourier transform spectroscopy interferometer *MATLAB and C*

Intern, IBM; Austin, TX **Summer 2003**

- ◇ Semi-formal / constrained random POWER6 completion unit functional verification *VHDL*

Intern, Micron Technology; Boise, ID **Summer 2002**

- ◇ Engineering hipster: worked on flash before it was cool *Perl*

Research Assistant, Spatial Systems Research Laboratory; Madison, WI **2001**

- ◇ Studied tilings and related combinatorial models, e.g., alternating sign matricies 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 μops *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