dan.luu@gmail.com*

OBJECTIVE

I want to work with smart people on a great team making awesome things, preferably in a big city

EXPERIENCE

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

- ◇ Hardware/software co-design for warehouse scale computers; details confidential —
- ◇ Order of magnitude latency improvement with multiple order of magnitude throughput improvement —

Student, Hacker School; New York, NY **Spring 2013**

- ◇ Implemented channels and coroutines, using setjmp/longjmp[1] *C*
- ◇ Created an actor based BitTorrent client, using akka[2] *Scala*
- ◇ Contributed to reverse engineering jslinux[3][4] *JavaScript*
- ◇ Macros and metaprogramming[5] *Julia*
- ◇ Unsupervised learning and deep learning[6] *MATLAB, Octave, and Julia*
- ◇ Miscellaneous other open source contributions[7][8][9] *Rust, Julia, Scala, etc.*

Member of Technical Staff, Centaur Technology (acquired by VIA); Austin, TX **2005 – 2013**

- ◇ Recent projects are confidential. Here's an older six-month project (adding an ARM front-end to our x86):
  - ○ Helped reverse engineer the ARMv7 ISA (this was pre-AArch64, and we didn't have an ARM license)
  - ○ 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 an ARMv7 processor with better performance than any current AAarch64 processor
- ◇ Other roles 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

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[1] https://github.com/danluu/setjmp-longjmp-ucontext-snippets
[2] https://github.com/danluu/storrent
[3] https://github.com/levskaya/jslinux-deobfuscated
[4] http://bellard.org/jslinux/
[5] https://github.com/danluu/funarg/
[6] https://github.com/danluu/UFLDL-tutorial
[7] https://github.com/JuliaLang/julia
[8] https://github.com/mozilla/rust
[9] https://github.com/xianyi/OpenBLAS

EDUCATION

Electrical and Computer Engineering **2009 - 2013**
University of Texas, Austin, TX

Just for fun. Mostly theory courses (Computational Learning Theory, Empirical Software Engineering, and Algorithms) and random research (Algorithmic Game Theory, Empirical Studies in Software Engineering)[10][11].

◇ GPA: 4.0

M.S.E. Electrical and Computer Engineering **2003 – 2005**
Purdue University, West Lafayette, IN

◇ GPA: 3.86 (4.0 in MS courses)

B.S. Math and B.S. Computer Engineering, with distinction **2000 – 2003**
University of Wisconsin, Madison, WI

◇ GPA: 3.61 (4.0 in upper-division and graduate level ECE courses)

NON-WORK PROJECTS

◇ Sega system on Xilinx Vertex FPGA; translated Z80 instructions into RISC μops[12] *Verilog and VHDL*

◇ S-99: Ninety-Nine Scala Problems[13] *Scala with JUnit*

◇ Formal verification of a secure hypervisor [14] *ACL2*

◇ Project Euler[15] *F# and bluespec*

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

[10] http://ieeexplore.ieee.org/xpl/articleDetails.jsp?tp=&arnumber=6083170, Evaluation & Assessment in Software Engineering (EASE 2011),

[11] Towards Evaluating Human-Instructable Software Agents, International Conference on Interfaces and Human Computer Interaction (ICIHCI 2011)

[12] https://github.com/danluu/sega-system-for-fpga

[13] https://github.com/danluu/ninety-nine-scala-problems

[14] https://github.com/danluu/secvisor-formal-verification

[15] https://github.com/danluu/Project-Euler