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   —

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 $\frac{1}{2}$ 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 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

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[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