# dan.luu@gmail.com[*]

OBJECTIVE

I want to work with smart people on a great team making awesome things

EXPERIENCE

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

⋄ Hardware/software co-design for warehouse scale computers      *SystemVerilog*

⋄ Created ad hoc CAD tools for burgeoning hardware group, e.g., static analysis and code generation      *Go*

**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**

⋄ The following is a typical six-month project (substituting a different ISA in our x86 processor):

     ○ Created architectural simulator and got Linux running on it      *C*

     ○ Implemented $^1/_2$ of the translator, and wrote associated microcode      *Internal templating language*

     ○ Helped reverse engineer the ISA

     ○ Created test generator that found 90% of the first 1000 bugs on the project      *F#*

⋄ 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 matrices and square ice

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[*]408-256-1284
[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 $\mu$ops[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]https://sites.google.com/site/deangelistech/publications/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