David Jeffrey Ljung Madison

Programming, Algorithm Design/Development, VLSI / CPU Verification

Version Info

Resume v4.6, released 2016-01-31.
Please get current source at: http://DaveSource.com/Resume/

Contact Info

Before contacting me, make sure you have an up-to-date resume.
I am not interested in full-time work unless it is flexible, and I am not interested in long-term relocating.

Recruiters: Use email, **DO NOT CALL**
Home: 415.341.5555 *(call between 11a-8p PST)*
Email: resumeMail@DaveSource.com

Work Experience

Verification Consultant, Bluechip Systems. May 2015 - Jan 2016.

- Verified secure communications between apps/device and an embedded SoC running a custom Linux on a custom CPU

Director of Verification, iCelero, LLC. Jul 2007 - Dec 2013.

- Managed verification for a complex, fully-custom processor under a very tight schedule
- Created complete toolchain and testbenches for entire CPU verification process, from block level to full-chip to SOC.
- Created highly sophisticated test packer/generator for VLIW CPU

Independent Consultant, DaveSource Consulting. Jul 2002 - Present.

Contractor for VLSI/Processor Verification and/or software design/implementation.

- CPU verification, formal verification tool design.
- Designed and implemented operations management algorithms. Order of magnitude improvement in runtime **and** savings.
- Custom image sorting software, custom web apps.

CPU Verification Engineer, Transmeta Corp. Jan 2000 - Jul 2002.

- Created cycle-accurate models (verilog, perl, scheme) of blocks
- Wrote pseudo-directed random test generators (verilog, scheme).
- Due to original formal verification techniques on blocks, all bugs were found pre-silicon.

CPU Verification Engineer, SandCraft Inc.. Jul 1998 - Jan 2000.

In charge of initial verification of the execute half of SR1/Montage CPU:

- Designed modular verilog/PLI testbench for blocks/fullchip, verified blocks
- Created majority of verification tool environment.

CPU Verification and Debug, VLSI Technology Lab, Hewlett-Packard. Aug 1994 - Jun 1998.

Post-silicon debug/tools:

- Created the entire tool chain from scratch (except for some random code generators), including boot code and test framework, controller/environment scripts, shmoo scripts, fail search/eval, etc..
- Hardware environmental testing and debug software
- Finding and debugging failures

Pre-silicon verification:

- Random code generators, test creation
- Test checkers and evaluators
- Tools writer

Other duties:

- Lab Resource: Unix, programming, scripting..
- Tool geek (wrote CAD tools, personnel tools, etc..)

Shareware Programmer, Marginal Hacks

I wrote many popular tools at Marginal Hacks, including the highly popular *album* software.

Publications

- CPU electrical verification, August 1997, HP Journal (as "David J. Ljung") [local copy]
- CPU Block verification using formal tools

Skills

Computer Languages

Fluent in C, Ruby, Perl, Java, Scheme, Verilog and many versions of Assembly. I often become the perl guru/resource wherever I work. I can do C++, but I'm not a fan.
Experience with: Lisp, Python, Basic, Fortran, sed, yacc, sh, ksh, zsh, csh, tcsh, etc..

Breaking things

I like to use things in new and interesting ways, this is one of the things that sets me out as a verification engineer. I have managed to break and find bugs in almost every tool I have used, such as:
gcc, cpp preprocessor, HPUX CC, HPUX linker, various assemblers, perl (2 so far), various shells (tcsh, ksh, ..), verilog simulators (VCS, ESP), rccs, etc..

Education

Degree: B.S. ECE/CS (Double major: Electrical Computer Engineering with Computer Option and Computer Science)
School: 1989-1994: University Of Wisconsin, Madison

Time's Person of the Year, 2006