

Shawn Nematbakhsh

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Work Status: US Citizen
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Summary

Talented software engineer with exceptional professional and academic background and demonstrated ability to thrive in fast-paced, deadline-oriented environments.

Qualifications

- Three years of software development experience in industry.
 - Strong knowledge of C++, Perl, Java, web development, embedded C and VHDL.
 - M.S. degree in Computer Science with research focus on embedded hardware/software co-design.
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Skills

- **Languages:** C, C++, Perl, Python, Java, VHDL, Verilog, SystemC, C#, Javascript, SQL, 8052 assembly, PHP.
 - **Development Tools:** gcc, gdb, Xilinx ISE, ModelSim, MPLAB, CCS PIC, KEIL C51, Visual C#.NET, VxWorks Tornado, Eclipse.
 - **Hardware:** PIC 16 / 18 Microcontrollers, Xilinx Spartan / Virtex FPGAs, 8051 / 8052, PC104 + VxWorks.
 - **Misc:** Linux Sysadmin (Red Hat / CentOS), MySQL, Apache, Ethereal / Wireshark, Cisco IOS.
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Professional Experience

- **Software Engineer Jul. 2006 - Current MedLink Healthcare Networks, Los Angeles, CA**
 - Designed and maintained database-driven web site used for hundreds of daily patient referrals from partner firms.
 - Lead programmer for electronic referral project allowing for automatic exchange of data in EDI and XML format.
 - Created Perl scripts to scan for mis-entered and duplicate database entries and automatically make corrections.
- **Embedded Software Engineer Mar. 2005 - Jul. 2006 DNF Controls, Los Angeles, CA**
 - Designed and programmed a custom control keyboard consisting of 40 multi-line LCD keys. Keyboard used to control and switch between video feeds for a major broadcast network.
 - Implemented RS422 / RS232 Advanced Media Protocol (AMP) in assembly for control of Thompson Grass Valley video servers on 8052 controller platform.
 - Created VxWorks web-accessible applications to configure and monitor controller hardware status and control video playback.
 - Wrote Windows applications in C# to interface with embedded controllers over RS232 serial allowing for retrieval of runtime history from controllers.
 - Developed and maintained FPGA and PIC microcontroller code for peripheral control and glue logic on embedded PC104 systems.
- **Research Assistant Apr. 2002 - Mar. 2005 U.C. Riverside, Comp. Sci. Dept., CA**
 - Designed custom modular monitor / control embedded devices for eBlocks project. Created a wide range of eBlock components such as DTMF phone dialer, Ethernet interface and PalmOS PDA interface. Performed power analysis and fault testing of eBlock components.
 - Wrote an eBlock simulator and schematic capture Java Applet for simulation and synthesis of eBlock systems.
 - Performed hardware / software partitioning on source code of SPEC benchmarks. Profiled execution of benchmarks to determine critical code segments, re-writing these segments in VHDL for implementation on a SOC device, measuring speedup compared with software implementation.
- **Teaching Assistant Sept. 2003 - Mar. 2005 U.C. Riverside, Comp. Sci. Dept., CA**
 - Lead teaching assistant for senior-level embedded systems class, overseeing 2-4 other TAs assigned to class.
 - Taught weekly laboratories and wrote lab assignments still in use today.
 - Won Outstanding Teaching Assistant of the Year award for 2003-2004 school year.

- Built and maintained VMware image consisting of EDA tools for use in embedded systems laboratories.
 - Tested and repaired damaged Xilinx Spartan2 FPGA development boards.
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Education

- **University of California, Riverside**

M.S. Computer Science, 2005

GPA: 3.7

Thesis: *External Interfaces and Software Tools for Electronic Blocks*

- **University of California, Riverside**

B.S. Computer Science, 2003

GPA: 3.7. Graduated Cum Laude

Project: *UNIX Password Cracking With FPGAs*

Publications

- G. Stitt, F. Vahid, S. Nematbakhsh - "Energy savings and speedups from partitioning critical loops to hardware in embedded systems". *ACM Transactions on Embedded Computing Systems (TECS)*, Feb. 2004.
 - S. Nematbakhsh, F. Vahid, G. Stitt - "The Effect of FPGA Size on Software Speedup from Hardware / Software Partitioning". Technical Report, University of California Riverside, 2003.
 - S. Nematbakhsh - "External Interfaces and Software Tools for Electronic Blocks". Master Thesis, University of California Riverside, 2005.
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Keywords

Software Engineer, Software Developer, Embedded Software Engineer, Embedded Developer, Programmer, Bachelors Degree, Masters Degree, Research Experience, R&D, C, C++, Java, Perl, Linux, MySQL, Database, Apache, LAMP, Startup Experience, Web Development.
