
David I. Lehn

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Professional Objective

Obtain a computer hardware engineering or software engineering position with a desire to involve open source, use dynamic languages such as Python, and/or improve the state of the art in high performance computing or "green" technologies.

Education

Ph.D. (incomplete) in Computer Engineering, August 2002–December 2005
Virginia Polytechnic Institute and State University (Blacksburg, Virginia)
Postponed completion of proposed dissertation: *Hierarchical Software Service Architectures for Electronic Textile Applications*. All course requirements were completed.

M.S. in Computer Engineering, August 1997–May 2002
Virginia Polytechnic Institute and State University (Blacksburg, Virginia)
Thesis: *Framework for a Context-Switching Run-Time Reconfigurable System*

B.S. in Computer Engineering (minor in Computer Science), August 1993–May 1997
Virginia Polytechnic Institute and State University (Blacksburg, Virginia)

Skills

Programming Languages: Python, C, sh, VHDL, Java.

Hardware Platforms: e-textiles, configurable computing systems / FPGAs, Atmel AVR (hardware/software), Microchip PIC (hardware/software).

Free Software: Debian, GNU/Linux, GNOME, Inkscape, GIMP, Vim.

Minor Skills: LaTeX, Objective-C, C++, Motorola HC11.

Employment History

President and Co-Founder — Virginia Electronic Textile Systems, LLC (Blacksburg, Virginia)
2004–Present

Founded a startup to commercialize e-textile technologies from the academic research environment.

- Awarded a NSF SBIR Phase 1 grant for *An Electronic Textile System for Gait Analysis*, January - June, 2005.
- Developed e-textile gait analysis systems and algorithms.
- Successful collaboration with the Virginia Tech E-Textile Laboratory and the Virginia Tech Locomotion Research Laboratory.

Graduate Research Assistant — Virginia Tech E-Textiles Lab (Blacksburg, Virginia)
August 2002–December 2003, August–December 2004

Performed research in the largely unexplored e-textile field integrating wearable fabric, computing elements, and sensors.

- Design and fabrication of e-textile hardware technologies (fabric design, sensor circuit boards, fabric attachment technologies)
- Design and implementation of e-textile software (simulation tools, distributed sensor network command and

control, data collection, and analysis algorithms)

Intern Design Engineer — Intransa, Inc. (Blacksburg, Virginia)
May 2002–August 2002

Assisted in numerous network storage system hardware and software development tasks.

- Development of software tools and hardware test code
- Prototype integration of a Xilinx MicroBlaze processor core into an existing FPGA design

Graduate Research Assistant — Virginia Tech Configurable Computing Lab (Blacksburg, Virginia)
August 1997–May 2002

Performed configurable computing research using commercial and prototype hardware.

- Explored novel configurable computing hardware and algorithms
- Developed multiple application frameworks for for run-time reconfigurable hardware systems using Java, Python, C, VHDL, and JHDL
- Exposure to various configurable logic hardware and software tools
- Developed Python unit test system to debug hardware

Software Developer — DynCorp, Inc. (Arlington, Virginia)
Summers of 1993, 1994, 1995, and Winter 1995

Developed software programming skills writing office productivity tools.

- Developed and maintained suite of integrated paperless office tools
- Objective-C Object Oriented programming under NEXTSTEP
- Multi-user distributed applications
- Object exchange between Java and Objective-C over TCP/IP
- GUI design

Interests and Activities

- **Membership:** IEEE member since 1995
- **Contributor to Open Source Multimedia Projects:** Linux DVD support advocacy in LiViD group — Contributor to GStreamer multimedia framework — Initial author of various GStreamer components required for DVD playback — Initial author of GStreamer Python bindings — Minor development on a52dec (decoder for ATSC A/52 / AC-3 audio) and mpeg2dec (decoder for MPEG-2 video)
- **Free Operating Systems:** Debian user and administrator since mid-1990s — Debian Developer since 2003 — Initial Debian package maintainer of mpeg2dec and GStreamer
- **Web Applications:** Development of wiki-based web sites

Selected Publications

- David I. Lehn, Craig W. Neely, Kevin Schoonover, Thomas L. Martin, Mark T. Jones. "e-TAGs: e-Textile Attached Gadgets". *Proceedings of the Communication Networks and Distributed Systems Modeling and Simulation Conference*. January 2004.
- Kiran Puttegowda, David I. Lehn, Jae H. Park, Peter Athanas, Mark Jones. "Context Switching in a Run-Time Reconfigurable System". *The Journal of Supercomputing, Volume 26 Issue 3*. November 2003.
- David I. Lehn, Rhett D. Hudson, Peter M. Athanas. "Framework for architecture-independent run-time reconfigurable applications". *SPIE Proceedings, Vol. 4212: Reconfigurable Technology: FPGAs for Computing and Applications II*. John Schewel, Peter M. Athanas, Chris H. Dick, John T. McHenry; Ed.. November 2000. 162-172.
- Rhett D. Hudson, David Lehn, Jason Hess, James Atwell, David Moye, Ken Shiring, Peter M. Athanas. "Spatio-Temporal Partitioning of Computational Structures onto Configurable Computing Machines". *SPIE Proceedings, Vol. 3526: Configurable Computing: Technology and Applications*. John Schewel; Ed.. October 1998. 62-71.