Resume of Dianne Skoll

Education

September 1994: M.Eng degree in Electronics at Carleton University, Ottawa, Ontario. Thesis title was "Delay and Power Macro-Models for Optimizing ECL Circuits."

April 1990: B.Eng degree in Electrical Engineering from Memorial University of Newfoundland, St. John's, Newfoundland.

Technical Experience:

Software:

- Languages: BASIC, Pascal, FORTRAN, REXX. Extensive experience with C, C++, Lisp, Tcl, PHP and Perl. Assembly language for the 6809, 80x86 and TMS34010 processors.
- Tools: CVS, Subversion and Git source code control systems, LaTeX, make and imake, gcc, g++, gdb and ddd (debuggers).
- Environments: Over 25 years UNIX programming experience including SunOS, Solaris, FreeBSD and Linux. Extensive X Window System experience.
- Familiar with object-oriented design and analysis. Designed and implemented three large software projects using the UML methodology.

Hardware:

- Microcomputer design (6809 and 8088 processors).
- Extensive IC layout experience (CMOS standard cells and ECL full-custom layout.)

- Familiar with Cadence Edge and Opus/Analog Artist tools. Familiar with HSPICE analog simulator. Some ASIC design during graduate studies – designed, laid out and tested an ECL dual-modulus divider which divides by 2 or 2.5 directly. Laid out and simulated an 8- by 10-bit CMOS Booth multiplier.

Communication:

- Lead author of "Caldera OpenLinux Unleashed", SAMS, 2000.
- I wrote the monthly *LinuxSTUFF* column for *Monitor Magazine*, an Ottawa computer magazine.
- Wrote over 400 pages of well-received documentation for a large software package. Also wrote all the manuals for Roaring Penguin's CanIt product line.
- Comfortable with public speaking and giving seminars. Some seminar experience during graduate studies.
- Three published papers and several magazine articles.
- Considerable experience performing improv and standup comedy; some sketch comedy performance experience.

Work Experience:

March 2018 to present Director of Operations (Ottawa) for AppRiver, LLC which purchased Roaring Penguin Software Inc. My current job role consists mostly of continuing to develop email security products.

March 2003 to March 2018 Founder and president of Roaring Penguin Software Inc. Since March 2002, Roaring Penguin has changed focus and concentrated on the development of CanIt, an email security system.

March 1999 to March 2002: Founder and president of Roaring Penguin Software Inc., an Ottawa-based Linux consulting firm. Services include:

- Custom software development, especially in scientific and engineering fields.
- Network design and setup.
- Web, e-mail and FTP server configuration.

January 1997 to March 1999: R&D Project Leader, Chipworks, Inc., Ottawa, Ontario. Responsible for designing and implementing software to help automate the reverse-engineering of state-of-the-art integrated circuits.

The components of the reverse-engineering software included:

- Image Acquisition Station (SPARC/Solaris and Intel/Linux). This includes software to control a motorized stage and generate photo-mosaics from a digital camera. Also wrote the camera interface software for Linux.
- Design Analysis Workstation (Intel/Linux and Alpha/Linux). Includes software to view and align mosaics, a database of annotations, simple connectivity extraction tools, and simple image processing tools. Working on a mechanism to distribute image-processing computation to various nodes on a local-area network.
- Automatic Shape Recognition (still in research phase). Includes software to extract a layout database from digital images.

February 1996 to December 1996: Design Analysis Engineer, Chipworks, Inc., Ottawa, Ontario. Duties included reverse-engineering integrated circuits and writing reports based on analysis of extracted circuitry. Also wrote a Perl program to cross-reference signal names in a reverse-engineering project.

September 1994 to January 1996: Product Architect at Cadabra Design Libraries, Nepean, Ontario. Designed and implemented most of the CLASSIC-SC Standard Cell Compiler, which accepts SPICE netlists and produces CMOS cell layouts automatically.

I designed and implemented algorithms to perform the cell generation, including the following modules: A C++ garbage-collector, an object-oriented language and interpreter for expressing layout constraints and guiding the layout synthesis; a means of expressing technology-based design rules; a flexible means of expressing constraints due to particular layout styles; a

symbolic database to represent MOSFETs, wires, contacts and other layout features; a system to place transistors automatically; an automatic router for completing cell routing; and a basic C++ templated class library of lists, hash tables, dictionaries, and priority queues.

I was also heavily involved in developing algorithms to analyze transistor netlists during pre-placement transistor grouping, and in the design of a true two-dimensional compactor to compact the final layout. In addition, I wrote all of the users' documentation for the system.

June 1990 to August 1992: Research Engineer in the Department of Electronics, Carleton University. Developed the Picasso II silicon compiler, a CMOS cell synthesis tool and the prototype of LILA-SC. Developed and implemented algorithms for transistor placement, routing and compaction. Wrote an X Windows graphical user-interface for the system. Also did some system administration of a SunOS network.

Co-op Placements

September to December 1989: Co-op student at IDON Corporation, Ottawa, Ontario. Developed an image storage and retrieval system. Duties included implementing software to read and display TIFF files using CCITT-3 and PackBits decompression. Also developed SQL routines for keeping track of image files. Helped integrate the system with a full-text search engine and character-recognition hardware.

January to April 1989: Worked at the Advanced Technology Department, Microtel Pacific Research, Burnaby, B.C. Duties included implementing a K-means algorithm to quantize a full-color image. The software was implemented in TMS34010 assembly language. Also wrote a graphical user interface running under MS-DOS on an ATVista graphics card.

May to August 1988: Worked in the DPN Hardware Development Department, Bell-Northern Research (now Nortel), Ottawa, Ontario. Duties included testing and debugging circuit boards, running thermal and mechanical stress-tests on equipment, and developing a database system for tracking changes to circuit designs.

September to December 1987: Worked in the DMS User Part Development Department, Bell-Northern Research, Ottawa, Ontario. Duties included program maintenance and the development of a data integrity verification program on the DMS-100 telephone switch.

January to April 1987: Worked at James F. Hickling Management Consultants Ltd., Ottawa, Ontario. Duties included designing and implementing a database system on a local-area network. The system was designed to interface with several popular word-processors and spreadsheets, thus centralizing the storage of financial data. Other duties included writing a keyword search program to search and index employee resumes, and running a simulation of enemy fire upon an armored personnel carrier.

August 1986: Wrote a CAD package under MS-DOS for Systemes ForeTruss, Gatineau, Quebec. The system produced drawings of roof trusses and verified that the joint plates were sufficiently large for the specified load.

May to August 1986: Worked in the Systems Engineering Department, Transport Canada, Ottawa, Ontario. Duties included installing and maintaining a computerized project-management system and writing, testing and debugging several supporting software packages.

Publications

- D. Skoll and M. C. Lefebvre, "A Modified Maze Routing Algorithm for Leaf Cell Synthesis", *Proceedings, 1992 Canadian Conference on VLSI*, October 1992.
- M. C. Lefebvre and D. Skoll, "Picasso II: A CMOS Leaf Cell Synthesis System", *Proceedings, MCNC International Workshop on Layout Synthesis*, May 1992.
- D. Skoll, "A PPPoE Implementation for Linux", *Proceedings, 2000 Atlanta Linux Showcase*
- Lead author of "Caldera OpenLinux Unleashed", SAMS, 2000.

Patents

- US Pat. 6,453,063, 17 September 2002, "Automatic focused ion beam imaging system and method", Phaneuf et al. (I am named as a co-inventor.)
- US Pat. 6,549,222, 15 April 2003, "Lock-step cursors for feature alignment", Skoll.
- US Pat. 6,671,424, 30 December 2003, "Predictive image caching algorithm", Skoll et al.
- US Pat. 6,684,379, 27 January 2004, "Design analysis workstation for analyzing integrated circuits", Skoll et al.
- US Pat. 6,768,102. 27 July 2004, "Method and system for recalibration during micro-imaging to determine thermal drift", Skoll.
- US Pat. 6,763,140, 13 July 2004, "Method and apparatus for focusing a micro-imaging system onto a tilted or uneven sample to acquire images of the sample", Skoll.
- US Pat. 7,020,853, 28 March 2007, "Design analysis workstation for analyzing integrated circuits", Skoll et al.
- US Pat. 7,509,601. 24 March 2009, "Design analysis workstation for analyzing integrated circuits", Skoll et al.

Scholarships and Awards

November 1994: Carleton University Senate Medal for outstanding academic achievement.

June 1990: NSERC 1967 Science and Engineering award.

April 1990: Award for best Term 8 electrical engineering project, Memorial University of Newfoundland.

April 1990: Association of Professional Engineers of Newfoundland award for excellence.

March 1988: Government of Newfoundland Career Development Award.

August 1986: Government of Newfoundland Senior Jubilee Award.