**GEOFFREY S. KNAUTH**

Williamsport, PA -- geoff@knauth.org

**Summary:** 38 years building applications and systems of every stripe. 19 years building web-based systems. Four years college teaching experience. My primary motivation is doing things that matter.

**Skills:** C/C++, Scala, Java, Racket, Lisp, Python, Perl, Ruby, JavaScript, Objective-C, Smalltalk, TeX. Oracle, PostgreSQL, MySQL, XML, web programming. GNU/Linux, Mac OS X, BSD, Solaris, Windows.   
**Learning:** OCaml, Haskell, Clojure, F#, Erlang, JavaScript Frameworks, Android/iPhone SDKs, C#, ASP.NET, Squeak, Dart, Go, Rust.

**PROFESSIONAL EXPERIENCE**

**Contracting**

* **Calltrunk**, London, UK. 03/13-07/13. Django support & Python scripting.
* **Discovery Machine, Inc.**, Williamsport, PA. 01/12-05/12. Artificial Intelligence research & development in natural language understanding.
* **Various startups.** Android & iOS. 10/10-12/11 Games, social media, search & rescue.

**Ringleader Digital,** New York, NY 06/10-10/10 *Senior Software Engineer*

* Implemented back-end C# parallel scalability performance optimizations working with SQLServer. Coded jQuery front-end enhancements. Mobile advertising platform. (Start-up closed.)

**Lycoming College,** Williamsport, PA 08/06-05/10 *Computer Science Instructor*

* Taught: Introduction to Computer Science, Principles of Advanced Programming, Programming Language Design, Database Systems, Computer Networks, Introduction to Web-based Programming, Web-based Programming, Computer Organization / Machine Language, Introduction to Robotics.

**Interactive Supercomputing,** Waltham, MA 05/06-08/06 *Contractor*

* Optimized GNU Octave performance for parallel supercomputing.

**SFA, Inc.,** Virginia Beach, VA 1/04-2/06 *Senior Software Engineer*

* Helped SFA understand legacy military logistics application code I'd written or known, and associated business rules, to help SFA reshape the project using only Java and Oracle.

**BAE Systems,** Rockville, MD 5/02-12/03 *Systems Analyst*

* Continuing support and development of web-based military logistics system originally built at BBN.
* Reworked architecture to comply with latest DoD security requirements.

**BBN Technologies, Distributed Systems & Logistics, Verizon,** Cambridge, MA 10/95-5/02 *Senior Systems Engineer* (Band 2L)

* Developed web-based military logistics system that saved U.S. Government $70 million and reduced processing time from 3-4 months to 5-10 minutes, using C, Perl, Java, C++, Scheme and Oracle.
* Adapted DARPA Cougaar intelligent agents to simulate fine-grained Bulk Fuels logistics problems.
* Helped launch successful advertising technology spinoff, Unicast Communications.

**Marble Associates, Inc.,** Waltham, MA 12/91-9/95 *Senior Associate*

* Developed globally distributed Wall Street emerging markets trading system.
* Wrote ParcPlace and Digitalk Smalltalk applications for two Fortune 100 clients.
* Converted financial aid mainframe system to client/server technology and Sybase.
* Made database-building compiler enhancements to speed understanding of large software projects.
* Developed API for DecisionBuilder 1#1 , a Bayesian analysis tool with superior graphics and algorithms.
* Made kernel module enhancements for Teleconnect 1#1 SLIP connectivity software.

**Camex/DuPont Printing & Publishing,** Boston, MA 11/87-11/91 *Senior Programmer*

* Source code “owner” of Sun-based flagship Breeze product, a display ad graphic workstation used to assemble pages for large metropolitan newspapers. Supervised work of 15 developers.
* Internationalized the Breeze product, which held 75% international market share.

**Envoy Systems Corp.,** Waltham, MA 12/86-11/87 *Programmer*

* Developed pioneering salesforce automation applications for Fortune 500 clients, distributing sales and inventory information from Oracle databases on corporate minicomputers to the first laptops.

**Independent Software Developer and Contractor,** Cambridge, MA 1/86-12/86

* WX Ltd., Jericho, VT. Wrote satellite weather data acquisition and analysis applications on IBM PC-ATs running DOS and Xenix.
* Garland Corp., Brockton, MA. Provided external code review. AT&T 3B2, Vax.
* Houghton Mifflin Co., Boston, MA. Put Swedish language database on IBM PC-AT.
* Harvard Graduate School of Education, Cambridge, MA. Administrative work on IBM PCs.

**Intentional Educations,** Watertown, MA 6/82-1/86 *Systems Manager and Programmer*

* Coordinated technical efforts of educational software company. Maintained a CompuStar network, Macintosh and Apple II computers, wrote C interfaces to Varityper, supported courseware developers.

**Nicholson Yacht Charters,** Antigua, West Indies, and Cambridge, MA 1978-1984 *Software Developer*

* Created accounting and scheduling applications for a yacht charter business, on the Sol 20, North Star Horizon, and IBM PCs. Volunteer pilot on search and rescue flights. Assisted French consul with translations, group visits and diplomacy.

**EDUCATION**

* **Harvard College '83, A.B.,** Cambridge, MA 9/79-8/85
* Concentration: Economics. Extensive coursework in Slavic Languages and Literatures. Varsity Letter, Men's Heavyweight Crew.
* **Choate Rosemary Hall,** Wallingford, CT 1975-1978
* President Computer & Chess Clubs. Began programming in 1975. Russian prize. Crew Captain.

**ADDITIONAL EDUCATION**

* **Harvard Extension School,** Cambridge, MA 1987-1989, 2004-2008
* Graduate courses in Computer Science, Artificial Intelligence, Advanced Computer Graphics, Electronic Publishing, German.
* **Northeastern University,** Boston, MA 1986
* Graduate course in Unix Systems Programming.

**ONGOING EDUCATION (MOOC)**

* Machine Learning, Artificial Intelligence, Programming Language Design, iPhone/iPad Software Development, Functional Programming in Scala, Introduction to Systematic Program Design, Introduction to Recommender Systems (*in progress*).

**PUBLIC DISCOURSE**

**Lycoming College Math Colloquia,** Williamsport, PA

* *The Many Uses of R,* 02/13
* 2010 Math Awareness Day speaker (8th graders), *Mathematics of Mapping,* 03/10
* *Computational Complexity Classes,* 01/10
* *A Brief History of Computing* (for Physics students), 10/09
* *Lego My Cube* (robotics demonstration), 11/08
* *Pixel Power* (image formats), 03/08
* *Using Java OpenMap and JScheme to Find a Missing Aircraft,* 10/06

**Richard Stallman Talk at Lycoming College,** Williamsport, PA 03/09 Arranged and hosted RMS visit, and was his pilot.

**PittJUG Code Camp,** Pittsburgh, PA 10/06 Speaker: *Using JScheme and OpenMap in a Civil Air Patrol Lost Aircraft Search*

**MIT LL3 & LL4 Lightweight Languages Workshops,** Cambridge, MA 2002-2004 *Member, Program Committees 2003 & 2004*

Speaker, 2002: *Leveraging Libraries in Lightweight Languages: the JScheme Experience, Or Why Bambi Snuggles with Godzilla*

**PyCon DC 2003,** Washington, DC 3/03 Speaker. *Lessons Learned in Converting a Large C Program into Manageable Python Modules*

**JavaOne 2002,** San Francisco, CA 3/02 Speaker. *ICIS: Redeploying a Military Logistics System to the Web*

**Free Software Conference,** Moscow, Russia 4/93 *American Co-Chair*

**Arndt & Arndt,** Washington, DC 5/87-6/87 *Russian-English Interpreter*

* Exhibited American furniture and answered questions about life in America to half of 250,000 visitors to United States pavilion at Stroyindustriya-87 trade show, Moscow, USSR.

**Mystic Seaport Museum,** Mystic, CT Summers 1977, 1978, 1980 *Planetarium Lecturer*

**RECENT CONFERENCES ATTENDED**

* StrangeLoop 2013 (St. Louis)
* LambdaJam 2013 (Chicago)
* PhillyETE 2013 (Philadelphia)
* NE Scala 2013 (Philadelphia)
* Scalathon 2012 (Philadelhpia)
* NE Scala 2012 (Boston)
* Google I/O 2012 (Pittsburgh)
* ACM SIGCSE NE 2006-2010
* Free Software / LibrePlanet 1991-2013 (Boston)
* JavaOne 2002 (San Francisco)
* Usenix 2001 (Boston)

**FAMILIARITY WITH TECHNOLOGY**

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| **LANGUAGE** | **YEARS** | **WHEN** |
| C | 36 | 1977→ |
| Java | 18 | 1995→ |
| JavaScript | 17 | 1996→ |
| C++ | 16 | 1997→ |
| Various assembler | 15 | 1975→ |
| Racket/Scheme | 14 | 1999→ |
| Perl | 12 | 1994-2006 |
| Objective-C | 10 | 1988→ |
| TeX | 10 | 1986→ |
| Basic | 7 | 1975-1982 |
| Python | 7 | 2003→ |
| Smalltalk | 3 | 1993-1994, 2004 |
| Fortran | 3 | 1975-1978 |
| Scala | 2 | 2011→ |
| Lisp | 2 | 1980,1988 |
| Ruby | 2 | 2004→ |

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| **SYSTEMS** | **YEARS** | **WHEN** |
| Unix | 35 | 1978→ |
| GNU | 30 | 1983→ |
| SunOS, Solaris | 19 | 1987-2006 |
| Web | 19 | 1994→ |
| Linux | 18 | 1995→ |
| DrScheme/Racket | 14 | 1999→ |
| Oracle | 11 | 1986, 1997 |
| Mac OS X | 11 | 2002→ |
| MySQL | 11 | 2002→ |
| XML | 11 | 2002→ |
| Microsoft | 10 | 1982→ |
| PostgreSQL | 9 | 2004→ |
| NeXTstep | 6 | 1988-1994 |
| CP/M | 4 | 1978-1982 |
| Early Mac | 4 | 1984-1987 |
| PDP-8/11 | 3 | 1975-1978 |
| J2EE | 2 | 2004→ |
| Sybase | 2 | 1993-1994 |
| BerkeleyDB | 1 | 2008 |
| VAX/VMS | 1 | 1986→ |

**AFFILIATIONS & INTERESTS**

* Fluent in Russian and French, passable German, some Chinese.
* Member ACM, IEEE, Usenix/Sage.
* Treasurer, Free Software Foundation, 1998-current. Co-founder, GNU Objective-C project.
* Member Civil Air Patrol since 04/2001. Member AOPA, EAA. Instrument-rated private pilot. CAP Squadron Commander, 2007-current. Board member Williamsport Regional Association of Pilots, 2006-current. Began flying in 1978.
* Member Cambridge Boat Club, Central PA Rowing Club. Coxswain on 1989 & 1994 U.S. Rowing Teams. Trained with U.S. National Team 1988-1995. Board of Directors, CRASH-B Sprints World Indoor Rowing Championships, 1984-current. Regatta Committee, Head-of-the-Charles™, 1993-1995. Began rowing in 1974.
* Volunteer adult leader, Cub Scouts & Boy Scouts, Williamsport, PA, 2003-current.
* Volunteer rowing coach, Lycoming College, Williamsport, PA, 1999-2004.
* Volunteer rowing coach, Boston inner city youth program (Mandela Town Hall Health Spot), Community Rowing, 1994-1996.
* Volunteer tutor, Trinity After-School program, Williamsport, PA, 1999-2000, 2006.
* Volunteer reader, Recording for the Blind and Dyslexic, 1989-1999.

References available on request.

Updated: 23 Sep 2013

*Adapted from original LaTeX/PDF version.*