

GEOFFREY S. KNAUTH
Williamsport, PA — geoff@knauth.org

Summary: 39 years building applications and systems of every stripe. Over 19 years building web-based systems. Four years college teaching experience. MY PRIMARY MOTIVATION IS DOING THINGS THAT MATTER.

Skills: Scala, Java, Python, C/C++, Racket, Lisp, Perl, Ruby, JavaScript, Objective-C, Smalltalk, T_EX. Oracle, PostgreSQL, MySQL, XML/JSON, web programming. GNU/Linux, Mac OS X, BSD, Solaris, Windows.

Learning: OCaml, Haskell, Clojure, F#, Erlang, JavaScript Plugins, Android/iPhone SDKs, C#, ASP.NET, Squeak, Dart, Go, Rust.

PROFESSIONAL EXPERIENCE

AccuWeather, State College, PA 03/14–*current*
Senior Software Developer

- Collect and process large volumes of real-time worldwide weather data, integrating new sources weekly.

Contracting

- **Calltrunk**, London, UK. 03/13–07/13. Django support & Python scripting.
- **Discovery Machine, Inc.**, Williamsport, PA. 01/12–05/12. AI R&D 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.

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 \$12.7 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.

PROFESSIONAL EXPERIENCE (*cont'd*)

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™, a Bayesian analysis tool with superior graphics and algorithms.
- Made kernel module enhancements for Teleconnect™ 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, Natural Language Processing, Programming Language Design, iPhone/iPad Software Development, Software Engineering for SaaS, Functional Programming in Scala, Introduction to Systematic Program Design, Principles of Reactive Programming, Maps and the Geospatial Revolution, Geospatial Intelligence and the Geospatial Revolution, MongoDB for Java.

RECENT CONFERENCES ATTENDED

- StrangeLoop 2013 & 2014 (St. Louis)
- LambdaJam 2013 (Chicago)
- PhillyEYTE 2013 (Philadelphia)
- NEScala 2012–2014 (Boston, Philadelphia, New York)
- Scalathon 2012 (Philadelphia)
- Google I/O 2012 (Pittsburgh)
- ACM SIGCSE NE 2006–2010
- Free Software / LibrePlanet 1991–2015 (Boston)
- JavaOne 2002 (San Francisco)
- Usenix 2001 (Boston)

PUBLIC DISCOURSE

Lycoming College Math Colloquia, Williamsport, PA

- 2013 Math Awareness Day speaker (8th graders), *Mathematics in Aviation* 02/13
- *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

FAMILIARITY WITH TECHNOLOGY

PROGRAMMING LANGUAGES		
	Years	When
C	38	1977→
Java	19	1995→
JavaScript	18	1996→
C++	17	1997→
Racket/Scheme	16	1999→
various assembler	15	1975→
Perl	13	1994–2006
Objective-C	10	1988→
T _E X	10	1986→
Python	8	2003→
Basic	8	1975–1982
Scala	4	2011→
Smalltalk	3	1993–1994, 2004
Fortran	3	1975–1978
Lisp	2	1980, 1988
Ruby	2	2004→

SYSTEMS, as programmer		
	Years	When
Unix	32	1978→
GNU	25	1985→
Web	20	1994→
Linux	19	1995→
SunOS, Solaris	19	1987→
DrScheme/Racket	12	2002→
MySQL	12	2002→
Mac OS X	12	2002→
Oracle	11	1986, 1997→
Microsoft	10	1982→
XML	8	2002→
NeXTstep	7	1988–1994
PostgreSQL	6	2004→
Early Mac	4	1984–1987
CP/M	4	1978–1982
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, 2007–2014, Mission Pilot. Board member Williamsport Regional Association of Pilots, 2006–2014. 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.

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