Michael P. Frank, Ph.D.

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Objective

Summer 1999: Available for part-time consulting in web development, software design, or digital VLSI engineering in the Boston area, at $75/hr and up.

Starting Fall 1999: Seeking a tenure-track or postdoctoral position in EE/CS at an academic and/or research institution. Will also consider high-paying research/design positions in industry. Preferred geographic areas: southeastern U.S. or California.

Industrial Skills

Software: UNIX, X libraries, C, C++, Lisp, Perl, various assembler. HTML, CGI, SQL, ObjectStore ODB, Apache web server configuration/extension, dynamic generation of web pages. Analysis of algorithms. **Hardware:** Full-custom VLSI design using Cadence, Mentor Graphics, Magic; simulation using Verilog, HSPICE. Low-power chip design. Performance and scaling analysis.

Education

Massachusetts Institute of Technology — Cambridge, MA
1991-1999
Ph.D. in Electrical Engineering and Computer Science, June 1999. Dissertation under Prof. Tom Knight on "Reversibility for Efficient Computing." Minor in VLSI design. Additional coursework in computer architecture, artificial intelligence (AI), and theoretical computer science. **M.S.** in Electrical Engineering and Computer Science, June 1994. Masters thesis on decision-theoretic AI. Student work experience as research assistant, teaching assistant, and UNIX sysadmin. Cumulative **GPA** at MIT: 4.9 (out of 5.0).

Stanford University — Stanford, CA
1987-1991
B.S., with distinction, in Symbolic Systems, June 1991. Broad curriculum emphasizing computer science, mathematical logic, and artificial intelligence. Independent programming work exploring 3-D rendering and AI techniques. **GPA** in major: 3.9 (out of 4.0). **GRE** scores: Verbal 730 (97%ile), Quant. 800 (97%ile), Analyt. 750 (96%ile) (all out of 800), Computer Science 850 (out of 900) (99%ile).

Awards

National Science Foundation Graduate Fellow, 1992-1995.
International championship, ACM Collegiate Programming Contest, 1991.

Selected Employers

Marketplace.Net, Inc. — San Jose, CA
March 1998-February 1999
Senior software engineer and web developer for this internet startup’s web site,

StockMaster.com, providing public and corporate financial information services. Created custom extensions to the Apache web server for fast communication with an ObjectStore back-end object database. Created prototype CGI-based software for processing and displaying international stock and index data from Dow Jones. Many other software engineering and site maintenance responsibilities.

NASA Ames Research Center Mountain View, CA
Summer 1996
Aided the design and development of high-level control software for the Deep Space One autonomous spacecraft, part of NASA's New Millennium program. Created an object-oriented, extensible spacecraft simulator, using the Common Lisp Object System. Contracted through Caelum Research Corporation.

Newton Research Labs Cambridge, MA
Fall 1995
Software design subcontractor for Microsoft. Helped architect the software Microsoft is developing for digital broadcast of multimedia content via DirectTV satellite.

IBM T. J. Watson Research Center Hawthorne, NY
Summers 1994-1995
Research assistant in the handwriting recognition group. Participated in R&D of a large software system in C for on-line recognition of handwritten words using hidden Markov models for statistical pattern recognition.

SRI International Menlo Park, CA
Summers 1990-1991
Helped develop the Tileworld software environment for simulation of agent architectures. Increased simulation performance, created an X interface in Common Lisp. Later, developed a system for conducting HCI (human-computer interaction) experiments for speech and handwriting recognition systems. Created an LCD tablet graphical interface in C using the X window system.

Microsoft Corporation Redmond, WA
Summer 1988
Software engineer on Microsoft Works 2.0 for DOS; added many features in C.

Publications

Michael P. Frank and Tom Knight, ''Ultimate Theoretical Models of Nanocomputers,'' *Nanotechnology* **9**(3):162-176, Sep. 1998. Presented at the Fifth Foresight Conference on Molecular Nanotechnology, Palo Alto, CA, Nov. 1997.
`http://www.ai.mit.edu/~mpf/Nano97/paper.html`

Michael P. Frank, Tom Knight, Norm Margolus, ''Reversibility in optimal scalable computer architectures,'' in Calude, Casti, Dineen, eds., *Unconventional Models of Computation* (proceedings of the First International Conference on Unconventional Models of Computation, Jan. 1998), pages 165-182, Springer, 1998.
`http://www.ai.mit.edu/~mpf/rc/scaling_paper/scaling.html`

Michael P. Frank, Carlin Vieri, M. Josephine Ammer, Nicole Love, Norman H.

Margolus, Thomas F. Knight, Jr., ‘‘A scalable reversible computer in silicon,’’ in *ibid.*, pages 183-200. http://www.ai.mit.edu/~mpf/rc/flattop/ft.html

Michael P. Frank, ‘‘Advances in decision-theoretic AI: Limited rationality and abstract search,’’ Master’s thesis, Massachusetts Institute of Technology, Cambridge, Massachusetts, May 1994. http://www.ai.mit.edu/~mpf/papers/Frank-94/Frank-94.html

Sharon Oviatt, Philip Cohen, Martin Fong, and Michael Frank, ‘‘A Rapid Semi-Automatic Simulation Technique for Investigating Interactive Speech and Handwriting,’’ *Proceedings of the International Conference on Spoken Language Processing*, Bariff, Canada, October 1992.

Matthew L. Ginsberg, Michael Frank, Michael P. Halpin, and Mark C. Torrance, ‘‘Search lessons learned from crossword puzzles,’’ *Proceedings Eighth National Conference on Artificial Intelligence*, 1990.

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There is also a plain text version at resume.txt, a Postscript version at resume.ps, and a PDF version at resume.pdf.