Jeff Abrahamson

4411 Pine Street
Philadelphia, PA 19104

+1 (215) 837-2287
jeffa@cs.drexel.edu
(unreachable 23 Mar–1 Apr)

Summary: A PhD in theoretical computer science, focusing on random matching algorithms, with ten years of industry software engineering experience. Experienced working on deadline in teams with collaborative tools as well as working individually.

Education

Drexel University	PhD in Computer Science	(August 2007)
Drexel University	M.S. in Computer Science	2005
University of Pennsylvania	M.A. in Theoretical Mathematics	1990
Massachusetts Institute of Technology	S.B. in Theoretical Mathematics	1988

Employment

Drexel University, PhD Student, Philadelphia, PA, USA, 9/2002–7/2007 (est.).

- Developed and implemented algorithms for deterministic subsampling and for random matching (python, linux/unix) (PhD dissertation).
- Solved a special case of the Traveling Salesman Problem on planar polygons with extension to polytopes in $\mathbb{R}^n$ (masters thesis).
- Developed and implemented efficient cryptographically secure backup algorithm (C, linux/unix).
- Developed and implemented pattern matching algorithms (C, C++, python, octave/matlab, linux/unix).

CooperNeff, Senior Software Engineer, King of Prussia, PA, USA, 2/2001–5/2002.

- Wrote and maintained software for equities and futures trading systems (C++, C, perl, Solaris/unix, Oracle, sockets/TCP/IP, CORBA (Orbix), SQL, pthreads, ncurses).
- Wrote new build (make) system.

SmithKline Beecham, SenIor Software Engineer, Upper Merion, PA, USA, 8/1999–2/2001.

- Wrote LALR(1) parser for human genome data (C/flex/bison, Solaris/unix).
- Optimized SQL code (Sybase).
- Wrote web search engine based on existing spider for internal data (Oracle/SQL, CORBA, java servlets, Solaris/unix).

Vividata, SenIor Software Engineer, Berkeley, CA, USA, 2/1999–8/1999.

- Wrote web-based e-commerce photo management product (perl, CGI, MySQL, Solaris/unix).

Just in Time Solutions, Senior Software Engineer, San Francisco, CA, USA, 4/1998–10/1998.

- Ported C++ OFX-based internet bill presentation server from NT to Solaris/unix (CORBA (Orbix) for java integration).
- Wrote code (elisp, sed) to automate merging port branch into release code branch.

Bio-Rad, Senior Software Engineer, Hercules, CA, USA, 10/1997-1/1998.

- Wrote cross-platform (MacOS/Win) image annotation facility (C++).
- Designed and implemented cross-platform framework for formatted, rotatable text.

Infonautics Corporation, Senior Software Engineer, Wayne, PA, USA, 7/1996–4/1997.

- Threaded application (C++, PowerPlant/MacOS, no OS thread support).
- Wrote purgeable backing store for dynamic jpegs (C++, MacOS).
- Implemented automated error checking and user interfaces.

Protein Databases, Software Engineer, Huntington Station, NY, 6/1993–6/1996.

- Ported X/SunOS/unix electrophoresis gel analysis application to MacOS (C, C++, X).
- Implemented error detection code.
- Wrote CGI (C, perl, awk, Solaris/unix) interface to product line.

Watermark Management Corporation, Software Engineer, Princeton, NJ, USA, 10/1992–5/1993.

- Wrote trade analysis and accounting software (Fortran, SunOS/unix, MacOS).
- Automated system maintenance.

Whitehead Institute for Biomedical Research, Research Assistant, Cambridge, MA, USA, 10/1986–8/1988.

- Wrote MAPMAKER genetic analysis software (C, unix).

Publications

Refereed Journal Publications

- On Optimal Weighted Matchings, in preparation.
- Deterministic Random Sampling, in preparation.
- J. Abrahamson, A. Shokoufandeh, Euclidean TSP on Two Polygons, under review.
- J. Abrahamson, A. Shokoufandeh, P. Winter, Euclidean TSP Between Two Nested Convex Obstacles, Information Processing Letters, 95, 370–375 (2005).
- J. Abrahamson, Curves Length Minimizing Modulo ν, Michigan Mathematics Journal, v.35(2), 285–290 (1988).
- E.S. Lander, P. Green, J. Abrahamson, A. Barlow, M. Daly, S. Lincoln, L. Newburg, MAPMAKER: An Interactive Computer Package for Constructing Primary Genetic Linkage Maps of Experimental and Natural Populations, Genomics, October 1987.
- D. Donnis-Keller, P. Green, C. Helms, S. Cartinhour, B. Weiffenbach, K. Stephens, T. Keith, D. Bowden, D. Smith, E. Lander, D. Botstein, G. Akots, K. Rediker, T. Gravius, V. Brown, M. Rising, C. Parker, J. Powers, D. Watt, E. Kauffman, A. Bricker, P. Phipps, H. Muller-Kahle, T. Fulton, S. Ng, J. Schumm, J. Braman, R. Knowlton, D. Barker, S. Crooks, S. Lincoln, M. Daly, J. Abrahamson, A Genetic Linkage Map of the Human Genome, Cell, 51(2), 319–337, October 23, 1987.

Refereed Conference Publications

- Adam J. O'Donnell, Walt Mankowski, Jeff Abrahamson, Using E-Mail Social Network Analysis for Detecting Unauthorized Accounts, Third Conference on Email and Anti-Spam (CEAS 2006), Mountain View, California, 27–28 July 2006.
- Nicu D. Cornea, Ulukbek Ibraev, Deborah Silver, Paul Kantor, Ali Shokoufandeh, Jeff Abrahamson, Sven Dickinson, A Visualization Tool for fMRI Data Mining, IEEE Visualization 2005, 93.
- J. Abrahamson, A. Shokoufandeh, Lazy Robots Constrained by at Most Two Polygons, IEEE/RJS International Conference on Intelligent Robots and Systems (IROS 2005), Edmonton, Alberta, August 2–6, 2005.
- T. Denton, M. F. Demirci, J. Abrahamson, A. Shokoufandeh, S. Dickinson, Approximation of Bounded Canonical Sets for 2D View Simplification, International Conference on Pattern Recognition (ICPR 2004), Cambridge, England, pp. 273–276, August 23–26, 2004.
- T. Denton, J. Abrahamson, A. Shokoufandeh, Approximation of Canonical Sets and their Applications to 2D View Simplification, IEEE Computer Society International Conference on Computer Vision and Pattern Recognition (CVPR 2004), Washington, DC, II-550–II-557, June 2004.
- J. Abrahamson, A. J. O'Donnell, Cryptar: Secure, Untrustful, Differencing Backup, NordU, Copenhagen, Denmark, January 2004.

Theses

- J. Abrahamson, Between a Rock and a Hard Place: Euclidean TSP in the Presence of Polygonal Obstacles, Masters Thesis, Drexel University, May 2005.

Languages: English (native), French (proficient), German (basic), Latin (building inscriptions).

Citizenship: USA