Jeff Abrahamson

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Summary: Fifteen years of industry software engineering experience (notably C++ and python on linux) plus a PhD in theoretical computer science, focusing on random matching algorithms. Experienced working on deadline in teams, as team lead, and individually. I am a generalist: my passion is solving hard problems and becoming expert in new domains.

Education

Drexel University	PhD in Computer Science	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

Google, Site Reliability Engineering, London, UK *4/2013–present.*
Writing software to make software run at scale (C++).

J.P. Morgan, Vice President, London, UK *6/2012–3/2013.*
Risk datawarehousing (python and C++).

Cryptar, Author, Nantes, France *2/2012–present.*
Commercialisation of academic work from my PhD: an encrypted remote storage protocol. C++.

Transition, Developer, Nantes, France *8/2011–1/2012.*
I left Goldman Sachs for a position in Paris, which I later decided against. I took a short contract to explore different technologies (C++/linux; also a bit of django/python/mysql).

Goldman Sachs, Strategies, Executive Director, London, UK *9/2007–8/2011.*

- Co-developed firmwide risk data warehouse
- Conceived and developed process data warehouse for understanding distributed computation behavior
- Conceived and developed market share analysis system
- Conceived and developed dynamic process distribution system
- Extended firmwide near-realtime application monitoring system

(C++ and linux, but otherwise entirely in a language and on systems proprietary to the bank; agile methodologies)

Drexel University, PhD Student, Philadelphia, PA, USA *9/2002–11/2007.*

- Developed and implemented algorithms for deterministic subsampling and for random matching (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.

(Python and C (with glib) on linux)

CooperNeff, Senior Software Engineer, King of Prussia, PA, USA and Paris, France *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, Qt).

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

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

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

- Web e-commerce photo print 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 *(C++, CORBA (Orbix), elisp, sed)*

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

- Cross-platform image annotation facility with formatted and rotatable text. *(C++, MacOS and Windows)*

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

- Threaded application (no OS thread support). Purgeable image cache. *(C++, PowerPlant/MacOS)*

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

- Ported electrophoresis gel analysis application suite from Solaris to MacOS. Web interface for a part of it. *(C, C++, X, Solaris, MacOS, CGI, perl, awk)*

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

- Trade analysis software. *(fortran, SunOS, unix, MacOS)*

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

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

Publications

Refereed Journal Publications

- J. Abrahamson, A. Shokoufandeh, Euclidean TSP on Two Polygons, Theoretical computer science, v.411(7–9), 1104–1114 (2010).
- J. Abrahamson, B. Csaba, and A. Shokoufandeh, Optimal Random Matchings on Trees and Applications, Lecture Notes in Computer Science, Approximation, Randomization and Combinatorial Optimization. Algorithms and Techniques, v.5171, pages 254–265 (2008).
- 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, Optimal Matching and Deterministic Sampling, PhD Dissertation, Drexel University, November 2007.
- J. Abrahamson, Between a Rock and a Hard Place: Euclidean TSP in the Presence of Polygonal Obstacles, Masters Thesis, Drexel University, May 2005.

Code: `https://github.com/JeffAbrahamson` (of which `https://github.com/JeffAbrahamson/srd` is mature enough to provide a sample, the others may be in messy states of spare-time-progress).

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

Citizenship: France, USA