Peter D. Groves

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Experience

Software Engineer - Groupon
September 2013 - Present: Chicago, Illinois

Part of the Automated Merchandising team, responsible for bundling deals (Groupons) into widgets that can be displayed anywhere on the Groupon website or mobile apps. Personal areas of focus:

- Machine learning system for adjusting the relative rankings of widgets in different contexts.
- Integration test suite of the core system, written in Python.
- Build automation using Python, Capistrano, Maven, Jenkins, and cron.
- General software engineering of a Java webapp on an 8 person agile software team.
- International rollout of core service to 20 countries in Europe and Latin America.

Independent Contractor
October 2006 – September 2013: Chicago, Illinois

- Nexlp (2013). An e-Discovery startup in Chicago. Their core product uses a natural language processing toolkit from the University of Illinois and a graph database (Neo4j) to analyze sets of millions of emails at a time. Primary deliverable was a pattern detection module that combined frequent item set analysis and anomaly detection to generate patterns of the form "Bob emailed Sally late at night about Chicago 12 times during the week of Dec 4, 2006, but normally this occurred 0.03 times/week."
- rVibe (2013). A boutique maker of training software for the pharmaceutical industry. Working two days a week, handled devops for the company for nine months. Designed and implemented build tools and a performance benchmarking suite. Performed weekly deploys to productions servers and adjusted agile release schedule and methodology as needed.
- Fuzzy economics project (2011/2012). Privately funded by a (stealth) organization, this was a bleeding edge project to create a system for creating expansive yet detailed ontologies of hypotheses and their supporting evidence. Built the full stack prototype using Java EE with JSP and the JavaBayes toolkit for Bayesian Networks.

Founder - DesignByRobots
October 2006 – September 2013: Chicago, Illinois

DesignByRobots commercializes Automated Design technology. The core technological innovation is a data modeling technique that makes it easier to perform machine learning on any data that is mapped into the model. The data model is also well suited to creating domain specific languages, thereby opening up a new path for optimization of of much richer designs and decisions by using machine learning directly on DSLs. The first product is focused on developing trading strategies under changing conditions in the financial markets.

Research Engineer - National Center for Supercomputing Applications (NCSA)
Jan 2008 - May 2009: Champaign, Illinois

Acted as a core developer and release engineer for project SEASR. SEASR is a development platform and analytics toolkit for Humanities research communities to develop, share, and deploy analytics driven web applications, primarily involving digitized document collections. Primary responsibility was design and execution of release process, including integration and final QA.

Technical Sales Support - RiverGlass, Inc.
Oct. 2004 – Sept. 2006: Chicago, Illinois

Acted as technical liaison to sales and marketing. Brought technical expertise to sales calls, investor briefings, and other customer facing situations. Also responsible for developing marketing messaging through abstracts and white papers, particularly in new markets and early stage product roll-outs.

Analyst/Developer – RiverGlass, Inc.
Jan. 2004 – Oct. 2004: Chicago, Illinois
First full-time employee of RiverGlass, Inc., a company formed to commercialize data mining technology developed at the NCSA. Primary project involved analysis of groundwater monitoring schemes at chemical and oil spill sites to identify redundancies. Designed and developed software that justified the removal of redundant wells resulting in up to a 10% yearly cost savings for the potentially 50+ years of monitoring required by the EPA at spill sites. (See Publications)

Skills

Practical: **Java, Ocaml, Linux (Ubuntu), Ruby, Python**
Theoretical: **Machine Learning, Genetic Algorithms, Data Modeling, Bayesian Classifiers, Artificial Neural Networks, Complex Event Processing**

Publications

Minsker, B. S., Groves, P., and Beckmann, D. Optimizing Long Term Monitoring at a BP Site Using Multi-Objective Optimization, American Society of Civil Engineers (ASCE) Environmental & Water Resources Institute (EWRI) World Water & Environmental Resources Congress 2005 & Related Symposia, Anchorage, AK, 2005.

Bajscy, P., Groves, P. Methodology For Hyperspectral Band Selection. Journal of Photogrammetric Engineering and Remote Sensing. Vol 70, No. 7. pp. 793-802. July 2004.

Groves, P., and Bajscy, P. Methodology For Hyperspectral Band and Classification Model Selection. Proceedings of the IEEE Workshop on Advances in Techniques for Analysis of Remotely Sensed Data. October 27-28, 2003.

Education

Masters of Science in Computer Science
University of Illinois Urbana-Champaign
Graduated December 2003

Bachelors of Science in Agricultural Engineering, Minor in Computer Science
University of Illinois Urbana-Champaign
Graduated August 2001