ROBERT STARK

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PROFESSIONAL EXPERIENCES

Founder

Datagotchi Labs, Berkeley, CA **December 2018-present**

The name I use for my efforts to commercialize my AI side projects

- Researched, designed, and developed a tool to create job portfolios with a formal data schema (https://github.com/bobness/portfolio-creator) in AngularJS (v1.x) and Node.js with Express
- Integrated portfolio-creator with additional tools to use it as a medium to discuss opportunities with recruiters and to track resulting job opportunities (https://github.com/bobness/counteroffer) in AngularJS (v1.x) and Node.js with Express
- Envisioned these as part of a two-sided marketplace where recruiters and candidates can more easily find one another using fuzzy matching with AI

Staff Software Engineer

Clarify Health Solutions, Emeryville, CA **July-November 2018**

Mid-stage startup using machine learning to assist medical care teams

- Front-end development in Angular (v6), Typescript
- Back-end development in Node.js with Express

Senior Software Engineer

Tanium, Emeryville, CA **October 2016-June 2018**

Late-stage startup providing a network platform to manage all endpoints simultaneously

- Led the engineering team maintaining the primary, question-asking UI of the platform
- Front-end development in AngularJS (v1.x), D3, Typescript, and Jasmine/Karma tests
- Middle-tier development in Node.js with Restify and Chai/Mocha tests

Data Science Teaching Assistant (part-time)

General Assembly, San Francisco, CA **May-July 2016**

- Tutored students on descriptive and inferential statistics, machine learning models (linear & logistic regression, kNN, decision trees/random forests, LDA, & time series autocorrelation) using SK-Learn, NumPy/Pandas, and iPython/Jupyter Notebook

Lead UX Engineer & Product Manager

Driven, San Francisco, CA **July 2015-September 2016**

Mid-stage startup providing an APM for Cascading, Scalding, MapReduce, Hive, Pig, and Spark apps; acquired by Xplenty

- Led front-end engineering team using AngularJS (v1.x), D3.js, and Jasmine/Karma tests
- Led user research and product analytics, writing user stories, designing user/feature flows, and pitching roadmap changes to executives
- Worked with sales, marketing, and executives to expand the target audience to cluster operators or administrators to supplement the core software developer users
- Assisted back-end development in Java with the Jersey RESTful API library
- Led a project to optimize the load time of the single-page web app, going from over 15 seconds for initial load to about a second, collaborating with the backend server team, the client data collection team, and my frontend team

Co-founder & UX Consultant

Social Ergonomics Consulting, Berkeley, CA **August 2014-July 2015**

Helped found a consulting firm that merged user research, UX design, and prototyping

- Developed front-end prototypes using JS with Bootstrap, Highcharts, D3.js, jQuery
- Designed and developed a dashboard for product managers and startup founders to link user research, product features/plans, and evaluation results (https://github.com/bobness/pmboard)
- Consulted on user research and how it informs product strategy and UX design

Lead UX Engineer

Collusion, San Francisco, CA **December 2013-August 2014**

Early-stage startup providing a platform for online meetings and team collaboration

- Front-end developer using JQuery, Three.js, custom web sockets, Objective-C for iOS
- Head of user research, product requirements, UX design, usability evaluation, and analytics
- Designed and developed a responsive web UI to complement our iOS app
- Assisted in middle-tier development in PHP and back-end development in Node.js with Express

Lead Software Engineer

Exaptive, Cambridge, MA (now in Oklahoma City, OK) **March-October 2013**

First hire of a startup providing a platform for data science application programming

- Developed data analytics and visualizations (JS with D3.js, PHP, Python, R)
- Worked with the founder on product direction and user/market segments to target

Research Scientist

Charles River Analytics, Cambridge, MA **October 2010-March 2013**

Small government R&D firm focused on military applications

- Designed user experiences to support complex, data-driven decision making
- Wrote proposals, led projects, and delivered prototypes to customers
- Published research on: data visualization, data mining, and data-driven decision support

Data Scientist & UX Engineer

BBN Technologies, Cambridge, MA **September 2008-October 2010**

Mid-sized government R&D firm focused on military applications; acquired by Raytheon

- Designed, developed and user-tested speech and gesture recognition system (Java, R, Matlab)
- Developed and evaluated other software in Java, Python, ASP/C#.NET, Perl, and Lisp

Data Scientist (Intern)

ScanScout, Boston, MA **May-August 2010**

Mid-stage startup in the video advertising space; acquired by Tremor Video, now called Telaria

- Analyzed behavioral data mining system to optimize video ad placement (in R)
- Developed optimizer evaluation system using statistical significance measures (in R embedded in LaTeX)

Graduate Research Assistant

Penn State University, State College, PA **September 2007-May 2008**

- Researched decision recommendation, decision tree induction, and visualizations (in R, Java)

Software Engineer (Intern)

IBM, Rochester, MN **May-August 2007**

- Worked on a Speed Team to create a renderer for a custom markup language in the Eclipse Standard Widget Toolkit (SWT) (in Java)
- Utilized pair and iterative programming with regular project reviews and presentations
- Organized and attended code reviews and design meetings

Research Assistant

Michigan Tech University, Houghton, MI **2006-2007**

- Investigated data mining computer architecture simulation data
- Implemented Java prototype on real data after exploring literature for appropriate temporal data mining algorithms
- Worked with Professors Soner Onder and Nilufer Onder

Student Researcher (NSF REU)

University of California, Santa Cruz, CA **Summer 2006**

- Investigated suitable statistical classification algorithms for “expert” Go playing data

- Implemented Naive Bayes and Adaboost algorithms in R Programming Language
- Authored paper and poster on experimental results for REU program expo
- Worked with Professor David Helmbold

Research Assistant
Iowa State University, Ames, IA **January-May 2006**
- Developed a Kweelt (XQuery DBMS) extension for CanStoreX, a canonical XML storage system
- Worked with Professor Shashi K. Gadia

Computer Science Learning Center Tutor
Michigan Tech University, Houghton, MI **2005-2007**
- Coached new computer science majors in Java programming
- Aided problem solving and debugging
- Assisted implementation of algorithms and data structures

Software Engineer (Intern)
IBM, Rochester, MN **January-August 2005**
- My first college internship, where I wrote code in SQL-embedded C to test the DB2 database
- Was chosen to lead a Speed Team in the summer to create a tool to debug and optimize DB2 database queries (in Java)
- FutureBlue intern committee chairman

Founder
Disconnection Radio, Houghton, MI **2004-2005**
- Created, managed, and participated in an online radio station with PHP/MySQL website
- Had several DJs with regularly-scheduled shows
- Was planning on financing with radio ads, but didn't get around to it

Founder
Infinity Computing Services, Houghton, MI **2003-2005**
- Created a company that provided web hosting, email hosting, and IT support services
- Financed with several customers

Founder
Simhack, Houghton, MI **2003-2004**
- Created a massive, multiplayer online game about computer security
- Written first with PHP with a MySQL database, and later ported to Java servlets (J2EE) with Hibernate object-relational mapping (ORM)
- Financed by allowing users to buy "turns" to train up their characters

Web and Database Developer
Great Lakes Label, Walker, MI **2002-2004**
- Created an enterprise resource planning (ERP) system to track all aspects of the business, including printing inventory, purchase orders, and payments in FileMaker Pro
- Hooked up the ERP to a custom PHP ecommerce website so customers could place orders online

EDUCATION

MS in Information Sciences and Technology
Penn State University **2010**
- Research: Interactive machine learning of decision trees for intelligent assistants
- Thesis: Development of gestural interfaces for immersive training using hidden Markov models
- Honors: Jordan H. Rednor Graduate Fellowship

Advanced Study Program (ASP)
Massachusetts Institute of Technology **2008-2009**

- Relevant Classes: IT and Organizations (15.576), Intelligent Multimodal User Interfaces (6.835)

BS in Computer Science (Minors in Math & Philosophy)

Michigan Tech University **2007**

- Research: Data mining with evolutionary algorithms; data mining associations in computer architecture simulations; machine learning of Go/Baduk moves
- Activities: Workshop on Data Visualization and its Role in the Practice of Statistics (UCLA, 2006), Phi Kappa Phi Honor Society, Upsilon Pi Epsilon Honor Society chapter president, Student Organizations in CS (SOCS) founding member
- Honors: Upsilon Pi Epsilon Honor Society Jim Nolen Scholarship Award, Mathematics Department Certificate of Merit, Board of Controls Merit Scholarship

National Student Exchange (NSE)

Iowa State University **Spring 2006**

- Relevant Classes: Intro to Database Management Systems, Probability and Statistics for Computer Science, Logic and Scientific Reasoning

SCHOOL PROJECTS

ISTT521: Human-Computer Interaction **Spring 2008**

- Various projects on usability and related tools, including CogTool and Cynthia Says for interface evaluation, RUI for keystroke logging, verbal protocol analysis and task analysis
- Published paper on reducing human-related risks in systems across various domains

IST411: Distributed Object Computing **Spring 2008**

- Thread-based web crawler prototype
- Java Remote Method Invocation (RMI) turn-based multiplayer strategy game

CSE583: Pattern Recognition **Fall 2007**

- Neural network in Java with backpropagation to solve XOR problem
- Expectation-Maximization (EM) algorithm in R for multivariate Gaussian clusters

IST511: Information Management **Fall 2007**

- Social network analysis on IST faculty research; tested correlation between degree of collaboration and funding
- Custom vertical search engine using Lucene/Nutch for MySpace music directory event listings
- Web name disambiguation clustering problem; used Latent Dirichlet Allocation and hierarchical clustering

CS5811: Artificial Intelligence **Fall 2006**

- Experimental comparison and analysis of depth-first, breadth-first, iterative broadening, A* and iterative deepening
- A* searches, with implementation of iterative broadening search
- Experimental comparison and analysis of SATPLAN and Fast Forward (FF) planning algorithms

RESEARCH PUBLICATIONS

- **Stark, R.F.,** Roth, E.M., and Farry, M.P. (2013). Incrementally Formalizing Graphical Models for Collaborative Operations Research. *In Proceedings of the 57th Annual Meeting of the Human Factors and Ergonomics Society (HFES).*
- Wollocko, A.B., Farry, M.P., **Stark, R.F.** (2013). Supporting tactical intelligence using collaborative environments and social networking. *In Proceedings of SPIE Defense, Security, and Sensing, 2013.*
- **Stark, R.F.,** Woods, D.D., Farry, M.P., Morison, A., Thornton, W., and Wollocko, A. (2012). Visualizations and Interaction Methods for Resilient Submarine Decision Support. *In Proceedings of the 56th Annual Meeting of the Human Factors and Ergonomics Society (HFES).*
- **Stark, R.F.,** Wollocko, A., Borys, M., Kierstead, M., and Farry, M.P. (2012). Visualizing Large Scale Patterns and Anomalies in Geospatial Data. *Presented at VisWeek 2012.*

- **Stark, R.F.,** Voshell, M., Mahoney, S.M., and Farry, M.P. (2012). Development of Dynamic Visual Artifacts for Resilient Human-Automation Collaboration. *Presented at the 4th International Conference on Applied Human Factors and Ergonomics (AHFE).*
- Farry, M.P., **Stark, R.F.,** Mahoney, S.M., Carlson, E., and Koelle, D.M. (2012). Framing the Sociocultural Context to Aid Course of Action Generation for Counterinsurgency. *In Proceedings of the 4th International Conference on Applied Human Factors and Ergonomics (AHFE).*
- **Stark, R.F.,** Farry, M.P., Thornton, W., Wollocko, A., Woods, D.D., and Morison, A. (2012). Modeling Resilient Submarine Decision Making. *Presented at the 21st Annual Conference on Behavior Representation in Modeling Simulation (BRiMS).*
- **Stark, R.F.,** Farry, M.P., and Pfautz, J.D. (2012). Mixed-Initiative Data Mining with Bayesian Networks. *In Proceedings of the 2012 IEEE Conference on Cognitive Methods in Situation Awareness and Decision Support (CogSIMA).*
- Diller, D.E., **Stark, R.F.,** Krisler, B., McDonald, D., Shapiro, R., and Moffitt, K. (2010). Interacting Naturally in Virtual Environments. *In Proceedings of the 2010 Interservice/Industry Training, Simulation and Education Conference (I/ITSEC).*
- **Stark, R. F.** and Kokini, C. (2010). Reducing Risk in System Design through Human-Systems Integration. *Ergonomics in Design, 18(2)*, 18-22.
- **Stark, R.F.** (2010). Aiding the User Input to Video Games: Virtual Role Players with Speech and Gesture Recognition. MS Thesis, Penn State University.