Joshua R. Hoak

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www.common-index.com

Education

Coursework in Computer Science, 2009-2010, Portland State University

B.A., Mathematics, May 2009, Reed College.
Thesis in Computational Complexity: *Mathematical Games*

Experience

Software Engineer, Google September 2011 - Present

Enabled new forms of payment, and worked with vendors for testing. Created fine-grained monitoring for the internal payments system to enable efficient triage.

Software Developer, LivingSocial May 2011 - June 2011

After LivingSocial acquired SocialMedia, used the statistics web-service to track LivingSocial advertisements seen by millions of people. Authored a Scala script to generate skeletal Scala-services, so as to enable rapid creation and prototyping.

Software Developer, SocialMedia.com September 2010 – May 2011

Built a RESTful statistics web service using the Scala web-framework BlueEyes for tracking advertisement metrics capable of handling thousands of requests per second per server. Developed an asynchronous caching layer to handle traffic spikes to the service. Constructed a web service to generate random advertisement variations to test a variety of presentation hypotheses, using techniques of MapReduce to analyze the resulting data.

Software Developer Intern, KGS Go Server Spring 2010 – Fall 2010

Researched machine vision techniques to recover the position of a Go board from a raw camera image, for use in the Go applications for Android phones to abet the recording of Go games. Using Java, investigated and applied algorithms for convolution, edge detection, and projective geometry.

Support Vector Machine Research Spring – Summer 2010

Investigated the effects of noise on the accuracy of Support Vector Machines, providing insights into the effectiveness of the Fuzzy Support Vector Machine model. (Paper available at www.common-index.com/#projects)

Research Assistant: QMedTrix Spring 2010

Acquired and presented information on current Machine Learning research and data cleaning methods for use an automated fraud detection system.

Game Theory Research (Undergraduate Thesis) Fall 2008 - Spring 2009

Researched Constraint Logic theory for games and amalgamated the results of current complexity theory research. Used Constraint Logic to proved the NP-completeness of three games.

Personal Experience

Pyrite: Blog-Generator 13 January 2011

Designed and implemented Pyrite, a python-based blog-generator, which takes YAML data files and produces HTML, CSS, and Javascript to generate a blog for use in a static-hosting site such as Amazon S3.

Presenter, Frontier Developers' Meetup 13 January 2011

Gave an introductory presentation to developer peers on the basic methods of Machine Learning, which included discussions of Perceptrons, Neural Networks, SVMs, and K-Means. (Slides at www.common-index.com/#projects)

Contributor, BlueEyes October 2010 - December 2010

Created methods and objects to construct and parse HTTP headers for the Scala web-framework BlueEyes.

Go Diagram and Layout Generation Summer 2009 – Present

Wrote a Python script to typeset files for Go, the game of strategy, into vector graphics (SVG). Then, combined this system with LaTeX typesetting to create two books of Go problems.

LANGUAGES Java, Scala, Python, Javascript, C, LaTeX, R, MySQL, HTML/CSS, Bash

TECHNOLOGIES MongoDB, NodeJS, Redis, MySQL, SOAP