

Joshua R. Hoak

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www.common-index.com

EDUCATION

B.A., Mathematics, May 2009, Reed College.
Thesis in Computational Complexity: *Mathematical Games*
Cumulative GPA: 3.24

Extended Coursework in Computer Science, Portland State University
Cumulative GPA: 3.83

EXPERIENCE

Software Developer, SocialMedia.com Fall 2010 – Present

Built a RESTful statistics web service for tracking advertisement metrics, capable of handling thousands of requests per second. Developed an asynchronous caching layer to handle traffic spikes to the service. Implemented web services that identify users' locations based on their IP addresses and that retrieve users' conjectured interests to enable personalized advertisements.

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 KGS Go application for Android phones to make it easier to record Go games. Using Java, investigated algorithms for convolution, edge detection, and projective geometry, and developed novel methods for optimal-line analysis.

Support Vector Machine Research Spring – Summer 2010

Investigated the effects of noise on the accuracy of Support Vector Machines and presented the results in a formal paper, which provided insights into current Fuzzy Support Vector Machine research. Used a variety of technologies to achieve results, such as **R** to create artificial data sets, Python to partition data and add noise, and LIBSVM to train Support Vector Machines.

Research Assistant: QMedTrix Spring 2010

Acquired information on current Machine Learning research and data cleaning methods for use in the creation of an automated fraud detection system.

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

Researched Constraint Logic theory for games, amalgamated the results of current complexity theory research, and using Constraint Logic, proved the NP-completeness of three games, one of which was unexplored in the literature.

LANGUAGES

Scala, Java, Python, Javascript, C, \LaTeX , R, X-86 Assembly, HTML/CSS

PERSONAL EXPERIENCE

Blog Founder, Contributor 2010 - Present

Founded Moments and Deviations (momentdev.wordpress.com), a blog devoted to studying practical and theoretical problems in computer science and math.

Go Diagram and Layout Generation Summer 2009 – Present

Developed a Go typesetting system that transformed Go files into vector graphics.

Founder and Organizer, Go Club. Reed College Fall 2007 – Spring 2009

Organized weekly meetings and devoted to study and practice of the game Go.