

Mathematician looking to make a career change into software development due to love of programming, algorithms, and product development.

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## EXPERIENCE

### University of Washington

Seattle, WA

*Research Assistant**March 2012 to Present**Instructor**June 2011 to March 2012**Teaching Assistant**September 2009 to June 2011*

- Performed mathematical research. Developed and tested conjectures. Wrote computer simulations to gather data. Wrote and published papers and gave seminar talks on results. Main organizer of optimization seminar.
- Taught differential equations and linear algebra college classes. Designed and gave lectures, homework, and exams.
- Led classroom discussion sections for college calculus classes. Graded homework and exams. Held office hours.

### Future Advisor

Seattle, WA

*Software Developer, Intern**March 2012 to May 2012*

- Implemented a portfolio optimization component using an interface to an open-source optimization package. Wrote test cases and checked expected behavior. Solved issues in converting optimization package output to usable data.

### University of Washington Robinson Center

Seattle, WA

*Instructor**July 2010 to August 2010*

### Center for Talented Youth

Santa Cruz, California

*Teaching Assistant**Summers 2006, 2007, and 2009*

### University of California, Davis

Davis, California

*Research Assistant**Summers 2007 and 2008*


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## PROGRAMMING PROJECTS

[github.com/jamesrp/portfolio](https://github.com/jamesrp/portfolio)

### Google App Engine

*Created an email reminder program to allow users to set reminders to be sent to them in the future.**Wrote a Magic: The Gathering website to create sealed deck pools and drafts for tournament practice.*

### Lua

*Created several games with the Love2D game framework.*

### Python

*Mathematical research code using packages including SAGE, numpy, matplotlib, scipy, sympy.**Implemented natural language processing routines for Coursera class.**Implemented simulated annealing for mathematical research simulations.*


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## COMPUTER LANGUAGES AND SOFTWARE

Python, Lisp, C, git, Linux server and desktop, MATLAB, mathematical and numerical packages

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## EDUCATION

### University of Washington – PhD, Mathematics

*September 2009 to December 2013**Advisor: Rekha Thomas**Thesis: Combinatorial Optimization and Sums of Squares*

### University of California, Davis – BS, Mathematics

*September 2005 to June 2009**GPA: 3.93*


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## PUBLICATIONS

### A Semidefinite Approach to the $K_i$ Cover Problem

*J. Gouveia and J. Pfeiffer*Submitted to *Operations Research Letters*, 2012

### Bootstrap Percolation on the Hamming Torus

*J. Gravner, C. Hoffman, J. Pfeiffer, and D. Sivakoff*Submitted to *Annals of Applied Probability*, 2012