Dr. Patrick S. Rhomberg

Senior Software Engineer

  Doctor of Philosophy in Applied Mathematics and Computational Sciences

  Master of Computer Science

Phone: (319) 621-2734
Email: root@patrhom.com
Homepage: patrhom.com
GitHub redirect: github.patrhom.com
LinkedIn redirect: linkedin.patrhom.com

Home address:
9087 SW Monterey Place
Portland, OR 97225

Work Experience

Summary

Pivotal Software, Inc.
  Software Engineer, January 2017 – present

The University of Iowa, Department of Computer Science
  Teaching Assistant, September 2014 – May 2016

Cornell College, Department of Mathematics and Statistics
  Adjunct Professor, September 30 2013 – December 12 2013

The University of Iowa, Department of Mathematics
  Assistant in Instruction, September 2013 – December 2013
  Teaching Assistant, August 2007 – May 2013

Pivotal Software Inc.

Software Engineer, Jan 2017 – `$(date +"%b %Y")`

Held positions on the Toolsmith, M&M, and Improved Build teams
  Toolsmith reponsibilities:
    Maintain continuous integration pipelines and AWS / GCP infrastructure
    Provide tools to developes for rapid iteration.
  Monitoring & Management reponsibilities:
    Owned user-facing components, such as the command-line tool `gfsh`, configuration APIs, JMX beans.
    Owned `SecurityManager` interface and enforcement of security throughout the product.
  Improved Build responsibilities:
    Reduced `precheckin` testing suite execution time from 3 hours to $\tilde{4}5$ minutes.

Teaching Highlights

Teaching Assistant for Large Data Analysis (Spring '16)

Experience teaching Python (Fall '14 - Fall '15)

Adjunct for 4-week, intensive study courses (Cornell, Fall '13)

Lecturer for *Teaching with Technology* course (Spring '12)

Detailed teaching history available at cs.uiowa.edu/~prhomber/teaching.pdf

Fields of Interest

Mathematical Modeling

Simulation Modeling

Epidemiology

Network Diffusion

Parallelization

Optimization / Operations Research

A Summary of Me as a Developer

Language and Tool proficiencies

Fluent and well-spoken:

Java JDK 8

Python (both 2 and 3, with `python3` preferred)

The JetBrains family at large, but predominantly IntelliJ and PyCharm, as expected from the above

The Gradle build tool

`git`, because of course `git`

Concourse continuous integration

Linux (preference for Xubuntu). `emacs` forever.

Concurrency in design and practice, continuous integration

Conversational:

Java JDK 11, Jigsaw modules

AWS and GCP, predominantly as vehicles for continuous integration testing.

`vim`, because as much as I prefer `emacs`, I'm not a zealot and will use the tools available to me.

Out of practice but happy to relearn:

C / C++, Perl

Neophyte:

R, Go, Matlab, Gnuplot

Strong opinions, loosely held

A problem does not need to become costly before its solution has value.

A product withers on the vine when its build system is broken. A responsible developer know how it works. An excellent developer improves it.

Tests form the contract of permissible product behavior. Product confidence cannot exist without test confidence.

A responsible developer seeks out the full usefulness of their tools. (Your IDE can do that for you. Let it.)

Agile has some good ideas, but it has bad ones, too. If you're always pivoting, you're not finishing your epics. Building around individuals isn't scalable.

Research, Presentations, and Academic Interests

Slowly working through the Project Euler problem sets, since July 2018.

Solutions avaialble on GitHub upon request, but private in accordance with the project's wishes.

Doctoral thesis, accepted July 2017: *On the Scalable Parallelization of Network Diffusion Models*

Comparing Agent-Based and Continuous Compartmental Epidemiology Models

Epidemics[3], Boston, MA, November, 2011.

Good Looking Mathematics: A Discussion of Mathematical Modeling

Wartburg College, Waverly IA, April, 2013.

Current Work

Improving and expanding my Reddit bot /u/roll_one_for_me.

Investigating matchmaking strategies for competitive gaming, as approached by network diffusion.

Honors, Awards, and Other Points of Interest

Recipient of The University of Iowa AMCS Summer Research Fellowship
  to the maximum allowance of six years: 2007-2012

Familiarity with machine learning and neural networks.

Familiarity with Django.

Experienced using `git` for version control,
  `bugs everywhere` for issue tracking,
  and `emacs` for development.

Uses Linux (specifically Xubuntu) as primary working environment.

Contributor to the Boost Parallel Graph Library.

Author of /u/roll_one_for_me, table-roller for /r/DnDBehindTheScreen and related subreddits.