

Barney Potter

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*My goal is to apply my skills in computer science,
mathematics, and research to a challenging position in
software engineering.*

Languages

Python: 3 years	<i>All thesis work, and most class work. Text-based RPG.</i>
Scala: 1 year	<i>Class work.</i>
HTML: 1 year	<i>Personal website construction.</i>
Java: 6 months	<i>Class work.</i>
C#: 6 months	<i>Game development through Unity.</i>
C++: 6 months	<i>Personal projects.</i>

Computer skills

Operating Systems: Windows, Mac OS X, Unix, Ubuntu
Programming: Algorithm Design, Linear Programming, Computer Graphics, Pipeline Tuning
Web: Git, Google Suite, Social Media
Development Platforms: Unity, Android Studio
Other: L^AT_EX, Inkscape, CPLEX, R

Undergraduate thesis

title: *Modeling Cell Signaling Networks with Prize-Collecting Subhypernetworks*
supervisors: James D. Fix & Anna M. Ritz
description: Developed the notion of a “hypershrib,” a multi-source, multi-target generalization of a hyperpath. Created a formulation that finds specific, prize-dense hypershrubs representative of biological phenomena that went previously unnoticed in standard graph representations. Finally, applied this formulation to the human Hedgehog signaling pathway, related to Basal Cell carcinoma, to analyze the effectiveness of the algorithm in real data.

Education

Reed College <i>B.A. Mathematics & Biology</i> Main subjects: Computer Science, Computational Biology, Genomics	Portland, OR <i>2012-2016</i>
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Experience

Research.....

Reed College

Portland, OR

Research Assistant

2015-2016

Bioinformatic analysis of the effect of whole genome duplication on the transcriptome of *Arabidopsis thaliana*. Design and development of bioinformatic pipelines. Data acquisition and analysis. Molecular biology techniques including DNA/RNA extraction, RNA-Seq (including library preparation), and RNA-FISH.

Detailed achievements:

- Recipient of Summer Undergraduate Research Fellowship, Reed College 2015;
- Presented research poster at Inland Northwest Genomics Research Symposium, University of Idaho 2015;
- Received funding to continue with post-baccalaureate research.

Reed College

Portland, OR

Independent Research

2014-2016

Took part in 6 week independent research projects as part of coursework. Research topics included:

- Impact of predator cues on tadpole development in *Bombina orientalis*.
- Optogenetics in motor neurons of *Drosophila melanogaster*.
- Selection rates in genes correlated with heavy-metal chelation.

Additionally, took part in a semester-long project assessing the gene expression profile of two *A. thaliana* ecotypes following synthetic whole genome duplication.

Teaching.....

Reed College

Portland, OR

Teacher's Assistant & Tutor, Academic Support Services

2104-2016

Oversaw introductory computational biology and genomics labs. Tutored undergraduates in computational biology, introductory computer science, and biology.

Reed College

Portland, OR

Lead Teacher, Reed Science Outreach

2102-2016

Developed and taught science curriculum to students at low-income elementary and middle schools in Portland. Acted as a mentor and role model for at-risk students. Coordinated directly with program manager and classroom teachers to ensure the highest quality of lessons possible for students.

Service.....

Restaurants Unlimited Inc.

Seattle, WA; Portland, OR

Server's Assistant & Food Quality Specialist, Palisade & Portland City Grill

2103-2014

Responsible for timely delivery of food to restaurant guests. Ensured that food met high quality standards, prior to delivery and that used dishware was removed promptly. Facilitated communication between restaurant guests and chefs to maximize the quality of guests' dining experience.

Interests

Birding: Interested in the shorebirds of the Pacific Northwest.

Game Development: Member of Portland Indie Game Squad.

Horticulture: Making diverse garden beds of native Northwestern herbs and flowers.

References

James Fix: jimfix@reed.edu

Thesis co-advisor and academic advisor.

Anna Ritz: aritz@reed.edu

Thesis co-advisor.

Jeremy Coate: jcoate@reed.edu

Research supervisor.