

**Philip Robinson**

Portland, OR 97214

probinso+res@protonmail.com  
206.377.9747

<https://github.com/probinso>

## Personal Statement

I have 7+ years experience, solving increasingly difficult problems with software. My projects span products and research including data pipelines/management, medical informatics, programming languages, computer securities, audio, image, and text processing. I have developed strong interests in scientific computing, information retrieval, machine learning, and education.

## Persistent Experience :

|          |        |       |                   |
|----------|--------|-------|-------------------|
| Python   | C, C++ | Linux | TDD               |
| R, dplyr | TeX    | Git   | Ticketing Systems |

## Work Experience

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### Graduate Research with ACO - Marine Acoustics Engineer (continuing)

Researched deep unsupervised anomaly detectors, for sane indexing of 10 year audio track  
Developed ACO, an intuitive ACO track explorer, to rejuvenate data access for researchers  
Developed principled audio processing and noise-suppression, focused on marine bioacoustics  
**Technologies :** Python, ACOio, tensorflow, scipy.signal, Jupyter

### Thinkful (Part Time) - Data Science Technical Expert Jan. 2019 - present

Advised career transitioners in mastery of professional and data science topics  
Provided safe environment for 1:1 training and instruction in a remote-first setting

### NASA Jet Propulsion Lab - Graduate Data Science Intern June 2018 - Sept. 2018

Designed & developed Expert Modeling/Recommender System, by extending the Author-Topic-Model  
Developed and specified program from use-case meetings with top NASA/JPL employees  
Implemented stable/principled text normalization, tokenization, and model evaluation  
Open Source contributions to the gensim's natural language processing library

**Technologies :** Python, nltk, gensim, pyLDAvis, pandas, Jupyter

### OHSU Fair Neuroimaging Lab - Research Assistant Oct. 2017 - June 2018

Contributed to workflows and analytics tools for studying Microbiome populations  
Supported research on developing brains, including ABCD, and several ADHD/ASD studies  
Developed processing pipeline and audit tools for reported data and FMRI images

**Technologies :** Python, Bash, R, neo4j, ponym, stan, GitLab

## Contractor/Consultant

### RGB Optics / C&W Energy USA (Part Time) Nov. 2015 - Aug. 2018

Developed custom photo image processing tools for low cost spectral profile analysis  
Authored educational material in light pollution's effect on economy, biology, and technology  
Provided live technology tutorials and consulting on optimization and image processing

### ComScore June 2016 - Sept. 2016

Worked to support large, custom, memory mapped, data store for demographic analysis

### Melinae March 2016

Setup infrastructure in AWS to enable secure & sustainable remote-first workflow  
Provided hands on training in Python and R to industry professionals

**Technologies :** Python, numpy, skimage, R, AWS, PostgreSQL, Perl, C++, Jira, ZenHub

### Galois Inc. - Research Engineer April 2014 - Dec 2015

Developed processing pipelines and workflows to enable evaluator work for DARPA programs  
Produced biannual quantitative and qualitative reports on for DARPA and language developers  
Participated in programs sharing new technologies to research and industry professionals

**Technologies :** Python, SLURM, Scala, Figaro, Chimpy, Docker, Jira, Basecamp

### EMC<sup>2</sup> Isilon Storage - Software Development Engineer Dec. 2012 - July 2013

Brought to schedule a lagging anchor release feature in approximately 5 months  
Designed and developed password manager to support Data At Rest Encryption  
Wrote unit tests using libcheck to attain > 80% code coverage

**Technologies :** C, C++, Python, SQLite, Subversion, FreeBSD, OpenSSL

# Neato Projects

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|  |  |
|--|--|
| Multiple Myeloma Clinical Trials custom named-entity boosted topic model | <code>numpy, Python</code>                       |
| Topic modeling and applications, a presentation for non-statisticians    | <code>beamer, <del>TeX</del></code>              |
| Workshop collaborative introduction to GitHub and slides                 | <code>markdown, bash, github.api</code>          |
| Morphological Watershedding Algorithms                                   | <code>pyspark, numpy, ndimage, Python</code>     |
| Relevance Vector Machine   | <code>Julia</code>                               |
| Information Retrieval Cluster/Rank Demo Harness                          | <code>flask, numpy, nltk, sklearn, Python</code> |
| Gene Data Breast Cancer Drug Predictor                                   | <code>R, caret</code>                            |
| Distributed Fully Homomorphic Encryption System                          | <code>Hadoop, Sagemath</code>                    |
| Concurrent Elliptic Curve Cryptography Module                            | <code>Sagemath, Erlang</code>                    |
| Multilingual Analysis of Subordinating and Coordinating Conjunctions     | <code>R, Perl</code>                             |
| AdaRailz Concurrent Model Train Control System                           | <code>Ada</code>                                 |

## Education

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### Oregon Health Science University

CSLU

Computer Science MSc  
2016 - present

*Expected Graduation: Sept. 2019*

#### Courses :

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|---------------------------------------|--|
| ★ Advanced Topics in Machine Learning | ★ Natural Language Processing          |
| Deep Learning                         | ★ Advanced Topics in Signal Processing |
| Machine Learning                      | Speech Signal Processing               |
| Artificial Intelligence               | Problem Solving with Large Clusters    |
| Statistical Methods                   | Image Processing                       |
| Univariate Statistical Analysis       | Information Retrieval                  |
| Analysis of Sequences                 | Computing Ethics                       |

### Western Washington University

Computer Science

Computer Science BS, Mathematics Minor  
June 2012

#### Courses :

- |  |                                       |
|--|---------------------------------------|
| Unix Software Development              | Linear/Non-Linear Data Structures     |
| Windows Software Development           | Discrete Structures                   |
| Operating Systems                      | Formal Languages/Automata             |
| Computer Networks                      | Programming Languages                 |
| Software Project Requirements Analysis | Concurrent Programming                |
| Software Project Design                | Computer Organization I/II            |
| Software Project Implementation        | Probability and Statistical Inference |
| Analysis of Algorithms                 | Object-Oriented Programming in C++    |

#### Electives :

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|--------------------------------|---------------------------------|
| Homomorphic Encryption Systems | Computer Architecture           |
| Cryptography & Elliptic Curves | Number Theory                   |
| Artificial Intelligence        | Elementary Real Analysis        |
| Natural Language Processing    | Abstract Algebra                |
| Functional Programming         | Linear Algebra I/II             |
| Computer Graphics              | Ordinary Differential Equations |