# Abraham Miller

Software Engineer

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*The only thing that will redeem mankind is cooperation.*
*– Bertrand Russell*

## Education

**University of Washington, Seattle**　　　　　　　　　　　　　**September 2015 – March 2020**
*BS/BA Double Degree, Computer Science and Philosophy*
Completed 17 CSE Courses, 12 Intensive Writing Courses – 3.65 GPA

Relevant Skills From Coursework...................................................................................

My project-based academic path in Computer Science prepares me with knowledge of data structures, algorithms, machine learning, time and space complexity, OO and functional programming, Unix CLI; and the Java, C, C++, Python, Ruby, and JavaScript programming languages. My studies in Philosophy train me to be rational, express ideas concisely, and keep the big picture in mind.

## Work Experience

**Giving Tech Labs - Seattle, WA**　　　　　　　　　　　　　**September 2019 – Present**
*Machine Learning Research Fellow*
Create software tools and machine learning models with social and academic significance, focusing on the analysis of *suprasegmental speech sounds*, mainly using *Python, Tensorflow, and C*. This is the Artificial Intelligence for Public Interest fellowship program (AI4PI).

**Ginkgo Bioworks - Boston, MA**　　　　　　　　　　　　　**June 2019 – September 2019**
*Software Engineer Summer Intern*
Add set of features to the laboratory automation and data managment system to create helpful abstraction barriers and improve researcher experience. Complete >40 software engineering tasks (tickets) encompassing 4 distinct projects. The Ginkgo codebase is written in *React, Python, and Ruby on Rails*.

**Impact Fellowship - New York City, NY**　　　　　　　　　　　　　**January 2019**
*Software Engineer Fellow*
Tech for social good national fellowship by Impact Labs. Study software engineering and entrepreneurship, and begin a novel social software project – see *Enfin* below. Brainstorm >200 project ideas before selecting one and creating a successful MVP.

**Klavins Lab, UW - Seattle, WA**　　　　　　　　　　　　　**July 2017 – December 2018**
*Software Engineer Research Assistant*
Develop and maintain *Aquarium*, a holistic laboratory management system intended for synthetic biologists, made with *Ruby on Rails* and *Angular*. As well, programatically encode >50 unique laboratory procedures within a *Ruby DSL* to help researchers across >5 biology labs execute automatable, high-throughput experiments, and aid with extracting and processing data from these experiments using *Python*.

**UW Center for Learning and Undergraduate Enrichment - Seattle, WA**　　　　**March 2017 – June 2017**
*University Logic Educator*
Lead weekly class discussion sessions each with 10-40 attendees on elementary symbolic logic for students taking PHIL120 (Intro to logic). Topics taught include *functions, predicates, relations, quantifiers, soundness, completeness*, and *sets*.

**Pipeline Program - Seattle, WA**　　　　**January 2017 – March 2017, April 2019 - May 2019**
*K-12 Educator*
Create lesson plans and teach philosophy and genetics to 2nd graders and 9th/10th graders respectively as part of a UW college to highschool volunteer program, encompassing >20 lessons.

## Projects/Extracurriculars

**Enfin: Environmental Finance Management**　　　　　　　　　　　　　**January 2019 – Present**
*Fintech Webapp*
Devise and implement application which evaluates a user's financial history to provide analysis of their carbon footprint. Additionally, provides personalized suggestions for reducing emissions and streamlines carbon offset donation. Created with *React, Express.js*, and the *Plaid API*.

**Polymerase Chain Reaction Batching Optimizer**　　　　　　　　　　　　　**August 2018**
*Ruby Gem for Biologists*
Invent bottom-up clustering algorithm in *Ruby* for grouping together PCRs with similar reaction conditions so that they can be run in the same thermocycler. Exploits *gradient PCR* to maximize reactions per thermocycler. At the UW BIOFAB alone, >200 reactions per month are rendered more efficient by this program. In the best case, 96 reactions that ordinarily would need to be separately run can now be batched into a single thermocycler. One of several important software artifacts created while working at Klavins Lab.

**Phi Beta Kappa Member**　　　　　　　　　　　　　**May 2017 – Present**
*America's Oldest and Most Prestigious Academic Honor Society*