Ben MacMillan

Computer Science Major • Data Science Research Assistant

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Skills

Languages	Python • SQL • C / C++ • Java • Bash
Libraries	Numpy • Pandas • PyTorch • TensorFlow • JDBC
Tools	Spark • AWS • Azure • Tableau • Git

Experience

GEMSEC Biomimetics Lab — **Seattle, WA • Feb 2017 - Present**

Data Science Research Assistant

- Built and trained the primary convolutional neural network used by the lab for order analysis of self-assembled peptides on single layer atomic materials in PyTorch.
- Designed the schema for and built the lab's relational database in SQL.
- Built and maintain the data pipeline in Python which allows researchers to pull data from the database with a simple interface of functions.

Paul G. Allen School of Computer Science — **Seattle, WA • Sep 2017 - Dec 2018**

Computer Science Teaching Assistant

- Rated 4.8 / 5.0 overall by my students across 5 quarters of teaching.
- Taught classes of 20-25 students twice a week.
- Topics included: linked lists, binary trees, hashmaps, recursion, sorting, logic and proofs, number theory, set theory, graphs, finite state machines, and computability.
- Held office hours 2 hours every week.

Earthgames Studio — **Seattle, WA • Jun 2017 - Aug 2017**

Software Engineering Intern

- Lead software developer on team of 5.
- Built 2 games, both meant to demystify certain aspects of climate change for children.

Education

University of Washington — **Seattle, WA • Sep 2016 - June 2020**

B.S. Computer Science • GPA: 3.45

Coursework:

Data Science	Machine Learning • Artificial Intelligence • Databases I, II • ML for Big Data
Software Eng	Data Structures and Parallelism • System and Software Tools
Theory	Foundations of Computing • Statistics and Probability for Computer Science
Systems	HW/SW Interface • Systems Programming • Security • Distributed Systems

Projects

Financial Portfolio Optimizer [Github]: Maximizes return/risk ratio of a given financial portfolio.
Genetic Neural Networks [Github]: Evolutionary strategy applied to the game of Tic Tac Toe.
Retinopathy Grader [Github]: Convolutional neural network which classifies retina sickness.