

EDUCATION

Cornell University GPA: 3.7

Expected graduation date: May 2022

PROFESSIONAL EXPERIENCE

Cornell University (Dexter Kozen's research group)

Undergraduate Research Assistant

Current

- Defining denotational semantics of a language with mixed (parallel and sequential) operations using linear logic and category theory

Teaching Assistant for CS 3110 – Functional Programming and Data Structures (OCaml)

Current

- Hold twice weekly office hours and answer question on an online forum
- Grade coding assignments
- Hold weekly discussion section, clarifying material covered in lecture and assigning extra problems
- Beta test weekly lab assignments

Consultant for CS 2112 – Honors Object Oriented Programming and Data Structures (Java)

Fall 2019

- Held weekly office hours and answer question on an online forum
- Graded coding assignments and problem sets
- Took charge of an assignment which included writing a problem set, answering the majority of student questions related to this project, and developing a grading rubric for the assignment

Self Employed

Math and Computer Science Tutor

Current

- Teaching middle school algebra and geometry
- Teaching introduction to Python using game development via Processing

Weill Cornell Medicine, Institute of Computational Biomedicine (Olivier Elemento's research group)

Research Intern

- Developed an automated pipeline for detecting minimal residual disease in flow cytometry data using a random forest tree approach, achieving greater than 85% accuracy on cell by cell basis, and a greater than 95% accuracy on a sample by sample basis *Summer 2019*

Software Engineer Intern

Summers 2016, 2017, 2018

- Developed Holo Graph, a medical graph visualization tool for Windows Mixed Reality Devices (C#, Unity 3D) (featured in Microsoft Windows Mixed Reality Blog)
- Developed DropSeq, a nucleic acid sequencing analysis tool
- Led discussions during weekly laboratory meetings
- Led a group of 3 High School students in the development of an organoid visualization tool (2018)

PRESENTATIONS AND ABSTRACTS

AMP 2020 – mrLab: Leveraging Mixed Reality in a Precision Medicine Laboratory to increase safety and productivity of healthcare workers during the COVID-19 pandemic

2020

Authors: Alexandros Sigaras, Jackson Davis, Sophia Roshal, David Wilkes, Casey Hebding, Daniel Bockelman, Troy Kane, Sarah Ackerman, Michael Sigouros, Jeffrey Catalano, M. Laura Martin, Wei Song, Juan Miguel Mosquera, Cora N. Sternberg, Massimo Loda, Harel Weinstein, Andrea Sboner, Olivier Elemento

The Englander Institute for Precision Medicine – Automated Classification of Flow Cytometry Data

2019

Using Random Forest Trees

Authors: Sophia Roshal, Olivier Elemento