Alex Lu

Berkeley, CA | alexlu876@berkeley.edu | www.alexlu.net

Education

University of California - Berkeley May 2022
Double Major: Mathematics and Computer Science GPA: 4.0
Courses: Data Structures, Discrete Math, Linear Algebra, Probability and Random Processes

Experience

NYC Math Team **Nov 2015 - Present**

- Currently work for and once competed for NYC's Math Team.
  - Problem writer and organizer for the NYCIML, NYC's premier high school math contest given to 450 students between 30 schools around NYC
  - Team Captain (2017-18), lead team to an 8 place improvement at national competition, organized weekly practices for about 60 team members, and monthly practices for 120 team members.
  - Teaching assistant for Summer ('18) program for about 120 underclassmen, taught topics in algebra and number theory, and helped with administrative duties.

Machine Learning @ Berkeley **Feb 2019 - Present**

- Improved ML knowledge by participating in new member education program
  - Spend about 12 hours a week learning and implementing fundamental ideas and algorithms of machine learning, including Neural Nets, CNNs, and RL.

Neuroscience Research Institute **Jan 2016 - Jun 2017**

- Researched under Prof. Wei Zhu, results won Siemen's Semifinalist Award
  - Conducted research to examine effects of Halofuginone on colorectal cancer cells, observed decrease in quantity of cancerous cells over time, as well as inhibited ability to spread to healthy cells when exposed to HF

Projects

NYCIML Scoring System
- Helped to developed a web application for recording scores and compiling data of roughly 300 students for NYC's local math league, to be used by ~30 schools around NYC.
- Data processed and stored using SQLAlchemy, front end designed using HTML/CSS, Javascript, and MD.

Graphics Engine
- Developed a graphics engine using C, capable of generating ppms and gifs, included implementation of ideas such as ray tracing, splines, animation, and 3-D visuals.
- Implemented a simple language, compiler, and parser for compatibility with the engine.

Musical Chairs
- Modeled a modified version of the musical chairs game where machines on the same network can play locally, applied networking, semaphores, 3-way handshake.

Skills

Python, Java, C, Numpy, Pandas, Scikit-learn, Tensorflow, Keras, HTML/CSS, SQL