

# Joseph Li

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## Education

### Carnegie Mellon University

B.S. IN COMPUTER SCIENCE

Pittsburgh, PA

Aug 2019 - May 2023

- GPA: 4.00
- Coursework: Intro to Deep Learning, Computer Vision, Intro to Computer Systems, Theoretical Computer Science

### Saratoga High School

SCIENCE CLUB PRESIDENT · SCIENCE BOWL CAPTAIN · COMPUTER SCIENCE CLUB VP · ZERO ROBOTICS VP

Saratoga, CA

Aug 2015 - Jun 2019

- GPA: 4.0/4.0 (Unweighted) · 4.7 (Weighted), Graduated with Very High Honors

## Work Experience

### Bear Robotics

INTERN

Redwood City, CA

Jul 2019 - Aug 2019

- Optimized 3D vision pipeline using Nvidia's CUDA C to free CPU usage for backend computation
- Improved global path planning for autonomous robot navigation in C++ and ROS
- Documented all work in Jira wiki pages

## Research

### Research @ MultiComp Lab under Prof Louis-Philippe Morency and Amir Zadeh

Carnegie Mellon University, PA

RESEARCHER

Sep 2019 - Present

- Improving the LTI OpenFace2.0 facial landmark detection algorithm
- Converting OpenFace2.0 to Python and publishing on PyPI
- Developing Python package for low-latency real-time distributed CV inference across a computer workforce
- Extended research into the summer of 2020 while funded under an REU grant

### Detecting an Upward Terrestrial Gamma-Ray Flash from its Reverse Positron Beam

University of California, Santa Cruz

RESEARCHER

Jun 2018 - Aug 2018

- Determining the causes of gamma-ray flashes during thunderstorms through Monte Carlo simulation methods
- Co-authored paper accepted to AGU (American Geophysical Union) Conference, 2018. Published to Journal of Geophysical Research, 2020

## Skills

Python (Advanced): Multiprocessing, AsyncIO, ZMQ, PyTorch, TF, OpenCV • C++ (Advanced) • C (Proficient) • Java (Proficient) • AWS

## Awards & Honors

- '18, '19 **Platinum Division**, USACO (USA Computing Olympiad)
- '17, '18, '19 **Semi-Finalist, Silver Medalist**, USAPhO (USA Physics Olympiad) Top 70 Nationwide
- '18, '19 **Top 10 Individual Score**, AAPT Physics Bowl Top 10 Nationwide
- '16 - '19 **AIME Qualifier**, American Invitational Mathematics Examination Top 2.5% Nationally

## Activities

### ScottyLabs

PROJECT LEAD

Carnegie Mellon University, PA

Sep 2019 - Present

- Project lead for new Android Print App to allow students to print from their Android Phone
- Created new API that parses CMU campus printer error codes, signals, and tray statuses
- Helped build new mentor queue system for TartanHacks hackathon to enable greater mentor participation

### rhythmic.live: MakeMIT 2020

Cambridge, MA

PARTICIPANT

Sep 2020

- Created a web application to enable asynchronous music rehearsal.
- Wrote Python web server to distribute sheet music and splice and stream audio.
- Won NASDAQ live music challenge.

### Saratoga High School Math Club

Saratoga, CA

TEACHER

Aug 2015 - Mar 2017

- Taught competition math to students at Redwood Middle School at weekly sessions. Wrote course content and led a class of 20 students.

### Mentor

Saratoga, CA

SARATOGA SCIENCE CLUB

May 2020 - Aug 2020

- Mentored high school students on how to approach college life
- Taught AP Computer Science concepts over Zoom, developed weekly lesson plans, assigned homework, and maintained high levels of communication with students through email and messaging