Allen Ma

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Education

Dartmouth College — Hanover, NH, USA
Bachelor of Computer Engineering — Graduation in 2022 is optional
Relevant coursework: Software Design and Implementation in C

Colby College — Waterville, ME, USA
Bachelor of Computer Science and Mathematical Sciences **GPA: 3.9/4.0** — Graduating 2021
Data Structures and Algorithms, Embedded Systems, Computer Vision, Computer Architecture

Technical Skills

Proficient Languages:	Python, C, C++, Java
Familiar Languages:	Javascript, Swift, Go, Bash, Haskell
Machine Learning/Statistics:	Keras, Tensorflow, OpenCV, Scipy
Other skills:	Linux, git, Fusion360, LaTeX, 3D printing, laser cutting

Work Experience

Computer Vision Researcher — **Colby College CS Department** — Jun 2019 to Aug 2019

- Trained novel neural network architectures in Tensorflow to separate shadows from images; produced results that fooled the eye
- Developed algorithms to generate various illumination and texture images
- Constructed unique database of 40,000 computer-generated and 2,000 real images

Data Analysis Intern — **Eariously** — Jan 2019 to Feb 2019

- Wrote automated scripts by leveraging the Python Gmail API to scrape college newsfeed
- Analyzed scraped data to uncover redundancies/duplicates and spam
- Results prompted the development of a "daily digest feature"
- Worked with the startup's co-founders, 10 interns, and more than 200 students to prioritize software development backlog

Full-stack Developer — **Colby College Economics Department** — Nov 2017 to Mar 2018

- Developed a multiplayer browser-based economics game using Python's Django/ oTree framework and ChartJS
- Successfully deployed the game on three different testing occasions each with 30 concurrent players on the same server
- Continually revised the codebase to fit the changing requirements of the project

Personal Projects

CampusRides

- iOS app written in Swift, using Firebase as a real-time server
- Allows students to request a ride and track the location of a shuttle, greatly improving the current system of having to make ad-hoc calls to the driver and not knowing where or how far the shuttle is from you

QuakerScorer

- iOS app to recognize digits on a scorecard using Swift as frontend and Python, OpenCV, and a Keras neural network as backend
- Developed innovative algorithms to interpolate bounding boxes of digits

Tiny Search Engine

- Developed a multi-threaded crawler, indexer, and querier in C to retrieve and rank webpages

Self-balancing Robot

- Designed, 3D printed, and programmed a ATMega328p microntroller in C to control a robot using PID to balance itself

Awards

- **Won best use of Google Cloud Platform prize** - Colby Bates Bowdoin Hackathon 2018
- **Top 10% out of 10,000 teams** - COMAP Mathematical Contest in Modeling 2019