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# Emmaline Mai

http://emmaline01.github.io/

## EDUCATION

**Carnegie Mellon University** — Pittsburgh, PA — May 2023

- B.S. Computer Science, Minors in Robotics and Media Design
- Cumulative GPA: 3.74
- Relevant courses: Imperative Computation, Functional Programming, Computer Systems, Theoretical Computer Science, Parallel & Sequential Data Structures & Algorithms, Robot Kinematics & Dynamics, Feedback Control

**Lynbrook High, Valedictorian** — San Jose, CA — June 2019

## EMPLOYMENT

**Automation Controls Engineering Intern** — Tesla, Inc. — summer 2021

- Helped bring a pilot production line to the start of production by developing machine controls with PLC ladder logic, interfacing with the Manufacturing Execution System, and designing HMIs (Human-Machine Interfaces)

**Teaching Assistant** — Carnegie Mellon University — spring, summers 1&2 2020

- Worked with other 15-112: Fundamentals of Programming and Computer Science course staff to teach recitations, labs, and review sessions, hold office hours and hackathons, and mentor students through their term projects

**Assistant Instructor** — Galileo Learning — summer 2019

- Worked with instructors to teach kids to make projects with 3D digital animation and IOS development

**Teaching Assistant** — Digital Media Academy — summer 2018

- Worked with instructors to teach kids coding/AI concepts, robotics, digital animation, and electronics

## PROJECTS

**Cardistry Dashboard web app** (2021). Python (Flask), JavaScript (React), SQL

- Tracks cardistry (playing card flourishing) moves learned in a database hosted by Microsoft Azure
- Uses a Markov chain to generate suggested move combinations based on desired sequence parameters
- Uses the YouTube Data API for displaying recommended tutorials based on properties of moves currently learned

**ELM (Enrich, Learn, Motivate) app** (2020). Java (Android Studio)

- Manages a database and instantly connects tutees with tutors for any subject through a video call session

**Square Jumper platformer game** (2019). Python OpenCV

- Uses computer vision color detection for game interaction and modified Dijkstra's algorithm for enemy pathfinding

## SKILLS

Proficient: Python, C, Standard ML, ladder logic (Allen-Bradley), HMI programming (Ignition)
Basic: MATLAB, Java, C++, SQL

## ADDITIONAL ACTIVITIES & AWARDS

**Research Assistant** — CMU Biorobotics Lab — 2020-present

- Using MATLAB to develop a directional compliance strategy for autonomous snake robot locomotion

**Hardware Lead & Software Member** — CMU RoboClub — 2019-present

- Designing and building a robotically played ukulele using Arduino
- Processing data from computer vision detecting physical conducting

**Team Member** — CMU Sweepstakes Team — 2019-present

- Helping to construct new buggies (unmotorized carbon fiber vehicles) and maintain past buggies for races

**Mechanical & Animation Director** — FIRST Robotics — 2015-2019

- 2016-19 Regional Chairman's Award Winner, 2019 Regional Winner
- Led a team to design and build an elevator mechanism for the robot to climb onto an elevated platform

**Carnegie Mellon University School of Computer Science Dean's List** — fall 2019

**NCWIT Award for Aspirations in Computing National Honorable Mention & Affiliate Award** — 2019