Michael Guan

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Education

- **Cornell University** Ithaca, NY
  College of Engineering Class of 2022; Cumulative GPA: 3.98 *Aug. 2018 – May. 2022*
  - **Major**: B.S. in Computer Science
  - **Minor**: Double Minor in Electrical/Computer Engineering and Game Design
- **Ithaca High School** Ithaca, NY
  Class of 2018; GPA: 4.17 *Sep. 2014 – June. 2018*
  - **Extracurriculars**: Captain of Science Olympiad, Vice President of Math Club, and an avid member of Dev Team and the Varsity Swim Team
  - **Awards**: First Place Science Olympiad Regionals, New Your State Math League Team Top Scorer, AP+PLTW Student Achievement in Engineering, PTA Award for Science and Technology

Relevant Courses

- **Computer Science**: CS 2112: Honors Object Oriented Programming, CS 2800: Discrete Structures, CS 3110: Functional Programming, CS 4700: Intro to Artificial Intelligence, CS 4820: Intro to Analysis of Algorithms
- **Electrical and Computer Engineeering**: ECE 2300: Digital Logic and Computer Organization, ECE 2400: Computer Systems Programming, CS 3420: Embedded Systems

Experience

- **Cornell Hyperloop** Ithaca, NY
  Software Subteam Member *Sep. 2019 - Present*
  - **Graphical User Interface**: Design and implement a graphical user interface to allow for human interaction with the Cornell Hyperloop pod during testing and competition. This allows users to monitor the state of the pod and receive live data from the pod sensors.
- **Coding4Youth** Cupertino, CA
  Computer Science Instructor *May 2019 - Sep. 2019*

  Courses Taught:
  - **Intro to Python and Artificial Intelligence**: Introduced the foundations of the Python programming language and explored the use of graphical user interfaces using the TKinter library
  - **Intro to Java Game Programming**: Taught and demonstrated the basics of the Java programming language as well as various game design practices.
  - **AP Java I**: Taught high school students the fundamentals of Java to help prepare them for the AP Computer Science exam.
- **Cornell University** Ithaca, NY
  Research Assistant *Dec. 2017 - Apr. 2018*
  - **Underground Tunnel Simulation**: Modeled an underground subway tunnel using Blender and Unreal Engine and performed simulations by tracking moving objects in the tunnel. Created a 3d model of a humanoid figure and simulated a person walking through the underground tunnel.

Projects

- **Marble Sorter**: Built a device that uses VEX® motors and light sensors as well as 3d printed parts that sorts glass marbles based on color.
- **Critter World**: Implemented in a group of three people a Java program to simulate artificial life and behaviors. This project included the construction of an interpreted language to help create "critters" with different traits and behaviors and a graphical user interface to help visualize and interact with the critter world.
- **Pokémon Project**: Created a program in Python that utilizes machine learning algorithms to predict the type of a Pokémon based on its base statistics (Attack, Defense, HP, Speed, etc.) By using a Support Vector Machine and a Random Forest Classifier, the model was able to correctly classify the type approximately 26.8% of the time.
- **Chess Game AI**: Implemented a chess application using functional programming(OCaml) and the Graphics GUI package to allow two human players to play the standard game of chess. Extended this game with an AI that uses a minimax game tree search algorithm enhanced using alpha-beta pruning

Skills

- **Languages**: Python, Java, C, C++, OCaml, Javascript, HTML, CSS, SQL
- **Tools**: CAD Software, Multisim, Unix, Git, LaTeX, JSON, Blender, Verilog, Arduino, PyQt, Pandas