William Wang

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EDUCATION

Columbia University, Fu Foundation School of Engineering and Applied Science   **New York, NY**
Bachelor of Science, Electrical Engineering   *August 2022 – Present*
Expected Graduation: May 2027

Polytechnic School   **Pasadena, CA**
GPA: 4.15   *August 2018 – June 2022*
John Locke Essay Competition – Commendation in History, AIME Qualifier, National Chemistry Olympiad Nominee

EXPERIENCE

MeetKai   **Los Angeles, CA**
Front-End Intern   *June 2023 – August 2023*
- Developed ray cast vehicle physics and controls for webapp to be used by all Metaverse worlds.
- Used Rust compiled web-assembly and Typescript to implement Pacejka's magic formula for tire physics, suspension models using $f=kx$, debugging high-speed crashes with physics engine, set up generalized vehicle implementation, and created new mobile UI.

Columbia Daily Spectator   **New York, NY**
Product Designer   *September 2022 – Present*
- Learned in-depth process of analyzing market potential of developing products and how to evaluate the market through carefully crafted discrete and explicit customer survey questions.
- Used Figma to create the user interface designs for the new Columbia Spectator app.

Columbia University Formula Racing   **New York, NY**
Dynamics and Low Voltage Researcher   *September 2022 – Present*
- Researched and pitched various suspension ideas to the team before designing the new A-arms using SolidWorks including meeting machining standards through timely communication with school's machinist.
- In charge of soldering and testing low voltage circuits such as BSPD using oscilloscopes and multimeters.

Armani Lab USC   **Los Angeles, CA**
Research Intern   *June 2021 – August 2021*
- Collaborated with 2 Ph.D. students and 2 professors in research studying tunable optical diffraction gratings.
- Manufactured PDMS diffraction gratings, facilitated experimental procedures, and recorded data.
- Led and automated data analysis of experimental results through image processing using Python and various modules such as Matplotlib, NumPy, SciPy, OpenCV, and PIL in a published, peer-reviewed research paper.

PROJECTS

Robot Leg   **Pasadena, CA**
     2024
- *Skills: Arduino, Electrical Design, CAN, SolidWorks CAD*
- Designed a 2 DOF robotic leg and its associated testing jig using SolidWorks. Controlled both actuators with Odrive S1 controllers and used a CAN line to communicate. Solved the inverse kinematics and dynamics for the robotic leg. More information on personal website.

Robot Actuator   **Pasadena, CA**
     2023
- *Skills: SolidWorks CAD, 3D Printing, Mechanical Design*
- Designed a robotic actuator on SolidWorks CAD, producing a peak torque of 20 N*m at 20 A with a 6:1 planetary gearbox. More design specs on personal website.

Whack a Mole   **Pasadena, CA**
     2022
- *Skills: Arduino, Electrical Design, SolidWorks CAD*
- Designed a Whack a Mole game using one Arduino Uno, Shift Registers, LED Buttons, Resistors, and LCD display.

Amazon Scraper   **Pasadena, CA**
     2023
- *Skills: Full-Stack Development, Nodejs, React, Expressjs, Nginx*
- Developed a website that analyses data from Amazon using an Express framework for the backend, Nginx reverse proxy, and React framework for the frontend.

ADDITIONAL SKILLS AND INTERESTS

- **Technical Skills:** Python, Java, Figma, SolidWorks CAD, Arduino, JavaScript, CAN
- **Languages:** English (Fluent) and Mandarin (Conversational)
- **Interests:** Badminton, Running, Piano, Beetle Keeping

Personal Website: **wwang22.com**