Michelle Wang

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Education

Massachusetts Institute of Technology, Cambridge, MA — Class of 2027

GPA: 5.0/5.0 *Major:* Computation and Cognition *Minor:* Mechanical Engineering

Relevant Coursework: Fundamentals of Programming, Discrete Math for CS, Differential Equations

Carbondale Community High School, Carbondale, IL — Class of 2023

Awards: Valedictorian, National Merit Scholar, US Presidential Scholar Finalist, AIME 2x qualifier

Research & Work Experience

Intern, John Deere Intelligent Solutions Group, Fargo, ND — Summer, 2024

- Building Large Language Model (LLM) companion to retrieve and interpret sensor quality assurance reports from the past 20 years; cleaned, chunked, and uploaded report text into Deere's data lake.
- Designing real-time front-end data visualizations (React + socket.io) for sensors on Gator vehicles.

Undergraduate Research Assistant, Improbable AI group, MIT CSAIL — 2024-present

- Developed python programs for teleoperation and multimodal data collection (images, joint trajectories, torque sensors, etc.) on a mobile, bimanual robot; investigating Action Chunking Transformer (ACT) and diffusion policies for imitation learning; exploring implicitly learning active perception using an actuated "neck" to handle visually occluded/challenging manipulation tasks.

Team member and Business Lead, MIT Assistive Technology Team — 2023-present

- Recruiting/communicating with external sponsors and working with treasurer to manage budget.
- Worked in a team of 10 to develop an assistive feeding robot for people with limited upper body mobility; designed and fabricated a novel utensil; co-led electronics and software development.

Independent Research — 2019-2023

- Autonomous Drone and Drone Swarm (repo, 2021-2023): Built a custom X500 quadcopter with onboard Jetson Xavier GPU and RealSense camera for autonomous object detection and tracking; the developed software includes modules for vision, navigation & control, YOLOv4 convolutional neural network (CNN), a custom CNN for object pose estimation, and collaborative wingmen drone control programs.
  - *Won 2nd place oral presentation at the 2022 National Junior Science and Humanities Symposium (JSHS)*
  - *Won both 4th place grand award in robotics category and Air Force Research Labs award at ISEF 2023*
- IMU-Based Wearable Device for Gait Analysis (repo, 2019-2021): Built an Arduino and IMU-based wearable device, developed Python programs to process sensor data to track knee angle, and designed and trained an artificial neural network (ANN) to classify running forms.
  - *Won 1st place at 2021 IL JSHS and 3rd place at 2020 IL JSHS, respectively.*

Other Activities

MIT Edgerton Center — 2023-2024

- *Edgerton Outreach Instructor*: Teach hands-on STEM activities to students from nearby schools.

Illinois 4-H — 2019-2023

- *Member of Statewide Youth Leadership Team* (2021-2023): Plan and implement statewide events, advise statewide committees, and lobby for 4-H to state legislators.
- *STEM Club Organizer and Youth Teacher*: Taught Scratch programming, Python, drones, AI, and other STEM topics in 5 clubs reaching 300 plus local youth; secured $3000 in grants to support club projects.

Hunan Restaurant, Carbondale, IL — 01/2023-08/2023

- *Hostess*: Interacted with customers and communicated with servers in a very fast-paced environment

Skills & Interests

Software: Python, Tensorflow/Keras, ROS1/ROS2, Arduino, OpenCV, Git, Unix, Docker, Unity/C#

Other: 3D modeling/CAD (Fusion 360), 3D printing/rapid prototyping, machining (mill & lathe), Photoshop