ZHIYAN, GAO

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Education

Carnegie Mellon University **Pittsburgh, PA**
Master of Science in Mechanical Engineering-Research (GPA:3.88/4.0) May 2026

Important Courses Taken
ML&AI (A), Computer Vision (A), Intermediate Deep Learning for Engineers (A)

University of Wisconsin-Madison **Madison, WI**
Bachelor of Science in Mechanical Engineering (GPA:3.64/4.0) May 2024

Internship Experience

Department of Mechanical Engineering, Carnegie Mellon University **Pittsburgh, PA**
Teaching Assistant: Machine Learning and Artificial Intelligence for Engineers (24787) Sep. 2025 – Present

- Grade homework, hold Office Hours, and answer students' questions weekly for ML&AI.

FDIsystems **Anhui, China**
Intern June 2024 - Aug. 2024

- Designed the structure of wheel-legged robots, optimizing internal layout for a 20% increase in space utilization.
- Led the assembly, structural-functional testing, and troubleshooting of robots. Resolve stability issues in serial robots with new motors, identified incorrect motor specifications supplied by the vendor.
- Spearheaded the procurement and customization of critical spare parts, including motors and batteries.

Research Experience

Robotic de-powdering for additive manufacturing (CERLab) **Pittsburgh, PA**
Research Assistant (Advisor: Prof. Kenji Shimada) Sep. 2024 - Present

- Develop a robotic depowdering system that can be applied to various Additive Manufacturing (AM) machines.
- Connect the RealSense 515 lidar to the existing robotic arm system to recognizes the surface shape of the powder bed and develop algorism for the vacuum to plan the route according to the shape.

Smart Manufacturing Project (CERLab) **Pittsburgh, PA**
Research Assistant (Advisor: Prof. Kenji Shimada) May. 2025 – Sep.2025

- Control Universal Robot arm and Zivid 2+ M60 Lidar to scan industrial parts for 3D models.
- Use Python Tkinter to build a control panel for the Lidar to build the environment and call 24 services.

Wisconsin Expeditious Legged Locomotion Laboratory (UW WELL Lab) **Madison, WI**
Research Assistant (Advisor: Prof. Xiaobin XIONG) Oct. 2023 – May 2024

- Designed the structure, including the design of leg accessories enabling the robot to move quickly across the ice, and a 2:1 planetary gear reduction box that built into the robot's internal transmission structure.

Academic Projects

Torsobot Project **Madison, WI**
Group Leader Oct. 2023 – May. 2024

- Engage in research works like fixing up the drivetrain, improving the controller, testing its performance once that is tuned well, and potentially adding a "push-off" functionality to approximate ankle function

Drummer Robot Project **Madison, WI**
Core Member Feb. 2023 - May 2023

- Led the design of a robotic system to play drums on an iPad using dual robotic arms with styluses.
- Constructed ROS networking to control robotic arms using 2 Raspberry Pi with 4 nodes and 4 messages.
- Developed kinematics algorithm to calculate 11 striking area coordinates using a midpoint-based coordinate system.

Skills

Engineering: Data Analysis, Design, Modeling, Testing
Manufacturing: Lathe, CNC Mill, 3D-Printing, Laser-cutting
3D Modeling & FEA: SolidWorks, Fusion 360, ANSYS, UG
Programing Language: Python, R, MATLAB
Robotics: ROS1&2, Docker, MoveIt, OpenCV
Computation & Experiment: EES, LabVIEW, Moldex3d