Gabriella Giachini

Cell. +1 (765) 237 8986 ggiachin@purdue.edu https://ggiachin.github.io/

EDUCATION

Purdue University, West Lafayette, IN *Aug. 2019 - May 2024*
Master of Science in Mechanical Engineering, in Robotics and Controls *GPA 4.00/4.00*
Bachelor of Science in Mechanical Engineering, Minor in Computer Science *GPA 3.87/4.00*

SKILLS

Technical skills: CAD, C, MATLAB, LabVIEW, SQL, ROS2, Arduino, Python, Assembly, PyTorch, Jax
Machining instruments: Lathe, CNC Mill, Universal Testing Machine, 3D printers
Languages: English (fluent), Spanish (native), Italian (native)

PROFESSIONAL EXPERIENCE

Ethium Manufacturing Engineering Intern, EControls, San Antonio TX *May – Aug. 2021, 2022*

- Designed and tested fixture to fully automate the un-wrapping of battery cells, presented to CEO.
- Developed a LabVIEW program that tracks production status of battery modules by drawing and displaying real-time data from EControls' Manufacturing SQL database.
- Optimized Ethium's manufacturing line and set production goals by redistributing tasks to operators.

Teaching Assistant, Purdue University *Aug. 2020 – May 2021, Aug.2022 – May 2024*

- Guide 40 students in Measurement and Control Systems I/II (ME 365/375) and First-Year Engineering (ENGR 131/2) courses with assignments during lectures and laboratories, helping them understand class concepts and teaching teamwork, communication, and analytical skills.

PROJECTS

Multi-Agent Robotic Project, Corallab Lab at Purdue *Aug. 2023 – May 2024*

- Implement an HSV-based image processing localization model and robust state-estimation controller to navigate multiple robots in performing neural rearrangement of objects in cluttered environments.

AI-Driven Production Monitoring, Mechanical Engineering dept at Purdue *Feb. – May 2024*

- Partnered with Dayton Phoenix Group Inc. to automate in real-time the production log for their J-Series resistors.
- Implemented 90% accurate convolutional neural network model using sound sensor data.

Hate Speech Detection using Machine Learning, ECE dept at Purdue *Oct. – Dec. 2023*

- Replicated research paper "Hate Speech Detection using Attention-based LSTM" from scratch, using Twitter data. Achieved an F1 score 0.803, which deviates by 7% from the score reported in the paper.

Navigation in Dynamic Environments w/ SPOT robot, CompSci dept. at Purdue *March - May 2023*

- Trained imitation learning model with SCAND dataset to navigate Spot robot in social dynamic environments using RRT (rapidly-exploring random tree) planner. Model tested on Gazebo simulation.

Semiconductor Hotspot Detector, Mechanical Engineering dept. at Purdue *Jan. – May. 2023*

- Managed controls and electrical team in the development and testing of the precise 2-axis motor movement operation and assembly of a semiconductor hotspot imitation system.

Mechatronics World Cup Competition, Mechanical Engineering dept. at Purdue *Aug. – Dec. 2022*

- Led electrical and software team in the design, manufacturing and debugging of a fully automated soccer-playing robot that seeks, acquires, aims and scores a ball accurately 4/5 times, under a minute.

Time Attack Competition, Mechanical Engineering dept. at Purdue *April – May 2022*

- Headed team of three engineers to code a fast and precise line-follower robot for the Mechanical Engineering System Modeling and Analysis course competition and received third place award.

LEADERSHIP & INVOLVEMENT

Formula Society of Automotive Engineers (SAE), Purdue University *Sept. 2019 – Dec. 2022*
Education Team Leader & Chassis Team Member

- Created onboarding project to train new members on tools the team uses.
- Produced jigs to assemble chassis by employing CAD, manual, and CNC mills.
- Analyzed, manufactured, and tested firewall, floor pan carbon fiber panels, and impact attenuator.
- Conducted safety analysis on car parts by executing simulations with FEA.