Akul Ramasubban

aramasub@purdue.edu | linkedin.com/akulramasubban | 650-313-7267 | San Francisco, CA

Education

Purdue University ***West Lafayette, IN***

B.S in Mechanical Engineering- Presidential scholar ***July 2023 – May 2027***

Technical Experience

Ford Motor Company

Product Development Intern- Forward Model Quality ***May 2025 – August 2025***

- Facilitated a Six Sigma 3L5Y root-cause panel for a faulty fuel-injector tip; implemented supplier pre-ship containment, preventing potential field issues and enabling quick response to NHTSA recall.
- Improved model-based design process using MagicDraw to accelerate DFMEA development for engine systems.
- Mapped real-world customer usage and refined test methods, increasing in-field quality by **20%**.
- Redesigned operator instruction sheet after multiple plant Gemba visits, boosting UAW operator efficiency.
- Supported accelerated fatigue testing to improve the accuracy of part-to-part robustness assessments.

Purdue Electric Racing (PER)

Senior Battery Advisor/ Module Project Lead ***August 2023- Present***

- Designed a waterproof battery enclosure that achieved **100%** leak-free performance during tech inspection.
- Engineered a Simscape battery model to improve peak battery performance and increase pack efficiency.
- Led module redesign for space optimization, increasing energy density by **30%** in the new architecture.
- Designed a thermal interface and spacer system to improve cooling, enhancing battery performance by **10%.**
- Developed high-accuracy cooling plate validation test for edge cases using Arduino, helped achieve top 10 finish.

Autonomous Robotics and Intelligent Embedded Systems Lab- Purdue University

Undergraduate Researcher ***August 2025 – Jan 2026***

- Designed and integrated a multi-axis robotic testbed; implemented closed-loop motion control in ROS 2 with encoder feedback, motor drivers using I2C communication, and integration with bio-stimuli.
- Ran experiments with a bio-responsive material that generates electrical output under controlled conditions; translated the signal to drive low-power actuation, and worked to utilize the output for transportation.
- Building fixtures to characterize response, and data-acquisition firmware to condition and analyze biosignals.

Purdue AI Racing team- VIP Undergraduate Researcher

Undergraduate Researcher ***July 2025 – Present***

- Implemented NRHDG optimization algorithm for multi-agent drones operating over dynamic maps in Python.
- Integrated plant models and LiDAR sensor data in Simulink to enable accurate NRHDG-based track mapping.
- Created PID control algorithms to support rapid directional changes in drone path-planning simulations.

MathWorks Inc.

Campus Ambassador ***February 2025- Present***

- Directed hands-on drone path Simulink workshop for student orgs, increasing student participation by **40%.**
- Organized technical workshops, student competitions, and department partnerships to increase Simulink adoption.
- Enabled students' access to MATLAB resources by hosting demos aligned with academic and research use cases.

Tredence Inc.

Data Science Intern ***May 2024 – August 2024***

- Identified sector trends using NumPy and Matplotlib libraries in Python to inform retail decisions for clients.
- Devised multiple regression models to analyze supply chain data, reducing costs for key customers by **15%.**
- Leveraged data cleaning, analysis, and visualization skills using SQL to drive scalable insights and strategies.

The Pushcart Project

Founder- Personal Project ***January 2021– August 2023***

- Produced a functional electric waste-pushcart prototype in Bangalore, India, from the ground up for **<$2000**.
- Donated prototype to a local waste market to assist elderly workers operate heavy carts, promoting social impact.
- Advocated for and facilitated transition from internal combustion alternatives to greener e-cart solutions.

Skills

C | MATLAB | DFMEA | SolidWorks | FEA | ROS2 | SQL | Python | GD&T | SPC | 3DX | FMA | Simulink | 3D printing