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MARIA PATNI

EDUCATION AND AWARDS

University of Michigan, Ann Arbor – B.S.E. Computer Science **GPA:** 3.6/4.0 EXPECTED GRADUATION: MAY 2025

Coursework: ML, Robotic Manipulation, Algorithmic Robotics, SLAM & Nav, Operating Systems, Networking, AI, Comp. Security, Hardware & Org, Foundations of CS, Data Struct. & Algorithms, Java,

Skills: Python, C/C++, Java, ROS, Golang, CAD (Inventor/Solidworks)

Research: Manipulation and Machine Intelligence Lab (MMINT) - https://www.mmintlab.com/

FIRST Robotics Competition – 1st Place Chairman's Award @ 2020 Midwest Regional, Dean's List Semi-Finalist
Chicago Python Users Group – 1st Place Project (GPS via Tracked Known Objects) @ ChiPy Mentorship Program
NCWIT – Aspirations in Computing Award Northern Illinois Regional Winner & National Honorable Mention

EXPERIENCE

Viam, New York, NY – Software Engineering Intern MAY 2024 - AUGUST 2024

- **Custom Pin Control Library:**
  - Created custom pin control library to support PWM, GPIO, and pull up/down resistors on the RaspberryPi5
  - Developed infrastructure / processes to enable future pin control support on other processors
- **Controls:**
  - Integrated MIMO into Viam controls package for PID controllers

EverestLabs, Fremont, CA – Robotics Software Engineering Intern MAY 2023 - AUGUST 2023

- **Pick Point Optimization:**
  - Prototyped 6 algorithms that determine the optimal contact surface for FANUC robots sorting trash
  - Built infrastructure for recording object height data & depth map generation
  - Preliminary testing shows 2% improvement in pick efficacy

Zipline, San Francisco, CA – Mechanical Engineering Intern MAY 2022 - AUGUST 2022

- **P2 Drone Serviceability Solution / Site Integration:**
  - Listed Inventor on 2 Patents filed in 2023 by Zipline
  - Designed & built prototypes for a menu of potential drone serviceability concepts & ground support equipment
  - Determined best serviceability solution, taking into account CAPEX/OPEX, ergonomics, BOM complexity, time to service, reliability, & safety of solution

Georgia Tech Biorobotics and Human Modeling Lab – Undergraduate Researcher SEPTEMBER 2021 - MAY 2022

- **Vascular Access Cannulation Device:**
  - Collaborated with students from the Emory School of Medicine in designing a device that improves vein visibility during cannulation (IV Fluid Line Insertion) of hypovolemic patients
- **AutoSpine Robot (performs invasive spinal procedures):**
  - Designed a mounting system that conforms to the human body to hold the Autospine secure during use
  - Iterated upon current design to allow 6 degrees of freedom of movement instead of 4; new design supports Radiofrequency Ablation, a procedure that provides long-term relief to patients with chronic pain

Zipline, San Francisco, CA – Mechanical Engineering Intern JUNE 2021 - AUGUST 2021

- **Delivery Accuracy:**
  - Created standardized testing procedures to execute consistent mass testing & package behavior analysis
  - Determined causes of outlier delivery cases, influencing design changes to the package, parachutes, and drone
  - Improved drop accuracy of package delivery by 30%
- **Firmware Flasher:**
  - Designed a fixture to easily flash GPS firmware onto operational drone circuit boards, eliminating the need for soldering / electrical work in the field; fixes a GPS failure mode 100% of the time