NEHAL THAKER

+1 6239201190 • nkthaker@asu.edu • www.linkedin.com/in/nehal-thaker-71462124b • github.com/nehalthaker

SUMMARY

As a highly motivated and accomplished Master's student at Arizona State University (ASU), I am pursuing my academic passion for Robotics And Autonomous Systems. With a proven track record of academic excellence, I have consistently demonstrated strong research, analytical, and problem-solving skills. Through my coursework and hands-on experiences, I have honed my ability to thrive in collaborative environments and contribute valuable insights to academic projects and also have cultivated my soft skills with the experience in my previous endeavors.

EDUCATION

Master's Robotics and Autonomous Systems System Engineering Major **May 2024**
Arizona State University, Tempe, AZ **GPA 3.96**
Relevant Coursework: Robotic Systems, Linear Algebra, Mechatronics Systems, Multi-Robot Systems, Python for Engineering, Biomimicry in Design

ACADEMIC PROJECTS

Battery Electric & Intelligent Vehicle Lab (Simulation Team) **March 2023 -August 2023**

- Developed a platform for simulation results through **Digital Twin** and ensured more edge cases were encountered in the closed course and public road testing by adding Augmented Reality.
- Worked on configuring the **Unreal Engine** with **Carla** on **Ubuntu 20.04** and also developed a precise **Autoware** map, which is a simulation environment for designing and testing automated vehicle systems.

Parrot Mambo Drone Autonomous Path Tracking **Jan 2023 -May 2023**

- Developed a line-following system for the Parrot Mambo Drone using MATLAB and Simulink.
- Devised accurate path tracking through the implementation of refined computer vision algorithms.Enhanced system performance by applying PID control to overcome various challenges.

Self-Balancing Motorcycle **August 2022 - December 2023**

- Designed and constructed a **Self-Balancing motorcycle** integrating an inertia wheel as a gyroscope, hands-on experience in building electromechanical systems with a focus on balance and stability.
- Maintained stability by implementing a PID control system loop using collected IMU data through the **Simulink** model in **MATLAB** which is uploaded to Arduino.

Programming the Dobot - Robotics in Microelectronics Manufacturing course. **May 2023**

- Developed precise programming for the Dobot in a Microelectronics Manufacturing course, to automate intricate tasks such as precise pick-and-place operations and intricate pattern writing.

Object Sensing car **August 2022 - December 2023**

- Constructed an Arduino Leonardo-based bot equipped with an Infrared Sensor tuned through a potentiometer, practical experience in **Mechatronics** and **object sensing applications** (Fall 2022).
- Coded the Arduino through the Simulink model, which detects any object in front of the bot and stops the motors from rotating, preventing the bot from moving forward.

Automated Intruder Detection System **August 2020 -May 2021**

Certifications: Certified researcher with published contributions in the 4th International Conference on Advances in Science & Technology (ICAST2021)

- Engineered an **Intruder Detection System** utilizing the Atmega-8 microcontroller as a central processing unit, showcasing custom automation and hardware integration for security applications.
- Collected data using a reed switch and vibration sensor and sent it to the cloud using the ESP32 Wi-Fi module.
- Used the open source pre-trained SVM model to accurately classify the signal in the form of an alert on the application making it a low-cost flexible compact intruder detection system.

PROFESSIONAL EXPERIENCE

Team Manager
Ace Wire Mesh, Mumbai, India **January 2022 - August 2022**

- Business of manufacturing and supplying stainless steel wire mesh.
- Responsible for the entire company's logistics such as procuring tenders, obtaining good-quality raw materials, processing the goods, and delivering products to the client on time.

TECHNICAL SKILLS

Tools /Technologies: Ubuntu, Linux, Unix Commands, SOLIDWORKS & Blender, PCB Designing, LiDAR, Carla, Auto-ware, Microsoft Office, GitHub, Git
Programming: MySQL**,** Python, MATLAB, Simulink, HTML, and CSS
Soft Skills: Good Communication, Teamwork, Problem-solving, Networking, Interpersonal Skills.