

EDUCATION

New York University

Master of Science in Mechatronics, Robotics, and Automation

New York, NY

May 2025

Karunya University

Bachelor of Technology in Robotics and Automation

Coimbatore, IN

May 2023

TECHNICAL SKILLS

- Programming Languages: Python, PLC Programming - Ladder Logic.
- Automation Systems: Siemens STEP7 TIA Portal, Ignition SCADA Systems.
- Libraries/ Frameworks: Keras, Pytorch, Scikit-Learn, NumPy, SciPy, Git, TensorFlow, Pandas.
- Software: MATLAB, SOLIDWORKS, AutoCAD.

WORK EXPERIENCE

Graduate Assistant (New York University)

Sep 2024 – Present

- Designed and launched the Chips4All program website developer, significantly enhancing user engagement by implementing responsive features and optimizing intuitive, user-friendly layouts.
- Orchestrated the branding, creation of promotional assets, and digital materials for CSAW 2024, boosting attendee participation. Engineered an interactive website for CSAW, ensuring flawless functionality.

Robotics Program Intern (Kodacy)

Aug 2022 - Aug 2022

- Deployed obstacle avoidance, line-following, and object detection algorithms, reducing collision incidents by 70% during testing.
- Designed and integrated circuits with hardware components, elevating task execution speed and enhancing the robot's ability to adjust to diverse operational requirements.
- Authored detailed programming guides and simulation protocols, accelerating replication processes and improving operational efficiency.

Python Programming Intern (Cisco Networking Academy)

Apr 2022 – Jul 2022

- Analyzed and resolved IP address translation issues, bolstering network reliability and decreasing invalid translations by 90%.
- Strengthened network security by addressing vulnerabilities early, cutting coding-related errors by 50%. Improved project continuity by resolving critical connectivity issues, and minimizing disruptions..

PROJECTS

Socially Aware Medi-Assist Robotic System ([Github Link](#))

Sep 2024 - Present

- Constructed a manually controlled robotic platform equipped with IMU, GPS, and tachometer, achieving navigation accuracy in hospital environments.
- Optimized hardware calibration, including webcams, microphones, and sensors, achieving 95% operational stability; pioneered autonomous navigation plans with advanced path planning and obstacle detection, aiming for a 20% boost in healthcare efficiency.

Automated object retrieval mobile robot ([Github Link](#))

Apr 2024- May 2024

- Engineered a mobile robot capable of identifying and retrieving color cubes with detection accuracy in a controlled arena environment.
- Leveraged computer vision and PID control to achieve precise navigation and gripping, shortening retrieval time by compared to manual methods.

Color cube sorting Robotic Arm ([Github Link](#))

Mar 2024– Mar 2024

- Conceptualized an autonomous sorting system with a 4DOF robotic arm and conveyor belt for real-time color-based cube classification and sorting.
- Utilized TensorFlow-trained neural networks, achieving 98% accuracy in RGB-based color classification, and optimized hardware components to improve system response time by ensuring seamless operation.

PNP Robotic arm ([Github Link](#))

Feb 2024- Feb 2024

- Built a 4-DOF robotic arm with a gripper for multi-purpose functionality, delivering precise control via SG90 servo motors.
- Integrated features for storing up to 10 positions, ensuring smooth transitions with precise control, and enhancing usability for repetitive tasks.

Smart Door Lock System ([Github Link](#))

Sep 2023-Dec 2023

- Designed a smart door lock system incorporating RFID and a 6-digit keypad, capable of securely managing over-user access.
- Integrated a burglar alarm system, reducing unauthorized access incidents during authentication.

Air Purification Robot ([Github Link](#))

Jan 2023-May 2023

- Innovated an IoT-based air purification robot capable of reducing the Air Quality Index (AQI) from 100 to 20 in a 20 sq. meter area, demonstrating an 80% improvement in air quality within 15 minutes of operation.
- Integrated a high-efficiency HEPA filter, lowering the Air Quality Index (AQI) from 100 to 20, demonstrating measurable environmental improvement.