CHINMAY AMRUTKAR

623-217-7539 | chinmay.amrutkar@asu.edu | github.com/ChinmayAmrutkar | www.linkedin.com/in/chinmay-amrutkar -153375209 |
https://scholar.google.com/citations?user=a7ymhIIAAAAJ&hl=en

PROFILE

As a dedicated Robotics Engineer, I bring expertise in **computer vision, image processing**, and **robotic manipulation**, fueled by a passion for **robotics, AI** and **autonomous navigation**. I am committed to harnessing these skills to develop cutting-edge **algorithms** that tackle complex real-world challenges while advancing the betterment of society. Guided by a deep dedication to **inventing and simplifying**, I strive to **deliver impactful results** that push the boundaries of robotics technology. I thrive in **collaborative** settings, partnering with teams to transform obstacles into **innovative solutions** that create a meaningful difference.

EDUCATION

Master of Science in **Robotics and Autonomous Systems (AI)** at **Arizona State University (Tempe, AZ)** *Aug 2024 – Present*

- Achievements: NAMU University Scholarship ($10,000), Engineering Fellowship ($1000)
- Courses: Artificial Intelligence, Robotics Systems, Space Robotics and AI, Machine Vision and Pattern Recognition

Bachelor of Technology in **Robotics and Automation** at **MIT World Peace University (Pune, India)** *Aug 2019 – May 2023*

- Achievements: CGPA: **9.77**/10, Graduated as a Gold Medalist, 3 times merit scholarship holder ($3750)

SKILLS

- Programming Languages: **Python, C++, C, Java, PyTorch, Tensorflow, Machine Learning**
- Software and Frameworks: MSC Adams, Virtual Test Drive, SolidWorks, Fusion 360, MATLAB, ROS, ROS2, Git, Optimization, **Linux, Ubuntu**
- Soft Skills: **Problem Solving**, **Teamwork, Leadership, Effective Communication**, Time Management

PUBLICATIONS

- "Overview of Autonomous Vehicles and Its Challenges", *Techno-Societal 2022. ICATSA 2022. Springer, Cham*
- "A state-of-the-art review on robotics in waste sorting: scope and challenges", *International Journal on Interactive Design and Manufacturing (IJIDeM),* vol. 17, 2789–2806 (2023)

PROJECTS

Real-Time 3D Object Detection and Sensor Fusion (Ongoing) *April 2025*

- Currently researching LiDAR-based 3D object detection techniques using voxel-based encoding and deep learning architectures.
- Exploring multi-sensor fusion strategies combining LiDAR and RGB data to enhance perception in autonomous driving scenarios.
- Investigating real-time deployment challenges on edge devices, focusing on CUDA acceleration, latency optimization, and data-centric evaluation.

Integration of MyCobot Pro 600 and Digital Twin for Maze Navigation *Dec 2025*

- Developed an **autonomous maze-solving** system by integrating **computer vision** (Python, OpenCV) and **inverse kinematics** (MATLAB), enabling precise **motion coordination** for the MyCobot Pro 600.

Design and Prototyping of Robotic Arm for Waste Sorting using Computer Vision *Sep 2022 – Nov 2022*

- Built a 4 DOF **robotic arm** with Arduino control for **robotic manipulation**, capable of sorting recyclables (glass, paper, cardboard, tin cans) with a payload capacity of 200 grams, addressing **real-world sustainability challenges**.
- Trained a **deep learning** model **(YOLOv7)** on 2000+ images for **object detection**, achieving high accuracy in **perception** tasks.

WORK EXPERIENCE

Graduate Engineer Trainee at **Jabil Circuit India Private, Pune, India** *Jan 2024 – July 2024*

- Led the design and implementation of an automated ESD wristband monitoring system, reducing ESD-related incidents by 30%.
- Worked closely with **cross-functional** teams to understand their specific needs, delivering tailored solutions that improved operational efficiency.

R&D Intern at **Hexagon Manufacturing Intelligence, Pune, India** *Feb 2023 – Aug 2023*

- Achieved expertise in end-to-end software testing, including the creation of 1000+ test cases and further automated it using Sikuli as an OCR tool. And acquired a deep understanding of both Virtual Test Drive and MSC Adams Softwares.
- Developed a script generation tool, enabling non-technical team members to contribute to **automation** and improving **productivity by 40%**.

LEADERSHIP AND VOLUNTEER WORK

Volunteer – Center for Human, Artificial Intelligence, and Robot Teaming (CHART) Lab *Jan 2025 – Present*

- Contributing to cutting-edge research on human–AI–robot collaboration in mission-critical scenarios, gaining hands-on experience with robots like FETCH, HUSKY, UR5, ABB Yumi, and Turtle Bot.

Team Captain – Design and Manufacturing of Electric Vehicles *Jan 2020 - Jan 2023*

- Upheld **High Standards** by **diving deep** into cross-functional challenges, taking **ownership** of a 14-member team to think big for designing an electric vehicle that clinched first place in acceleration through bold innovation and **teamwork**.

Robotics Instructor, Volunteer *Jan 2023*

- Successfully led hands on **training** program in robotics and IoT to enhance technological skills in rural India.