

Dhamodar Burla

 [Linkedin](#) |  burladhamodar@gmail.com |  +1 7169396525 | [Buffalo, New York](#)

SKILLS

Programming	: Python, C++, Rust (Intermediate)
Robotics Middleware	: ROS/ROS2, Gazebo, Rviz, TF, URDF
Perception Tools	: OpenCV, TensorFlow, PyTorch, Dlib, Point Cloud Processing (PCL), Depth Estimation, Object Detection (YOLO, Faster R-CNN)
SLAM and Navigation	: LiDAR SLAM (Gmapping, Hector SLAM, Cartographer), Visual SLAM (ORB-SLAM, RTAB-Map), Path Planning (A*, RRT, Dijkstra)
Development Tools	: MATLAB/Simulink, CoppeliaSim, Docker, Git, Jupyter Notebook, Linux (Ubuntu), Bash
Databases	: SQL, Cloudcompare
Embedded and Hardware Interfaces	: PLC Programming (Ladder Logic, FBD), Allen-Bradley and Siemens PLCs, Motion Control (PID, Servo Motors), SCADA

EXPERIENCE

Botsync — Robotics and Automation Intern January 2022 - June 2022

- Designed and implemented autonomous mobile robot (AMR) solutions for intralogistics automation, focusing on navigation, path planning, and fleet management.
- Integrated and tested sensor-based perception systems to enhance AMR adaptability in dynamic factory and warehouse environments.
- Collaborated with cross-functional teams to optimize AMR deployment, ensuring seamless automation with minimal infrastructure modifications.

Internship Studio — Workflow Automation Intern July 2021 - December 2021

- Developed and optimized automated workflows for robotic systems, integrating ROS, AI-based vision, and IoT sensors to enhance efficiency in manufacturing and logistics.
- Implemented robotic process automation (RPA) and software integration, streamlining data flow between industrial robots, cloud platforms, and enterprise systems.

PROJECTS

Reinforcement Learning for MuJoCo Walker2D November 2024

Tools & Technologies: Python, Stable Baselines3, MuJoCo, Gymnasium, PPO, DDPG, PyTorch

- Trained PPO and DDPG RL models in MuJoCo Walker2D, achieving stable walking with a 92 percent success rate and a 3,200+ reward score.
- Optimized hyperparameters and policy learning, reducing training convergence time by 20 percent compared to baseline models.
- Utilized Gymnasium and Stable Baselines3 for robotic locomotion simulation and benchmark analysis.

Grand Prix Autonomous Racer using ROS February 2024 - May 2024

Tools & Technologies: ROS, SLAM, RRT, Pure Pursuit, Python

- Designed an autonomous racing system using ROS, integrating SLAM with AMCL and sensor fusion, enhancing localization accuracy by 30 percent.
- Designed a hybrid obstacle avoidance system combining Gap Follow, RRT, and local occupancy grids, improving navigation efficiency by 30 percent.
- Implemented a Pure Pursuit controller for trajectory tracking, achieving high-speed stability and precise waypoint.

Face Recognition Attendance System September 2023 - December 2023

Tools & Technologies: Python, OpenCV, TensorFlow, Dlib

- Implemented a face recognition attendance system using OpenCV for detection and TensorFlow CNN for recognition, achieving 97.2 percent accuracy with optimized feature extraction and alignment.
- Crafted an intuitive GUI for seamless attendance tracking, reducing manual errors to under five incidents per month while streamlining data entry processes for quicker reporting and analysis of attendee participation trends.

Design of a 4-DOF Service Robot with Disturbance Rejection April 2022

Tools & Technologies: MATLAB/Simulink, Sliding Mode Control (SMC), Lagrange Dynamics.

- Collaborated with a team to develop a 4-DOF robotic manipulator, formulating kinematic models using Denavit-Hartenberg parameters and dynamic models via the Lagrange method.
- Co-designed and implemented a Sliding Mode Controller (SMC) for robust trajectory tracking, achieving sub-2 percent error in MATLAB/Simulink simulations.
- Simulated dynamic disturbances, including external forces and varying payloads, to test and enhance the system's robustness in uncertain environments.

EDUCATION

University at Buffalo (SUNY Buffalo)

Masters in Engineering Science - Robotics

Courses - Robotics Algorithms, Computer Vision and Image Processing, Deep learning in robotics, Machine Learning, Robotic Control Systems, Manufacturing Automation.

Maulana Azad National Institute of Technology, India (NIT Bhopal)

Bachelor of Technology in Mechanical Engineering