Karteek Gandiboyina

Champaign, IL | gkarteek99@gmail.com | +1-4479026750 | muralikarteek7.github.io/
linkedin.com/in/muralikarthik7/ | github.com/muralikarteek7

Education

University of Illinois Urbana-Champaign, MS in Autonomy & Robotics — Aug 2024 – Dec 2025

- GPA: 3.89/4.0
- **Coursework:** Deep Learning for Graphs, Computer Vision, Safe Autonomy, Human-Centered Autonomy

Indian Institute of Technology Kharagpur, B.Tech in Electrical Engineering — Aug 2017 – May 2021

- GPA: 3.48/4.0
- **Coursework:** Deep Learning, Machine Learning, Embedded Systems, Power Electronics, Control Systems

Experience

R&D Robotics Engineer, Konica Minolta – Tokyo, Japan — July 2021 – Aug 2024

- Specialized in industrial automation, particularly bulk bin pick-and-place robots.
- Applied classical and AI-based computer vision for precise 6-DoF item detection and prediction.
- Developed an auto-annotation tool to speed up the training process of object detection AI models.
- Filled 2 patents in computer vision and Robotic grasping.

Machine Learning Intern, Philips Innovation Campus – Bangalore, India — April 2020 – July 2020

- Worked on CT scans and medical images from Luna 16 dataset
- Fine-tuned 3D volumetric UNet model to effectively segment lung nodules.

Projects

PORTRS : PAYLOAD ORGANIZATION AND TRANSPORTATION ROBOTIC SYSTEM — JAXA

- Collaborated with JAXA Japan Aerospace Exploration Agency to create a novel solution for visually assisting multi-limbed robot.
- Designed and optimized an AI model for grasping the existing in-ship interface and manipulating various objects inside International Space Station.

Multitask Learning with Language using AIRL — gail_airl_pytorch.git

- Achieved a remarkable 72% accuracy milestone, demonstrating up to a 200% enhancement in zero-shot task success rates and accelerated skill transfer to novel tasks, showcasing the power of language-based goal specification in robotics.
- Tools Used: Pytorch, Metaworld, Mujoco-py, Imitation Learning, Behaviour Cloning

Drone Racing — DroneRacer-MPC-Vision.git

- An autonomous drone racing system integrating vision-guided trajectory adjustments with MPC for planar control and PID for elevation.
- Tools Used: Python, Airsim, MPC, PID, Trajectory Planning, State-Space estimation

VLM4Autonomy — VLM4Autonomy-.git

- This project integrates Vision-Language Models (VLMs) with autonomous driving systems to enhance decision-making through scene understanding and reasoning.
- Tools Used: Python, VLM, LLM, SAM2, YOLO-V8, Structure-from-motion, Visual Odometry

Technologies

Languages: C++, Python, Verilog, Embeded C, Pytorch, Keras, Tensorflow

Technologies: ROS, Github, Docker, Airsim, Linux, Anaconda, GYM AI, Solidworks