

VARADARAYA GANESH SHENOY

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EDUCATION

University of Minnesota-Twin Cities,USA

May 2025

Master of Science in Robotics

Focus: Planning and Control, Computer Vision

Arizona State University,USA

May 2021

Master of Science in Engineering, Electrical Engineering

GPA: 3.5/4

Focus : Control Systems

Coursework : Feedback Systems, Optimal and Robust Control, Multivariable Control, Linear System Theory

PES University, Bangalore,India

May 2019

Bachelor of Technology, Electronics and Communication Engineering

GPA: 3.7/4

Focus : Digital Signal Processing

Coursework : Digital Signal Processing, Control Systems, Machine Learning

TECHNICAL SKILLS

Programming Languages: C++, Python

Software and Tools: ROS1, ROS2, OpenCV, Eigen, PCL

Project Management: Git, Docker, Agile Development

EXPERIENCE

Path Planning Engineer, Flux Auto India Pvt Ltd, Bangalore

May 2021 - July 2023

- Created a speed profile algorithm using linear algebra and physics for a warehouse robot to slow down at curves without vehicle feedback and stopping when obstacles are detected
- Upgraded initial version of the speed profile to be able to implement new algorithms and fall back to a legacy algorithm in case of failure thereby reducing vehicle stoppage by 80% while testing
- Devised an algorithm to calculate of pallet orientation with respect to ground using point cloud, increasing pallet pickup success rate by 60%
- Devised a global planner based on graph theory and implemented it successfully in a warehouse environment, decreasing time taken to generate plan by 90%
- Used the graph theory based global planner for multi-robot scenario using network flow algorithms to analyze free space and traffic in lanes
- Devised a coverage planner using cellular decomposition for autonomous tractor, covering an area of 5000 sq.m in five minutes
- Created a local planner for autonomous tractor to avoid obstacles, slow down at curves as well as partitioning global path to prevent deviation from global path
- Devised a plugin for deep learning department to investigate and analyze real world failures by comparing them to simulated results, increasing the robustness of obstacle and pallet detection by 80%

PROJECTS

Adaptive Robust Game-Theoretic Decision Making

- Implemented a decision making algorithm for autonomous vehicles using level-k algorithm in Game Theory as well as making it robust using optimal control techniques

Posture Recognition and Correction

- Led a team of students to create a posture correction platform, leveraging Computer Vision algorithms built on a Deep Learning framework using Python and OpenCV to detect key features
- Devised scripts to perform key point analysis to investigate range of motion of each part of the Human Physiology to evaluate correctness and provide feedback in case of bad posture for multiple exercising scenarios

INVOLVEMENT

- **Flux Auto Buddy Program:** Served as a mentor and guide for interns and employees joining the organization, helping them conceptualize and implement on simulation platforms