GONUGUNTA VENKATA SAI MOTHISH

gvsmothish | mothishg@iisc.ac.in | gvsmothish@gmail.com | +91-9959999752

Areas of Interests

- Robot Learning
- Artificial Intelligence
- Reinforcement Learning
- Deep Learning
- Computer Vision
- Mechanism Design

Education

2022 - present **Indian Institute Of Science,Bengaluru**
M.Tech Robotics and Autonomous systems (GPA: 8.1/10.0)

2018 - 2022 **Presidency University, Bengaluru**
B.Tech in Mechanical Engineering **Gold Medalist** (GPA: 9.17/10.0)

2016 - 2018 **Narayana Junior College, Nellore**
Class 12th Board of Intermediate Education, Andhra Pradesh (Marks: 958/1000)

2016 **Don Bosco English Medium High School, Nellore**
Class 10th Board of Secondary Education, Andhra Pradesh (GPA: 9.7/10.0)

Relevant Coursework

- Robot Learning and Control
- Reinforcement Learning
- Stochastic Models and Applications
- Theory and Applications of Bayesian Learning
- Foundations of Robotics
- Robotic Perception
- Autonomous Navigation and Planning
- Dynamics of Machines

Projects

Stochastic shortest path planning with obstacle avoidance using Reinforcement Learning **Jan 2023**

- This was developed as a part of the coursework for the CP-230 Autonomous Navigation and planning Course (IISc Bangalore).
- Aim of this project is to find the shortest path to reach a goal state in the grid world using a policy iteration algorithm.
- It is generalized for various grid sizes and to avoid any number of obstacles present in the path.
- This helps the robot to autonomously navigate in environments with obstacles.

Design development and Motor control of an affordable Bipedal robot named Dridh. **Dec 2022**

- This was done as a part of the coursework for the CP-214 FOUNDATIONS OF ROBOTICS Course, associated with Stochastic Robotics lab (IISc Bangalore).
- Ultimate aim of this project is to develop an affordable bipedal robot for industrial applications.
- The mechanism includes 9:1 reduction from motor with the timing belt and pulley mechanism.
- Design and manufacturing of the robot which includes the Thigh Module, Hip Module, and Shank of the robot was done with Solidworks and 3D printer.

Devolopment of a Bio-Inspired Serial Robot with Serpentine Motion with obstacle avoidance **Jun 2022**

- This is my major project during my bachelor's degree in Mechanical Engineering.
- Aim of this work is to design and develop a 4-degree of freedom robot that mimics the serpentine motion of a snake.
- Tractrix algorithm is used to achieve a meandering linear motion that mimics snake.
- This includes a simulation of a snake robot with 11 links and 5 links in MATLAB. And the snake robot prototype runs on an Arduino microcontroller.
- To develop an optimum path planning and affordable modular snake robot.

Sales Order Entry Robot **Jun 2021**

- This project was done as a part of the coursework for Robotic Process Automation, during my bachelor's degree.
- Implementing a software robot and deploying it to perform trained tasks.
- This bot is designed in software called UI-Path
- It is used to automate the process of detecting any details of sales orders from bills and entering them in the provided software.
- This bot was also reprogrammed to perform any repeated tasks in various industrial applications like email helpdesk etc...

Autonomous Navigation of an Unmanned Aerial Vehicle in controlled environments. **2019 - 2020**

- This is a Sponsored project under the supervision of Eyantra IIT-Bombay and MHRD.
- This is part of the Robotics Competition organized by Eyantra as a team project.
- First part includes the simulation of the drone in Gazebo using the ROS framework and control of the drone in a simulated environment.
- By successful implementation of workthe in simulation we then moved to hardware provided by IIT-B and MHRD.
- We able to obtain the results in the hardware quadcopter and reached upto 4th level in competition.

Courses and Certificates

Using Python for Research **Jun 2021**

By HardvardX - edX certification

AI for Everyone Master the Basics **Apr 2021**

By IBM - edX certification

Skills

Languages	Python, C, C++
Technologies/Frameworks/libraries	ROS, Mujoco, Pybullet, Gazebo,
Tools/Softwares	Solidworks,Ansys
Hardware	Arduino,CNC

Awards and acheivements

University Gold Medal in bachelor's degree **Nov 2022**

Winner of university Gold Medal for the Outstanding academic performance in B.Tech Mechanical Engineering 2018-2022.

Finalist in FALLING WALLS LAB INDIA **Mar 2019**

Organized By **German Centre for Research (DWIH) and Innovation and DAAD**

- Theme : BREAKING THE WALL OF **IRRIGATION CHALLENGES WITH ML AND IOT**
- Automated Plant Watering System developed using Machine Learning (chili crop) under the guidance of Prof.Raghavendra M Deshpande and Prof.Shashidhar.V
- Our aim is to develop a model which can predict moisture level that a chili crop required, depending on variables temperature, soil, humidity etc... So, we trained Machine learning model with theoretical data collected and used Arduino and Servo mechanism to control water supply.