# vishwajeet bhagyawant

MECHTRONICS AND CONTROL SYSTEMS ENGINEER

A robotics enthusiast with hands on experience of different robotics projects



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### **EDUCATION**

# B.TECH, Material Science IIT BOMBAY

06/2018 - Present

Courses

 ROS Localization, Navigation and SLAM Theory of Machines and

Machine Design

India

### **WORK EXPERIENCE**

## **Electronics Engineer | Face Tab** Augle A.I. Private limited

05/2020 - 08/2020

Augle A.I. is the Company that offers Face Recognition based Attendance and Access Control systems.

### Achievements/Tasks

- Researched different ARM processors, GPUs, and LCD for the design of custom Linux tablet
- Decided best compute module and development board for testing and prototyping the tablet
- Worked on a temperature measurement device for measuring the temperature of a person from long distance

# Multi-agent Patrolling | Research project Prof. Leena Vachhani and Prof. Arpita Sinha

05/2020 - Present

A Research project Under professor related patrolling and decision making of cars  $\,$ 

### Achievements/Tasks

- Developed a decision-making algorithm based on surroundings using Deep Reinforcement learning
- Incorporated Unity simulator and MIT Deep traffic platform for testing and training the model of car
- Studied different patrolling algorithms with the help of research papers and implemented on the SUMO platform
- Working on implementing patrolling algorithms on IoT platforms

# **Electronics and Robotics Club | Convener** ITC, IIT Bombay

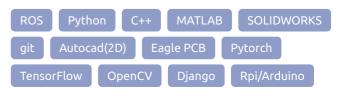
06/2019 - 06/2020

ITC is the technical council which focuses on tech activities in institute

### Achievements/Tasks

- Part of a 17 member team responsible for teaching Tech culture among the fresh minds.
- Conducted sessions on Arduino, Get Mechanised and Get Electrified for 500+ tech enthusiasts.
- Organized hands-on sessions like Electrified & HowThingsWork to give insight into everyday equipment.

### **SKILLS**



## **KEY PROJECTS**

Terrace Farming Bot | Mechanical Subsystem (11/2019 - 12/2019) ☑

- Ideated the linear actuation mechanism to climb up and down the terraces of a particular height and perform farming tasks autonomously
- Designed and manufactured the cad model for mechanisms including climbing, seeding, plowing, and harvesting
- Presented the mechanical subsystem on behalf of Inter IIT contingent, IIT Bombay, in the DIC problem statement

Autonomous Indoor Drone | Flipkart Robotics challenge (06/2020 - Present) ♂

- Designed a cad model for 2-kg payload drone, performed stress analysis and vibration analysis for checking the feasibility of frame.
- Among the top 3 teams selected for national finals out of 1000.
- Currently working on a simulation challenge at national finale.

Quad-copter | Hobby project (02/2019 - 05/2019) 🗹

- Made a Quadcopter from Scratch using Arduino Microcontroller by implementing a PID Algorithm.
- Implemented an Advanced Complementary Filter and Kalman filter Algorithm to reduce noise up to 99% in gyroscope generated by propellers' vibrations and tested on 2D model approximation.
- Successfully built the quad-copter to safely take-off and land and achieved perfect stabilization in air.

### **ORGANIZATIONS**

National Social Service (06/2018 - 06/2019)

Volunteered for 80 hours under the national social service team by planting and maintaining trees on the campus

### CERTIFICATES AND AWARDS

2nd Position, PlutoX Hackathon (01/2019 - 02/2019) Flame Sensing Drone

Silver Medal, Autonomous path finder (11/2018)

Competition organized by Electronics and Robotics Club, IIT Bombay

Modern robotics - Robot kinematics + Robot Motion (12/2020 - Present)

Data structures and algorithms (12/2020 - Present)

### **INTERESTS**

Mechatronics Systems

Control Systems

Listening to books and songs