

# vishwajeet bhagyawant

## MECHTRONICS AND CONTROL SYSTEMS ENGINEER

A robotics enthusiast with hands-on experience in a variety of robotics projects



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## EDUCATION

### B.TECH, Material Science IIT BOMBAY

06/2018 - Present

India

#### Courses

- ROS Localization, Navigation and SLAM
- Theory of Machines and Machine Design
- Intelligent Feedback and Control
- Mechanics of Materials

## 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

### Undergraduate Research Assistant 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 various patrolling algorithms using **research papers** and implemented them on the SUMO platform.
- Implementing patrolling algorithms on **IoT** platforms by simulating different communication failure cases

### 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 of the institute.
- Conducted sessions on Arduino, Ros, Get Mechanised and Get Electrified for 500+ tech enthusiasts.
- Organized hands-on sessions like Electrified and HowThingsWork to give insight into equipment.

## SKILLS

ROS Python C++ MATLAB SOLIDWORKS  
git Autocad Eagle PCB Pytorch numpy  
TensorFlow OpenCV Django Rpi/Arduino

## KEY PROJECTS

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

- Modeled various mechanisms for climbing up & down the terraces of a certain height and perform various farming tasks
- 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) 📄

- Successfully built a quadcopter entirely from scratch using Arduino Microcontroller and implemented **PID** algorithms for stabilization
- 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** while hovering in the air.

## EXTRA-CURRICULAR ACTIVITIES

### 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

## AWARDS AND CERTIFICATES

### Winner, PlutoX Hackathon (01/2019 - 02/2019)

Made a "Flame Sensing Drone" during the hackathon

Secured a percentile of 99.35 in JEE Mains amongst 1.2 million+ candidates (2017 - 2018)

course

In top 3% in JEE Advanced amongst 0.224 million+ candidates (2017 - 2018)

### Robot kinematics + Robot Motion (12/2020 - Present)

modern robotics course

## INTERESTS

Listening to books and songs

playing chess