

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

India

Courses

- ROS Localization, Navigation and SLAM
- Theory of Machines and Machine Design

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

ROS

Python

C++

MATLAB

SOLIDWORKS

git

Autocad(2D)

Eagle PCB

Pytorch

TensorFlow

OpenCV

Django

Rpi/Arduino

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