

TEJAL BEDMUTHA

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EDUCATION

Veermata Jijabai Technological Institute (VJTI), *Mumbai, India.*

Aug. 2019 – Jul. 2023

Bachelor of Textile Technology and Manufacturing (GPA- 3.7)

Mumbai, India

- Ranked first in the program..

TECHNICAL SKILLS

OS : Windows, Linux, ROS (Meta-OS)

Languages : C++, Python, C, Embedded-C, MATLAB, Javascript, HTML/CSS.

Databases : Shell Scripting, MySQL.

Technologies/Frameworks : OpenCv, Scikit-Learn, Numpy, Git.

Software : Gazebo, Coppeliasim, Simulink, MATLAB, MS Word, MS Excel, MS Powerpoint, Photoshop, Canva, Wondershare Filmora

PUBLICATIONS

- Tejal Bedmutha , Jatin Salve, *Comparative Analysis and Novel Algorithm Development for heuristics based Offline Clustering of UAVs* (under review) 2023
- Tejal Bedmutha, Jivita Gorad, Ritik Nawgire, Aditya Jadhav, *Comparative study of in-situ polymerization by polyaniline on different fabrics for development of conductive fibres*(under review) 2023

WORK EXPERIENCE

MIKO.AI

July 2023 - Present

Robotics Engineer

Mumbai, India

- Motion planning and feature development related to robust and obstacle free motion of the robot, considering the dynamics of the robot.
- Sensor fusion and calibration to make it use case specific.
- Implementation and calibration of the controller(PID), considering its mechanical dynamics.

ORANGEWOOD LABS | *ROS, Gazebo, C++, Python, Darknet, Computer Vision.*

Sept 2021 - Oct 2021

Robotics Research Intern.

Remote, India

- Worked on 3D pose estimation of the robotic arm.
- Trained models for object detection using Darknet framework.

AIRPIX | *Pixhawk, Ardupilot, Python, Fusion360, C++, CMake*

May 2021 - July 2021

Network Research Intern.

Remote, India

- Responsible for researching No-Permission-No-Takeoff(NPNT) protocol for drones in India.
- Studied implementation of NPNT compliant drones with Arudupilot on Pixhawk controller

RESEARCH EXPERIENCE

TEXTILE DEPARTMENT, VJTI | *Tableau, Powerpoint Presentation .*

June 2022 - July 2023

Comparative analysis of In-situ polymerization by polyaniline on different fabrics and developing conductive linen fibres.

- Research on various 0 dimensional electronic sensors and conductive finishing of textile materials.
- Research on various synthesis and polymerisation techniques for developing conductive fibres.

MITACS - GRI | *MATLAB, Gazebo, Simulink .*

May 2022 - Aug 2022

Research Intern.

Montreal, Canada

- Worked on Unmanned Aerial Vehicles(UAVs) deployment, clustering and stabilization.
- Developed an algorithm to cluster the UAVs before take off which decreased the clustering time by around 20 secs and increased the efficiency significantly in comparison to the conventionally defined algorithms.

Detecting changes on the images captured by the satellite.

- Devised an algorithm using K-Means clustering & PCA to cluster the important information & to find the principal component in order to detect changes in the images over the time.
- Plotting graphs with marked changes for analytical representation and developing a ML model to further assess possibilities of loss of vegetation.

PROJECTS

Flipkart - GRID | *ROS, GAZEBO, Python, C++, Computer Vision, SLAM* September 2021 - October 2021
Multi robot handling and optimization .

- Worked on navigation and motion planning of robots.
- Worked on robust obstacle detection, avoidance and task optimization.

MOB - MANIPULATOR | *ROS, GAZEBO, Python, C++, MoveIt, SLAM* April 2021 - July 2021
modelling of a mobile manipulator capable of performing various dexterous tasks autonomously.

- Worked on the Mobile Base by applying various SLAM algorithms to achieve the desired autonomous navigation.
- Developing a four wheeled differential drive system from a two wheeled differential drive system.

Vitarana Drone | *ROS, GAZEBO, Python, C++, Computer Vision.* [Link to the Repo](#) Aug 2020 - March 2021
drone as a purpose for Disaster management.

- Implemented and co-devised a PID-based Control System solution for an automated Parcel Pick and Place drone for delivery in situations of calamities and disaster.
- Trained and utilized a Haar Cascade model with 30% increased accuracy for automated detection of parcel locations alongside development of an algorithm for the gripper to pick and place the boxes at the given location.

SCHOLASTIC ACHIEVEMENTS AND AWARDS

- Department topper with 3.7 GPA.
- Among top 2% students to be eligible for branch change based on cumulative CPI of 1st year.
- Ranked in the top 2% out of one million students who took the engineering entrance examination.
- Awarded for being an all rounder student with a monetary reward of Rs 30k from Bank of Baroda.
- Awarded the Alumni Association Scholarship, offered to students with exceptional academics and extra-curricular records.
- Selected as a Mitacs Globalink Research Intern with a research grant of \$9000 CAD -2022 .

EXTRA-CURRICULAR

- Participated in National Level Boxing Championship-(2023).
- Gold medalist in 100m race and Runner-up in 10km Mumbai Marathon conducted by Enthusia, VJTI-(2021).
- Silver medalist in School Games National Kickboxing Championship-(2018).
- National football player-(2016-2017).
- Bharatnatyam Dancer.
- A fervid reader and writer. You can have a glance at [my blog](#)
- Lecturer at Society of Robotics, VJTI.
- Event Manager at E-cell, VJTI and Enthusia, VJTI.
- Involved in social work as a volunteer for Milaap Organization.