

# Shreyas Kanjalkar

Linkedin: <https://www.linkedin.com/in/shreyas1405/>

Github: <https://github.com/zen1405>

Email : [skanjalkar@wpi.edu](mailto:skanjalkar@wpi.edu)

Mobile : +1-774-701-8250

<https://zen1405.github.io/>

## EDUCATION

### • Worcester Polytechnic Institute

Worcester, MA

Aug 21 - May 23

Master of Science, Robotics; GPA: 4.00/4.00

Computer Vision, Algorithms: Design and Analysis, Data Structures, Motion Planning, AI, DBMS, Robot Dynamics and Control, Project Management

## INDUSTRY EXPERIENCE

### • Software Firmware Intern— RoboMatter Inc:

Jan '23-Current

- Working on ESP32S3 chip to perform color detection of objects on a mobile robot in C
- Modelling and Simulating Holonomic Drive for the 3-Wheel AIM Robot in MATLAB

### • Robot and Automation Design Engineer Intern — Wipro PARI:

Summer '22

- Designed and drafted Pallet and Wall Mounting Bracket used in Tower Parking System using SolidEdge software

### • Research and Design Engineer Intern — Force Motors Pvt. Ltd:

Summer '19

- Developed prototype routing of fuel and exhaust system pipe for a MUV using CATIA V5

## TECHNICAL SKILLS

• **Languages:** Python, C++, C, SQL, DL, OpenCV, ROS, HTML5, CSS, JavaScript, nodejs

• **Tools:** AWS, AutoCAD, ANSYS, CATIA, MATLAB

## ACADEMIC PROJECTS

### • Dynamically dancing swarm of Quadrotors:

Jan '23-Current

- Working on creating a Control, Perception and Planning stack to dynamically dance the Quadrotor to a music
- The goal is to track the skeleton of Dancer in the middle and generate trajectories for the Quadrotors to move

### • Robust Trajectory Tracking for Quadrotor Unmanned Ariel Vehicle(UAV) using Sliding Mode Control: Fall '22

- Developed a Sliding Mode Control law for a Crazyflie 2.0 UAV
- Implemented control laws and simulated UAV movement along its trajectory in Gazebo

[pdf](#)

### • Building 3D model of an object from 2D images:

Fall '22

- Implemented Structure from Motion to plot the 3D model of the object using classical approach
- Implemented state of the art NerF network to render complex scene using sparse set of input scenes

[github](#)

### • Full Stack - Face Swap Technology Development in Digital Media:

Fall '22

- Implemented Face Swap with Delaunay Triangulation and Thin Plate Spline using facial features
- Plotted the facial features of a person in an image using Dlib
- Deployed the functionality on AWS for public use

[pdf](#)

### • Probabilistic Edge Detection using Classical and Classification using Deep Learning:

Fall '22

- Implemented the probabilistic edge detection on the CIFAR-10 image data set and compared it with the classical Canny and Sobel Edge detection
- Implemented ResNET and DenseNET neural networks to perform image prediction on the CIFAR-10 image data set

[pdf](#)

### • Optimal Watchman Route in a 2D environment:

Spring '22

- Found static location of cameras to guard all the edges of the environment at all times
- Constructed a walking path for a robot to follow to monitor the edges of the environment in minimum time

[github](#)

### • Joint Space PID Control of Manipulator Robot:

Fall 21

- Implemented inverse kinematics and a PID controller to track desired trajectory of the tool mounted on robot
- Simulated a RRP Manipulator robot in Gazebo simulation

[github](#)