Shreyas Kanjalkar

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EDUCATION

- **Worcester Polytechnic Institute** — Worcester, MA
  Master of Science, Robotics; GPA: 4.00/4.00 — *Aug 21 - May 23*

  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, OpenCV, JavaScript, nodejs, Flask
- **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

- **Data analysis on Lichess database**: *Fall '22*
  - Wrote a Relational Database application using sqlite3 and SQLalchemy with Flask
  - Created a simple front-end UI to allow users to interact with the application

- **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
  - Implemented CI/CD using pytest workflows and Git version control for accelerated software development and delivery
  - Deployed the functionality on AWS for public use — pdf

- **Probabilistic Edge Detection using Classical and Classification using Deep Learning**: *Fall '22*
  - Implemented the probablistic edge detection on the CIFAR-10 image data set and compared it with the classical Canny and Sobel Edge detection — pdf
  - Implemented ResNET and DenseNET neural networks to perform image prediction on the CIFAR-10 image data set

- **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 — github
  - Constructed a walking path for a robot to follow to monitor the edges of the environment in minimum time

- **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