

Aman Vyas

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Profile

Expertise in SDE roles and computer vision based machine learning algorithms to develop cutting-edge solutions for real-world image and video analysis challenges, while contributing to the advancement of computer vision technology.

Education

BTech, 07/2019 – 05/2023
Sardar Vallabhbhai National Institute of Technology, Surat
8.58 CGPA

Experience

GET at John Deere, Automation Engineer 07/2023 – present | Pune, India
• Working on making the detopper autonomus,weed detection system with FRCNN,canny,xception based CV networks

SDE intern at HireTale, ReactJS developer 05/2022 – 07/2022 | Jaipur, India
• Build a Job-listing app with the help of reactJS,redux,framer motion,dynamic data representation, firebase SDK for data storage
• build a fully responsive Home page for company with HTML5,CSS,jquery

SDE intern at AMTDC,IITM, Django developer [🔗](#) 05/2021 – 11/2021
• designed a full stack web API with Python,Django,HTML5,CSS,Javascript
• provided functionality of authentication , data storage migration from sqllite3 to MySQL and used GraphQL for Knowledge Graphs representation
• Used Normalization concepts for designing database.
Mentor: Dr. Venkatramthan sir,professor at IIT madras

MHI KITE TIP Intern at IIT, Madras, Development of an industrial control system for 4 axis industrial robots [🔗](#) 11/2021 – 03/2022
• designed and developed 4DOF scara robot using Ros Gazebo simulator and rvizUI
• importing URDF of scara robot, published custom controller node on ros and published to gazebo
skills:ROS,Gazebo,Rviz,Matlab Mentor: Dr. Kathiresan S Sir, Retired Group Director, GTRE/DRDO

Computer vision Engineer at GTRE, DRDO

Efficiency optimization using semantic segmentation:
unet++ used to analyze combustion patterns within the gas turbine. By segmenting the images of the combustion process, it can identify areas of inefficiency or incomplete combustion. This information will guide adjustments to fuel injection, airflow, and other parameters, ultimately improving the turbine's efficiency. UNet++ was useful for accurately segmenting intricate structures within a gas turbine.

Projects

Farmbot [🔗](#)

A farming robot with automatic navigation, weed detection system, designed for navigating between crops, across farms and providing aid in multiple operations required by farmers, specific in automatic weed spraying system.

Real time Nozzle spray mapping on geolocation, John deere 08/2023 – 10/2023
• did data cleaning for removing outliers with drop method.
• used folium for mapping on geolocation.
• did nozzle flowrate analysis with pandas, NumPy and matplotlib.

- calculated latitude, longitudes of all nozzles at different time stamp over 60,000 using NumPy.

VehicleOS, *implementation of autonomous car using ROS,SLAM,deep neural network algorithms for obstacle detection* [↗](#)

Development of 'CarOS,' A Raspberry Pi-based vehicle automation system, integrating computer vision and IoT technologies. Designed real-time object detection and lane tracking using OpenCV, enabling autonomous navigation. Implemented a user-friendly web interface for remote control and monitoring, enhancing user experience. Leveraged Python,cpp and ADAS framework to ensure seamless communication between onboard sensors and the central control hub.

Facial keypoints detection [↗](#)

Implemented facial keypoints detection using deep learning techniques, achieving accurate localization of key facial landmarks such as eye corners, nose tip, and mouth corners.

Amazon-Clone, *Build with reactJS,Material-ui,Firestore with the payment processing method.* [↗](#)

Utilized the concept of API to fetch various data

Obstacle Detection [↗](#)

This project is about detecting obstacles from highly sparse LiDAR point cloud and tracking multiple objects in real time.

Twitter Clone, *Build with ReactJS,TailWindCSS,Firestore* [↗](#)

Lane Detection [↗](#)

The project integrates real-time tracking mechanisms to ensure consistent and reliable lane detection over consecutive frames. By employing techniques such as Kalman filtering and weighted moving average, the system predicts and tracks the lane lines, providing smooth and continuous lane information.

MicroSaas Project, *FrontEnd ReactJS and filter hooks* [↗](#)

Food and Travel frontend with the help of material-ui and react Filter Hooks

L&T Techgium Competition, *Design and Development of Automated Crane Hook Tracking System* [↗](#)

Imported Designed crane model with Lidar,camera and IMU sensor in it , converted into URDF format to export it to ROS for automation. The real time tracking of objects done by obtaining frustum and applying Pose Graph based SLAM approach for mapping of landmarks and used Kmeans algorithm for data clustering ,fusion done on Ros with pcl library ,made a prototype of this problem statement

Courses

Full Stack Java Developer-core java +jsp servelets+restfull api

Understood how to build web forms with JSP

decision making under java

multi threading

JavaScript(certified course), udemy

the professional working with JavaScript, did some projects mentioned in course

Skills

Automation

ROS-Gazebo,SLAM

web development

Html5,css,javascript,jquery

Database Query Languages

MYsql,MongoDB,GraphQL

OOP Language

JAVA,Python,cpp

web framework

ReactJS,Django

CV Tools


Pytorch, Keras, TensorFlow

Achievements

L&T Techgium competition-2022

We have reached to final POC presentation round after clearing 3 stages – (concept and abstract shortlisting, technical presentation, briefing of prototype demonstration for funding (we got Rs.50000/- funds for building our prototype)

EXTRA-CURRICULAR ACTIVITIES

ALL INDIA INTERNIT SWIMMING COMPETITION 2023, *100 mt butterfly- gold medal 400 mt i.m.-gold medal 100 mt free stye-silver medal 50 mt butterfly-silver medal 100 mt backstroke-bronze medal* 

Declaration

I hereby declare that the above written particulars are true to the best of my knowledge and beleif.

Aman Vyas