Yashveer Jain

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EDUCATION

Masters of Engineering (Robotics) Expected - July 2024

University of Maryland College Park, USA

Semester 1: Control System, Robot Modelling, Software Development for Robotics (3.87 GPA)

Semester 2: Robot Planning, Robot Perception, Cognitive Robotics (OnGoing)

Bachelors of Engineering (Mechatronics) (GPA:9.44/10) July 2016- July 2020

Manipal University Jaipur, Rajasthan, India

WORK EXPERIENCE

AIMonk Labs, Bengaluru Aug 2020 - Aug 2022

Machine learning Engineer

- Worked on a math mojo project, where the task was to use OCR to detect the text and decode the math equation to latex symbols, where I created synthetic latex OCR data that increased the accuracy of the transformer OCR model to 60%.
- Developed an AI solution for a client to detect the cars occupying the parking spots and improvised it by segmentation to detect whether the cars are covered by trees or not, and added additional features to enhance the detection matching, overall resulting in an increase in the accuracy by 20%, on hard positive cases.
- To reduce the cost of operation, an Autoscaling system was designed to spawn the servers as per need, which resulted in reduced cost significantly, and use servers only when needed automatically.
- Headed the project for developing a testing environment for AI models, resulting in efficient testing and development of the AI project, by the QA and the dev team.

INTERNSHIP TRAINING

Swaayatt Robotics, Bhopal Jan 2020 – May 2020

- Implemented visual odometry using deep learning (like UnDeepVO) to handle depth estimation and rotation using a monocular camera.
- Worked on the tracking algorithm like the Kalman filter, and particle filter with the optical flow, to identify the sustainability of these algorithms on the ADAS system for tracking vehicles and pedestrians.

Omax Auto, Gurugram May 2019 – July 2019

- Developed a program for automatic inspection of the part holes using a Machine Vision algorithm, resulting in an increase in the company's production, for higher and faster quality inspection.

PROJECTS

Home Automation: Jun 2021 - Aug 2021

- Developed a private server as a central hub for all the devices across the house, using *FastApi, MQTT, Arduino, Raspberrypi, and SQLite.*

Implementing GA and dynamic collision avoidance for autonomous ship Mar 2020 - Jul 2020

- Implemented Genetic Algorithm on *cython* to generate the shortest path and added *pure pursuit* for smooth up the path and *dynamic collision avoidance algorithm*.

Third eye - Github Oct 2019 - Dec 2019

- A device created for blind people to navigate around the world, using computer vision, and Text2speech.

Search and Rescue Drone – GitHub Jul 2019 - Oct 2019

- Developed an AI Drone to detect human beings in hazardous areas and send their locations to the Rescue team.

Industrial Manipulator (2-axis cartesian manipulator) – GitHub Jan 2019 - Apr 2019

- Made a cartesian robot for detecting objects and grabbing them if an object is a metal, and placing it in a different bin.

EXTRACURRICULAR ACTIVITIES

- Research Assistant in Perception and Robotics Group, University of Maryland, College Park Ongoing
- Secured 1st Runner up in Infosys Competition Techazooka Dec 2019
- Best project award with a cash prize of INR 15K in Manipal Navonmesh 2019 Nov 2019
- Achieved runner-up position with INR 25K cash prize in Secure Vikram Award for best project innovation Nov 2019

SKILLS AND LANGUAGES

Production Skills: Microsoft Office, Linux, Git, Docker, Microsoft10, AWS - Lambda, S3, SQS, EC2; Azure - devops,VM, google sheets
Machine Learning: Computer Vision, Machine Learning, Deep Learning, NLP, machine learning algorithms (linear regression, SVM, logistic regression), Artificial intelligence Applications and Genetic Algorithms, TensorFlow, PyTorch, Pandas, matplotlib.
Programming Languages: Python, C, C++, Ladder programming, Embedded C, Matlab Simulink, Flutter & Dart.
Others: ROS(Robot Operating System), ROS2 Humble, SLAM, Heuristic and Graph-based search algorithms, FastApi, Mqtt, Path planning, OpenCV, LQR & LQG Control system, Nexus Vicon.