Yashveer Jain

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EDUCATION

Master of Engineering (Robotics) (GPA:3.97/4) Expected - July 2024

University of Maryland College Park, USA

Semester 1: Control System, Robot Modelling, Software Development for Robotics

Semester 2: Robot Planning, Robot Perception, Cognitive Robotics, Becoming a Design Thinker

Semester 3: NLP (Natural Language Programming), Visual Learning & Recognition, Deep Learning (ongoing)

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

Manipal University Jaipur, Rajasthan, India

PROFESSIONAL EXPERIENCE

University of Maryland, College Park, USA Aug 2022 - ongoing

- **Graduate Teaching Assistant (Fall 2023):** ENPM667 - Control of Robotic Systems, part of master's program at UMD.
- **Research Assistant (Spring 2023):** At the Perception and Robotics Group, I am engaged in scaling autonomous robots to dimensions smaller than 6 cm, under the guidance of Professor Yiannis Aloimonos.

Renesas Electronics, USA (Embedded AI Intern) May 2023 – Aug 2023

- I work with various sensors and embedded devices such as Renesas RA6 Series and RL78, to train and deploy AI models, enabling them to operate effectively in real-world scenarios.

AIMonk Labs, Bengaluru, India (Machine learning Engineer) Aug 2020 - Aug 2022

- 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.
- 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.

Swaayatt Robotics, India (Research Intern) Jan 2020 – May 2020

- 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, India (Research Intern) 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

Autonomous Aerial Filming - GitHub Jan 2023 - May 2023

- In a team of three, I contributed to an architecture for realistic aerial filming using YouTube data and autonomous drone movement, specializing in deep learning for camera pose prediction.

Leader Follower - GitHub Jan 2023 - May 2023

- Collaborated with a 5-member team on leader-follower tracking with automatic obstacle detection and coordination for seamless platoon movement, where I worked on computer vision task for tracking.

UnDeepVO (Unsupervised Deep Learning Visual Odometry) - GitHub Jan 2020 - May 2020

- Implemented visual odometry using deep learning to handle depth estimation and rotation using a monocular camera.

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.

AWARDS AND ACTIVITIES

- 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 Suits.
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, PLC.