Yashveer Jain

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With a solid 2-year background as a Machine Learning Engineer at AIMonk Labs, I've significantly improved OCR accuracy and enhanced car detection models, showcasing my commitment as a quick learner and hardworking professional. Currently pursuing a master's at the University of Maryland, I'm eager for a full-time role in Machine Learning and Robotics.

EDUCATION

Master of Engineering (Robotics) (GPA:3.85/4) Aug 2022–May 2024
University of Maryland – College Park (UMD), USA
Control System, Robot Modelling, Software Development for Robotics, Robot Planning, Robot Perception, Cognitive Robotics, Becoming a Design Thinker, NLP (Natural Language Programming), Visual Learning & Recognition, Deep Learning.

Bachelor of Engineering (Mechatronics) (GPA:9.44/10) July 2016- July 2020
Manipal University Jaipur, Rajasthan, India
Digital System Design, Power Electronics, Machine Design, CAD, Analog System Design, MEMS, PLC, Industrial Robotics.

PROFESSIONAL EXPERIENCE

Machine learning Engineer - AIMonk Labs, India Aug 2020 – Aug 2022

- Spearheaded OCR task within a transformative PyTorch framework for a math mojo project, delivering a remarkable 60% accuracy enhancement leveraging synthetic latex OCR data.
- Amplified car detection AI for parking spots by 20% through strategic implementation of DeepLabv3 segmentation model, coupled with refined accuracy features using YOLOv7.
- Pioneered the creation of a cutting-edge testing infrastructure for AI models. Engineered seamless integration of a FastAPI backend with AWS and Azure DevOps platforms, resulting in substantial efficiency gains for QA and development teams in the testing phase of machine learning models.

RESEARCH AND INTERNSHIP EXPERIENCE

Graduate Teaching Assistant, UMD (Fall 2023) with Prof. Waseem Malik
ENPM667 – Control of Robotic Systems, a graduate course at UMD. Provided one-on-one tutoring to struggling students, resulting in a 90% pass rate on exams and improved overall grades.

Graduate Research Assistant, UMD (Fall 2022-Spring 2023) with Prof. Yiannis Aloimonos
TinyDepth: Generalized Neural Metric Depth for Palm-sized Robots. Under Review Nature npj Robotics.
Developed ROS based vision-based autonomous planning and control pipeline for small-scale robots (<6 cm) at Perception and Robotics Group.

Embedded AI Intern - Renesas Electronics, USA May 2023 – Aug 2023
Worked with various sensors and embedded devices such as Renesas RA6 Series and RL78, trained and deployed AI models on them, achieving 95% accuracy and ensuring success of edge computing projects.

Research Intern - Swaayatt Robotics, India Jan 2020 – May 2020
Worked on tracking algorithms like the Kalman filter, and particle filter with the optical flow with OpenCV, to identify the sustainability of these algorithms on the autonomous driving system for tracking vehicles and pedestrians.

Research Intern - Omax Auto, India May 2019 –July 2019
Enhanced inspection efficiency by 30% through creating an algorithm for automatic hole inspection using Machine Vision at Omax Auto.

SKILLS AND LANGUAGES

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

PROJECTS

Leader Follower - GitHub Jan 2023 - May 2023

- Developed a leader-follower tracking robot with automated obstacle detection and computer vision-based tracking for seamless platoon movement.

Robo Serve - GitHub Jan 2023 - May 2023

- Utilized Robotics Master's knowledge (ENPM662 and ENPM661) to design autonomous serving robots, implementing RRT* planning algorithm for the hospitality industry.

Irona - GitHub Aug 2022-Dec 2022

- Developed a service robot, using ROS (Robot Operating System), computer vision and C++, to pick and place objects.

Home Automation - GitHub Jun 2021 - Aug 2021

- Established a home server with FastAPI, MQTT, Arduino, Raspberry Pi, and SQLite for streamlined device connectivity.

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.