OMKAR THORVE

+91-8999424867 ◇ Pune, Maharashtra, India
thorveomkar4@gmail.com ◇ www.linkedin.com/in/omkarthorve ◇ https://github.com/chashmishcoder

EDUCATION

M.Tech in Artificial Intelligence and Machine Learning, Symbiosis Institute of Technology 2024 - 2026
Relevant Coursework: Supervised and Unsupervised ML, Deep Learning, Machine Vision, NLP, Reinforcement Learning, Graph Neural Networks, GANs

B.Tech, Deogiri Institute of Engineering and Management Studies, Aurangabad 2020 - 2023
Relevant Coursework: Image Processing, Linear Algebra, Calculus, Numerical Analysis, Statistics, Control Systems, Python, Linux

SKILLS

Languages	Python, C, SQL, Solidity
Libraries	Pytorch, Tensorflow, Numpy, Scipy, Flask, Django, Sqlite, OpenGL, OpenCV, CrewAI, PyOpenGL, PyMongo
Technical Skills	OOPs, Regression, Classification and Clustering Algorithms, CNN, RNN, GNN, AutoEncoders, Transformers, GANs, Image Processing and Computer Vision, Reinforcement Learning, Exploratory Data Analysis, Data Visualisation

EXPERIENCE

K.S.J Recruitment Pvt Ltd - Data Analyst 2023 - 2024

- Created and maintained **Power BI dashboards** for recruitment metrics, providing actionable insights to optimize hiring strategies.
- Performed **data cleaning and analysis using Excel and Python**, ensuring accurate and efficient reporting.
- Automated data workflows, improving efficiency and reducing manual effort by 20%.
- Collaborated with cross-functional teams to streamline recruitment data pipelines and enhance decision-making processes.

PROJECTS

Traffic Signal Control System (Try it here)

- Implemented **YOLOv5** for real-time object detection and **Vision Transformer** for classification, achieving >85% accuracy with segmented sampling.
- Applied **Reinforcement Learning (RL)**-based traffic control system using **SUMO**, where the state space included vehicle count and wait times, actions adjusted signal delays, and rewards were threshold-based.
- Optimized traffic flow with a **hybrid priority-based** and **adaptive scheduling** approach, targeting sub-19-minute travel time for a 10 km route.

GangaFlow (GitHub Link)

- Innovated **GangaFlow**, a multimodal deep learning framework integrating **YOLOv8**, **U-Net**, and **AlexNet** for real-time river pollution detection using drone imagery.
- Achieved a 20% IoU improvement over individual models and a 15% increase in F1-score (IoU ≥ 0.5).
- Carried out advanced image preprocessing techniques, including HSV color space conversion and data augmentation, to enhance model robustness and improve pollutant detection accuracy.

Oil Spill Detection (GitHub Link)

- Developed an AIS and satellite-based oil spill detection system using **DBSCAN** for anomaly detection and **U-Net** for image segmentation.
- Evaluated the model using precision, recall, F1-score, IoU, and ROC-AUC to ensure accurate oil spill detection.
- Integrated real-time vessel tracking with advanced image processing to enable rapid response to potential maritime oil spills.

Bosch CNC Machining Anomaly Detector (Try it here)

- Developed a CNC Anomaly Detector integrating deep learning and mechanical engineering insights for real-time fault detection.
- Achieved 86% anomaly detection accuracy with a 1.2% false positive rate, 84% precision, and 98% specificity.
- Engineered 4096-point vibration signal analysis and feature extraction strategies aligned with CNC dynamics.
- Deployed an interactive monitoring dashboard using **Streamlit** for real-time anomaly visualization.

ACHIEVEMENTS AND CERTIFICATIONS

- **Achieved 1st Position in Smart India Hackathon (Internal at SIT)** for the Traffic Signal Control Project.
- **Served as Zonal Basketball Team Captain**, led college team to a zonal championship, and competed in State and National tournaments.
- **Generative AI Engineering with LLMs** by IBM.
- **Data Analysis and Visualization with Power BI** by Microsoft.
- **AWS Cloud Training** by Unnati Development Pvt Ltd.