



Omkar Thawakar

PhD Student


Self motivated CS graduate seeking research opportunity in organisations with a team of experienced and talented people to utilize my ideas, knowledge, and determination for the proliferation of the organization.

 LinkedIn  Github  GScholar

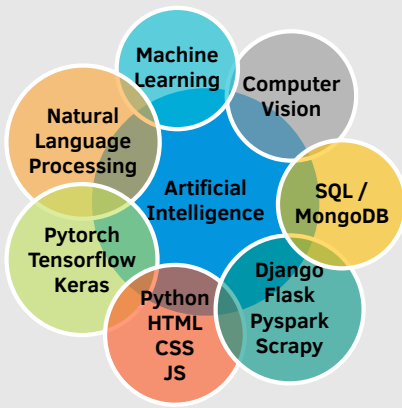
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Skills



Awards

- Emerging team leader award at Chefling.
- Best project award for B.Tech thesis.
- First price in maze solver robot competition for 3 consecutive years 2016-2018 during undergrad.
- NTSE scholarship in high school.
- First price for science-exhibition project in high school.

Education

MBZUAI, UAE

PhD, ongoing (August 2023 - Present)

- Major Domain : Efficient LLM
- Minor : Video Understanding

SGGSIE&T Nanded, India

Undergrad (August 2015 - July 2019)

- Major : Computer Science
- Minor : Deep Learning and AI
- CGPA : 7.55

Bhartiya Mahavidyalaya, India

High School (June 2013 - May 2015)

- Major : General Science
- Percentage : 91.73

Research Experience

Researcher, MBZUAI, UAE (May 2021 - Present)

Supervisor : Prof. Fahad Khan, Dr. Salman Khan, Dr. Rao M. Anwer

- Worked on efficiency of Large Language Models for edge devices, Vision Language Models and Multi-Modal conversational model.
- Worked on video understanding (instance segmentation and composed video retrieval, object tracking, etc).

Machine Learning Engineer, Chefling, India (Feb 2020 - May 2021)

- Worked on creating and deploying own recipe scraping service with Machine Learning backend supported by python scrapy tools.
- Worked on recipe tagging service for raw recipe data.

Research Assistant, IIT Ropar, India (Jan 2019 - Feb 2021)

Supervisor : Dr. Subrahmanyam Murala

- Worked on vision problems such as Image and Video Super Resolution, Moving Object Segmentation and Image restoration.
- Worked on AI solutions for educational, industrial and commercial purposes.

Publications

- “MobiLlama: Towards Accurate and Lightweight Fully Transparent GPT” **Omkar Thawakar**, Ashmal Vayani, Salman Khan, Hisham Cholakkal, Rao Muhammad Anwer, Michael Felsberg, Timothy Baldwin, Eric Xing and Fahad Khan. [Arxiv](#)
- “Composed Video Retrieval via Enriched Context and Discriminative Embeddings.” **Omkar Thawakar**, Muzammal Naseer, Rao Muhammad Anwer, Salman Khan, Michael Felsberg, Mubarak Shah, Fahad Khan in **CVPR 2024**. [link](#)
- “Arabic Mini-ClimateGPT: A Climate Change and Sustainability Tailored Arabic LLM.” Sahal Shaji Mullappilly, Abdelrahman Shaker, **Omkar Thawakar**, Hisham Cholakkal, Rao M. Anwer, Salman Khan, Fahad Khan. **EMNLP-2023**. [link](#)
- “Video Instance Segmentation via Multi-scale Spatio-temporal Split Attention Transformer.” **Omkar Thawakar**, Sanath Narayan, Jiale Cao, Hisham Chokkal, Rao Muhammad Anwer, Muhammad Haris Khan, Salman Khan, Michael Felsberg, Fahad Khan in **ECCV 2022**. [link](#)

Projects

Real Time Piston Ring Detection (Sponsored By : Yamaha Research Lab, India.)

- Created TF-Lite model for piston ring detection to avoid engine scraping due to faulty piston.
- Industry level deployment of model (data collection, processing and predictions) using NVIDIA Jetson Nano.
- Coordinated with clients to improve the functionality of the product and overall cost reduction. [more details](#) [YouTube](#)

Self Learning Robot (Reinforcement Learning with IR sensors and DC motors.)

- Self Learning Maze Solver Robot built with Deep Q-Learning which learns to follow its path without explicitly programmed.
- Faster Learning of Q table for given states which is useful for identifying the desired paths.
- Real time faster training which will further extended to Robotic-Arm and Walking robot. [more details](#) [YouTube](#)

Django/Python Applications

- PhotographyAdda : Social Networking platform where people can share their photos/albums. AI based Ranking of users based on likes & photo quality. [git](#)
- Research Lab Portfolio : Fully dynamic web application for research lab for research work presentation, people's info and job posts. [git](#)

Image Enhancement for Mobile Application (Commercial R&D Project.)

- Design and Developed deep learning model for scattering effect removal in high quality images using image to image translation concept.
- Optimize the AI model for high end mobile platforms with desired results.