


# Omkar Thawakar

## Research Engineer


Self motivated CS undergrad 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

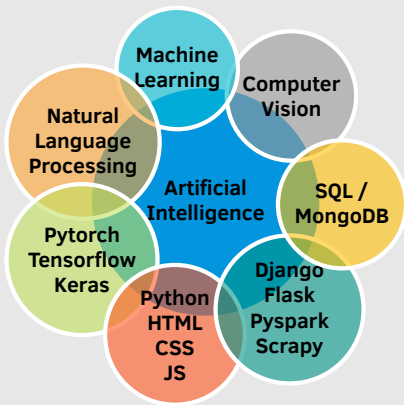
 omkarthawakar.github.io

 +971 585251761

 +91 9403941016

 thawakar.omkar@gmail.com

## 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

### 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 : 83.73

### G.R. Kabra Higher Secondary school

High School (June 2012 - May 2013)

- Major : General Science
- Percentage : 94.86

## Research Experience

**Researcher,** MBZUAI, UAE (May 2021 - Present)

**Supervisor :** Dr. Fahad Khan

- Worked on video instance segmentation with transformers. (SOTA performance)
- Worked on open-world video instance segmentation and remote sensing downstream applications (detection, scene classification, semantic segmentation).

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

- Worked on creating and deploying own recipe scraping service with ML 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

- "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 Shahbaz Khan in **ECCV 2022**. [link](#)
- "Motion Saliency Based Generative Adversarial Network For Underwater Moving Object Segmentation." **Omkar Thawakar**, PW Patil, A Dudhane, S Murala in **IEEE ICIP 2019**. [link](#)
- "Image and Video Super-Resolution with Generative Adversarial Network." **Omkar Thawakar**, A Dudhane, PW Patil, S Murala in **IEEE AVSS 2019**. [link](#)
- "OW-VISFormer: Towards Open-World Video Instance Segmentation." **Omkar Thawakar**, Sanath Narayan, Hisham Chokkal, Rao Muhammad Anwer, Salman Khan, Fahad Shahbaz Khan. (**Under Review**). [preprint](#)
- "Towards Tag Prediction for Food Data." **Omkar Thawakar**, Akshay Dudhane, Sanath Narayan, Hisham Chokkal, Rao Muhammad Anwer, Salman Khan, Fahad Shahbaz Khan. (**Under Review**). [preprint](#)

## 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.
- Coordinate 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.