Kunal Chaugule

Date of birth: 30/08/2003 | Nationality: Indian | Phone: (+91) 8080793758 (Mobile) | Email address: kunalchaugule36@gmail.com | Website: kunalchaugule.com | LinkedIn: https://www.linkedin.com/in/kunal-chaugule-/ | Whatsapp Messenger: +91 8080793758 | Address: Kharghar, Navi Mumbai, 410210, India (Work)

About me

Final-year Data Science Engineering student with hands-on experience in machine learning and computer vision projects. Winner of Smart India Hackathon 2023 and passionate about solving real-world challenges using AI.

Work experience

Machine Learning Research Assistant | Department of Computer Science and Engineering - Data Science at Saraswati College of Engineering | 31/12/2024 - 30/06/2025 | Navi Mumbai, India

Researched and tested image processing methods to improve speed and accuracy of ML-based object detection and tracking, contributed to research documentation, and reviewed related scientific work.

Machine Learning Engineer | The Analyzing company | 23/09/2024 - 20/03/2025 | Mumbai, India

Developed and optimized CNN-based models for intelligent CCTV surveillance, detecting object-specific events and potential property damage with custom rule-based triggers for real-time alerts and analysis.

Full Stack Developer | Stoffpsot | 05/02/2024 - 05/06/2024 | Mumbai, India

Led a team of six to develop and deliver responsive, scalable web applications with 100% on-time completion, enhanced client satisfaction by 40%, and improved code quality through automated testing and CI/CD integration.

Projects

FITLIFE - Exercise Tracking and Guidance Web App | 01/11/2023 - 01/02/2024

Developed a web app for pose estimation and exercise tracking using custom ML models; won Smart India Hackathon 2023.

https://github.com/kunal0230/FITLIFE

Polyp Segmentation Using UNet 3+ | 01/04/2024 - 01/05/2024

"Built UNet 3+ model for polyp segmentation, achieving 92% IoU and 90% Dice Coefficient. Preprocessed medical imaging datasets for deployment-ready diagnostic pipelines.

https://github.com/kunal0230/Polyp-Segmentation-Using-UNet-3-with-TensorFlow

Self-Driving Car Simulation Using Stereo ESP32-CAM with Machine Learning and Depth Estimation | 30/11/2024 - 31/05/2025

Developed stereo ESP32-CAM simulation for depth estimation, integrated ML-based navigation using TensorFlow and OpenCV.

https://github.com/kunal0230/Self-Driving-Car-Simulation-Using-Stereo-ESP32-CAM

Virtual Piano - Interactive Music Application Using Computer Vision | 01/11/2024 - 01/12/2024

Created an interactive virtual piano using OpenCV and MediaPipe with hand movement detection and segmentation, enabling dynamic screen-based musical interaction.

https://www.youtube.com/shorts/ZdxvdxJ5CQM

Education & Training

Bachelor in CSE Data Science with Honours (Cyber Security) | Saraswati College of Engineering, Kharghar, University of Mumbai | 30/11/2021 - 01/07/2025 | Navi Mumbai, India

Level in EQF 6

Skills

Programming: | Python, MATLAB, SQL, HTML, CSS, Java

Machine Learning & Deep Learning: | TensorFlow, PyTorch, Keras, Scikit-learn, NumPy, Pandas, Matplotlib, Seaborn

Computer Vision & Image Processing: | Classification, Feature Extraction, Depth Mapping, Stereo & Multi-Cam Systems | OpenCV, Scikit-Image, MediaPipe, Pillow, Image Segmentation, Object Detection,

Neural Network Architectures: | UNet, ResUNet++, YOLOv8, Mask R-CNN, ResNet, EfficientDet, UNet3+

Optimization & Model Deployment: | Quantization, Pruning, Mixed Precision Training, CUDA, Apple MPS, Flask, FastAPI, TensorFlow Lite

Visualization & Reporting: | Matplotlib, Seaborn, OpenCV Visualization, LaTeX, Markdown, Github

Honours and Awards

WINNER Smart India Hackathon | Ministry of Education Government of india | 01/12/2023

Smart India Hackathon 2023 Champion: Led a team to victory in the prestigious Smart India Hackathon 2023, Emerging as the top team among 50,000 participants nationwide.

Conferences & Seminars

International Conference on Computing,STEM and Applied Sciences | 20/03/2025 - Current

Vision-Driven Virtual Piano: Monocular Hand Tracking, Dynamic Calibration, and Velocity-Based Note Triggering

Image Pre-Processing for Keypoint Detection in Exercise Classification: Mitigating High Contrast and Low Light Challenges

International Conference Science Technology Engineering Mathematics for Sustainable Development | 21/02/2025 - Current

Stereo Vision with ESP32-CAM: Depth Estimation for Autonomous Driving Applications

Volunteering

Core Member - Coding Club | 31/12/2022 - Current | Saraswati College of Engineering, Kharghar

Organized coding events and hackathons to promote programming and ML-CV applications, while mentoring juniors in algorithms and problem-solving.

Certifications

Relevant Certifications and Technical Training

Neural Networks and Deep Learning – DeepLearning.AI (Jan 2025): DNN, backpropagation, optimization.

ML, NLP, and MLOps Bootcamp – Udemy (Sep 2024): ML workflows, NLP, model deployment.

PyTorch for Deep Learning – Udemy (Sep 2024): Model training and optimization with PyTorch.

Computer Vision and Image Processing – IBM (Aug 2024): Image classification, object detection, CNNs.

Understanding Research Methods – SOAS Univ. of London: Research methodology and academic writing.

Technical Blogs and Articles

Technical Blogs and Articles

Polyp Segmentation Using UNet 3+: A Practical Guide, How Deepfake Technology Works: A Deep Dive, Build a Human Background Remover Web App Using Python, Flask, OpenCV, and Mediapipe

https://medium.com/@kunalchaugule.2003