



# Shardul Kulkarni

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🗣️ English (Fluent - C1), German (Intermediate - A2)

## EXPERIENCE

- **Machine Learning Contributor - Open Source Volunteer Program** May 2024 - Ongoing  
*Unify.ai* Remote  
– Developed and maintained open-source machine learning projects using Python, TensorFlow, PyTorch and Git.
- **Artificial Intelligence and Software Engineer - Work Student** March 2023 - Ongoing  
*mediMESH - Clinical Insights* Magdeburg, Germany  
– Engineered an AI-based anonymization pipeline reducing processing time by 99.84% and implemented advanced face detection modules using OpenCV and PyTorch.  
– Managed system and data workflows with Detectron2, YOLO, SAM, Docker, CVAT, enhancing projects with Generative AI techniques for synthetic dataset creation using transformer model to enhance model training efficacy.  
– Leveraged OpenAI's Language Models to generate audio from text.
- **Data Science Intern** July 2020 - September 2020  
*CemtrexLabs* Pune, India  
– Generated and cleaned datasets for video analytics projects from Open Images.  
– Improved dataset transfer time by 99% with efficient Python APIs.

## PROJECTS

- **Multi-Perspective Video Analysis System - Master Thesis (In Collaboration with mediMESH)** February 2024 - Ongoing  
– Created custom YOLO object detection models for hospital environment and designed a report generation module.  
– Built a multi-camera object tracking prototype for healthcare using Python, PyTorch, TensorFlow, Object Tracking.
- **Validating Attribution Techniques (Group Project - OVGU)** May 2023 - September 2023  
– Implemented and assessed attribution methods on models, identifying vulnerabilities.  
– Developed evaluation metrics such as Pearson Correlation Coefficient and Earth Mover's Distance using Python, PyTorch, TensorFlow, Captum.
- **System for Waste Management: Smartzzy - Bachelor Thesis** October 2020 - June 2021  
– Led a team to build a waste segregation system using Deep Learning and integrated with Raspberry Pi using Google Cloud, Flask, TensorFlow, Keras.
- **Farmer's Mart** August 2020  
– Led a team of 6 in a Hackathon, managed agile scrum meetings, developed a recommendation system, built web pages, and presented an F2C platform using Data Science, Machine Learning, Deep Learning, Blockchain, Flask and IoT.

## EDUCATION

- **Master of Sciences - Data and Knowledge Engineering** April 2022 - October 2024 (Expected)  
*Otto Von Guericke University, Magdeburg, Germany* Grade: 1.9  
– Key subjects: ML, DL, Data Mining, Computer Vision, Cloud DevOps, Visual Analytics, Recommenders, NLP, Data Warehousing, Generative Models.
- **Bachelor of Engineering - Computer Engineering** July 2017 - July 2021  
*Dr. D. Y. Patil Institute Of Engineering Management And Research, Pune, India* Grade: 1.4  
– Key subjects: Data Structures, DBMS, Data Analytics, Machine Learning, AI.
- **Undergraduate Fellowship Summer Project and Research Program** June 2019 - July 2019  
*Athens Information Technology, Greece*  
– Implemented a Blockchain PoC for IoT-based transportation of sensitive goods using Ethereum Blockchain, Solidity, Go, Javascript, HTML, CSS and MetaMask.

## TECHNICAL SKILLS AND INTERESTS

- **Programming Languages:** Python, C++, Java, Solidity, SQL, R, Shell Scripting, Go, HTML/CSS, JavaScript .
- **Libraries & Frameworks:** TensorFlow, PyTorch, Keras, Scikit-learn, OpenCV, Captum, MLflow, Matplotlib, Plotly, Numpy, Pandas, Tensorboard, JupyterHub, Streamlit, Flask, ReactJs, C++ STL .
- **Tools:** Docker, Git, VScode, Nodejs, GitHub, Airflow .
- **Cloud/Databases:** Google Cloud, Firebase, MongoDB, MySQL, Oracle .
- **Operating Systems:** Windows, Linux, macOS, Raspbian .

## CERTIFICATIONS

- **Microsoft:** Microsoft Technical Associate for Introduction to Programming Using Python (August 2020).

## ACHIEVEMENTS & CO-CURRICULAR ACTIVITIES

- **Patent:** Smartzzy, Application number: 202121011507, Region: India, Status: Published (September 2022).
- **Patent:** Smart Parkade, Application number: 202121011511, Region: India, Status: Published (September 2022).
- Winner and Runner up of many Hackathons and Project Exhibitions.