

# Sachin Mosambe

☎ +91-7773914643   ✉ sachinmosambe7814@gmail.com   🔗 linkedin   📁 GitHub   🌐 Portfolio

## Education

<b>M.Tech in Infrastructure Design Management</b> , Indian Institute of Technology Kharagpur CGPA: 9.09/10	Aug 2022 – May 2024
<b>B.Tech in Civil Engineering</b> , Government College of Engineering Amravati CGPA: 8.16/10	Aug 2017 – May 2021

## Professional Experience

<b>iRAP (International Road Assessment Programme)</b> <i>Data Research Analyst</i>	May 2023 – Aug 2023
---	---------------------

- Collected, cleaned, and pre-processed road data from **1000+ km** of road sections, performing exploratory data analysis (EDA) to identify key **accident hotspots** and patterns related to **fatalities** and **serious injuries**.
- Applied **Principal Component Analysis (PCA)** and **Clustering** techniques to uncover critical road attributes influencing accident severity, providing actionable insights for targeted safety improvements. enable insights for targeted safety improvements.

## Technical Skills

<b>Programming Languages:</b>	Python, C++, SQL, HTML, CSS, JavaScript (Basics)
<b>Libraries &amp; Frameworks:</b>	Pandas, NumPy, Matplotlib, Seaborn, Scikit-learn, PyTorch, Hugging Face, LangChain, LangGraph, MLFlow, TensorFlow, Streamlit, Falsk, FastAPI, Langserve, OpenAI, Ollama
<b>Machine Learning &amp; AI:</b>	Supervised and Unsupervised Machine Learning, Deep Learning (CNNs, RNNs, LSTMs, GRUs, Transformers) Attention Mechanisms, Transfer Learning, Generative AI, LLMs, NLP,
<b>Cloud &amp; DevOps:</b>	AWS (EC2, Lambda), Google Cloud Run, Kubernetes, Docker, Pinecone, Git, GitHub

## Projects

<b>AI Agent Chatbot with Langchain and LangGraph(Demo)</b>	Mar 2025 – Apr 2025
<ul style="list-style-type: none"><li>Developed a role-based AI-powered chatbot and web app using <b>Streamlit</b>, <b>LangGraph</b>, and <b>LLMs</b> (OpenAI GPT-4o-mini, Groq Mixtral-8x7b, LLaMA-3.3-70b), improving user interaction by <b>50%</b>.</li><li>Deployed the solution on <b>Google Cloud Run</b> with <b>Docker</b> and a <b>CI/CD pipeline</b>, reducing deployment time by <b>40%</b> and increasing scalability by <b>30%</b>.</li></ul>	
<b>Langchain RAG Chatbot (Demo)</b>	Feb 2025 – Mar 2025
<ul style="list-style-type: none"><li>Built a <b>RAG</b> chatbot leveraging <b>Langchain</b> and <b>OpenAI API</b>, improving response speed by <b>25%</b> and optimizing query processing by <b>90%</b> using <b>Pinecone</b>.</li><li>Deployed with <b>Streamlit</b>, integrating <b>history</b> and <b>memory</b> features, enhancing user engagement by <b>35%</b>.</li></ul>	
<b>Object Detection with YOLOv8 and OpenCV (Demo)</b>	Jan 2025 – Feb 2025
<ul style="list-style-type: none"><li>Implemented <b>YOLOv8</b> for <b>real-time object detection</b>, achieving <b>95% accuracy</b> and cutting processing time by <b>50%</b> using <b>OpenCV</b>.</li></ul>	
<b>Sentiment Analysis App with NLP (Demo)</b>	Dec 2024 – Jan 2025
<ul style="list-style-type: none"><li>Created a <b>Sentiment Analysis</b> app using <b>Hugging Face Transformers</b>, achieving <b>95% accuracy</b> in classifying text as <b>Positive</b>, <b>Negative</b>, or <b>Neutral</b> with <b>under 2 seconds</b> processing time.</li></ul>	
<b>Dog Breed Classifier with Fine-Tuned TF EfficientNetV2-S (Demo)</b>	Nov 2024 – Dec 2024
<ul style="list-style-type: none"><li>Fine-tuned <b>TF EfficientNetV2-S</b> on the <b>Kaggle Dog Breed Dataset</b> (over <b>20,000 images</b> across <b>120+ breeds</b>), achieving <b>92% accuracy</b> and reducing inference time by <b>40%</b> via <b>hyperparameter tuning</b>.</li></ul>	
<b>Image Caption Generator with ResNet50 CNN and LSTM (Demo)</b>	Oct 2024 – Nov 2024
<ul style="list-style-type: none"><li>Developed an <b>Image Caption Generator</b> using <b>ResNet50 CNN</b> and <b>LSTM</b>, improving <b>BLEU scores</b> by <b>15%</b>.</li><li>Trained on the <b>Flickr30k dataset</b> (30,000 images), fine-tuning hyperparameters for enhanced model accuracy and performance.</li></ul>	

## Certificates

Machine Learning Specialization by DeepLearning.AI (Coursera)	(Link)
Deep Learning Specialization by Illinois Tech (Coursera)	(Link)
Natural Language Processing (NLP) Specialization by DeepLearning.AI (Coursera)	(Link)
Generative AI with Large Language Models by DeepLearning.AI (Coursera)	(Link)

## Positions of Responsibility & Achievements

- Led a **200-participant conference** as **Core Committee Member** at **IBSR, RCGSIDM, IIT Kharagpur**, showcasing leadership.
- Mentored **60+ students** in **Engineering Drawing** as a **Teaching Assistant** at **IIT Kharagpur**, improving outcomes.
- Won the **Doubles Championship** in **Table Tennis** at the **Kalpana Chawla Trophy, GCOEA in 2019**, showcasing teamwork.
- Awarded **"Man of the Match"** and led the team to **runner-up finish** in **IFAS Premier League 2024**, highlighting leadership.