

# Sandeep S

✉ sandeep.sath7@gmail.com

🐙 github.com/sandepstele

☎ +91-7550112670

in linkedin.com/in/sandeepstele/

## EDUCATION

### Easwari Engineering College

Bachelor of Engineering - Electronics and Communication Engineering; CGPA: 8.77

Chennai, India

2021 - 2025

*Courses:* Analog and Digital Circuits, Control Systems, Digital Signal Processing,,VLSI Design, Medical Electronics

### Indian Institute of Technology, Madras

Bachelor of Science - Data Science & Applications; CGPA: 8.45

Chennai, India

2022 - 2026

*Courses:* Machine Learning, Application Development,Business Analytics, Data Structures & Algorithms, DBMS,Linux

## EXPERIENCE

### Intern/Teaching Assistant - Business Data Management (MS2001) - IIT Madras

Jan 2024-Present

On Campus

- **Role:** As a Teaching Assistant for the course "Business Data Management," instructed by Professors Dr G. Venkatesh and Dr. Miland Gandhe, Conducted TA sessions and generated and validated datasets, utilising Python to automate in the backend to verify solutions.

### Paradox, IIT Madras

Chennai

Secretary

Jan 2023 - Present

- **Role:** As Secretary of Paradox I headed one of the largest student fest with a footfall of **4000+** students all across India, with a budget of **20 Million INR** with **17 departments**, **35+ events** and **over 5 Pro shows**.

Deputy Head of Finance and Operations Department

- **Role:** Headed a department that managed a **13 million INR** budget across **15 departments** and **30+ events**, optimizing procurement, venue setup, resource distribution, and implementing a rigorous inventory system. Maintained precise financial records and submitted a comprehensive final report to Secretaries.

### Project Intern - HCL Technologies Link

Jun 2023 - July 2023

Chennai

- **Project:** Developed a Course Recommendation System as part of the internship project. Utilized machine learning algorithms and data analysis techniques to create personalized course recommendations for users.

## RESEARCH WORK

### Modelling Clinical and Radiographic Data for Early Detection and Prediction of Osteoarthritis

Published in: 2025 IEEE 14th International Conference on Communication Systems and Network Technologies (CSNT)

- **Abstract:** This research presents a multi-modal approach for early detection and severity grading of Osteoarthritis using X-ray images and clinical data. By integrating deep learning and machine learning methods, it achieves high accuracy and demonstrates the effectiveness of combining modalities for improved diagnosis.
- **Skills Used:** Machine Learning, Deep Learning, Image Processing, Neural Networks, Predictive Modelling

## PROJECTS

### LLM-Based Automation Agent [🔗 Code]

Feb 2025 – Mar 2025

- Designed and deployed a secure LLM-powered automation agent using GPT-4o-Mini capable of parsing and executing plain-English tasks—such as file operations, web scraping, SQLite queries, Markdown formatting, and transcription—via REST APIs, containerized with Docker/Podman and integrated into CI pipelines with strict sandboxing constraints.

Python · FastAPI · GPT-4o-Mini · Docker · REST API · SQLite

### Crime Analysis and Prediction- Karnataka Police Hackathon [🔗 Code]

Feb 2024 - Jun 2024

- A portal with a dynamic dashboard has been developed for analyzing crime data using the state police's dataset. It integrates geospatial and behavioural analysis, identifies correlations, and employs time series analysis for predicting crime rates. [Click Here](#) [📺].

Python · Django · Google Geocoding · Pandas · Scikit-Learn · Facebook Prophet · Tableau · Folium

### Multimodal OA Detection with LLM Generated Insights [🔗 Code]

July 2024 – Mar 2025

- Built a Flask-based web application for Osteoarthritis detection by fusing clinical data and X-ray images using TensorFlow and XGBoost models, enhanced with a Retrieval-Augmented Generation (RAG) pipeline leveraging FAISS and OpenAI API to auto-generate personalized diagnostic reports and support interactive, context-aware chatbot responses for clinical queries.

Deep Learning · Image Processing · TensorFlow · Machine Learning · LLM-RAG · OpenAI API · HTML/CSS/JS

## HONORS AND AWARDS

**Winner- Karnataka State Police Datathon 2024-** Crime Prediction and Analysis(Conducted by Karnataka State Police, Microsoft India)

- **Runner-up** - Trump the Aces (Circuit Designing) and Ideathon **Invente '23**, SSN-CE Oct, 2023
- **Runner-up** - CTRL-Z, Kurukshetra'23, CEG Anna University Apr, 2023
- **Winner** - Solder-It and **Runner-E-Maze** (Circuit Design), **Invente '22**, SSN-CE Dec, 2022
- **Winner** - Circuit Debugging and **Runner-** DIY Electronics, **Coulomb'22** , REC Oct, 2022