JEET V. PARAB

+91-8734981818 ◇ jeetparab2512@gmail.com ◇ GitHub ◇ Homepage ◇ Thane, Maharashtra ◇ DOB: 25/12/2003

EDUCATION

Bachelors of Technology in Computer Science and Engineering **2025**
Indian Institute of Information Technology, Surat **CGPA: 9.03**

High School College **2021**
Pace Junior Science College, Thane **Percentage: 95.8**

SKILLS

Technical Skills	Machine Learning, Artificial Intelligence, Natural Language Processing, Automata, System Design, Web Development
Programming Languages	Python, C++, C, PHP, SQL, JavaScript, HTML, CSS
Frameworks & Libraries	NumPy, Pandas, TensorFlow, PyTorch, Scikit-learn, Keras, NLTK, Transformers, React, Laravel
Tools & Platforms	GitHub, Google Colab, Streamlit, Power BI, Label Studio, Docker, Linux
Coursework	Automata, DBMS, OS, DSA, AI, ML, NLP, OOPS, Web Development, Network Security, Cloud Computing, Big Data

EXPERIENCE

Technical Lead - Cloud and Data Engineer July 2025 - Current
HCLTech *Chennai, Tamil Nadu*

- Developed and deployed Large Language Models (LLMs) in HCLTech's ERS division to solve complex enterprise challenges.
- Fine-tuned transformer architectures for domain-specific tasks, integrating LLMs with enterprise platforms to boost automation and decision-making.
- Enhanced AI performance through prompt engineering, retrieval-augmented generation (RAG), and model distillation, improving efficiency and reducing latency.

Research Intern | Accepted NeurIPS D&B 2025 | Project Page Jan 2025 – Jul 2025
Sustainability Lab, IIT Gandhinagar *Gandhinagar, Gujarat*

- Contributed to the paper *SentinelKilnDB* under the mentorship of Prof. Nipun Batra; curated a novel dataset for brick kiln detection in South Asia using low-resolution Sentinel-2 imagery and benchmarked over 28+ traditional (one-stage, two-stage), Transformer-based (DETR) object detection models and remote sensing foundational models (Galileo, TerraMind).
- Boosted validated brick kiln detections to 65,616 (post hand validation), over double the count from lab's prior work (Patel et al. 'Space to Policy'), spanning India, Bangladesh, Pakistan, Nepal and Afghanistan.
- Integrated SimCLR and Jigsaw Puzzles as self-supervised pretext tasks for the YOLOv11m-OBB detection pipeline and enhanced the lab's Garuda library for manual annotation and oriented bounding box (OBB) hand-validation. Initiated integration of active learning and land cover auxiliary data to boost detection accuracy and reduce training time.

Project Intern Jun 2024 - Jul 2024
Prodware Solutions *Thane, Maharashtra*

- Using Machine Learning and Natural Language Processing to create a multi-functional chat bot using Google Dialogflow and Gemini.
- Oracle JDE is provided the Gemini generated query to provide details back to the user. Cut human-in-the-loop processing time by nearly 60% through workflow optimization.

PROJECTS

LLM-Based Energy Monitoring System [Python, Jupyter, LLM Prompt Engineering]

- Engineered an automated system generating Python code via LLMs, accurately answering 90%+ of natural language queries on the UCI Electric Power Consumption dataset.
- Processed over 2 million records for daily and monthly energy trend aggregation and visualization.
- Benchmarked five leading LLMs across 20+ queries, improving prompt quality and reducing code generation errors by 35%.

Brick Kiln Compliance Dashboard [Full Stack, Geospatial Analysis]

- Developed an interactive Python and Gradio dashboard monitoring over 44,000 brick kilns across India, responsible for 8–14% of national air pollution and linked to millions of deaths annually.
- Integrated multiple geospatial datasets (kilns, hospitals, waterways) to detect compliance violations based on distance thresholds, aiding targeted inspections and reducing harmful exposure for over 10 million people.
- Delivered dynamic visualizations (interactive maps, pie charts, bar charts) and detailed reports enabling policymakers to identify pollution hotspots, drive adoption of cleaner technologies, and cut tons of CO_2 emissions annually.

Signature Verification System [Image Processing using Machine Learning]

- A system to match and verify user signature using Machine Learning and Image Processing using OpenCV and sklearn. Labelled images are used to train the dataset and create the Verification System.
- Attained recall and precision values of 0.92 while testing using RF and SVM.

PUBLICATIONS

SentinelKilnDB: A Large-Scale Dataset and Benchmark for OBB Brick Kiln Detection in South Asia Using Satellite Imagery *NeurIPS 2025 (Datasets & Benchmarks), San Diego, USA*

Authors: Rishabh Mondal, **Jeet Parab**, Heer Kubadia, Shataxi Dubey, Shardul Junagade, Zeel B. Patel, Nipun Batra
ArXiv preprint link coming soon

LEADERSHIP AND CERIFICATIONS

- Core Member, Robotics Club, IIIT Surat 2023-2024
- Hosting Member of ACM Summer School: AI for Social Good, IIT Gandhinagar 2025
- Certificate Program in Global Financial Markets by Future First 2025
- McKinsey Forward Program Certification 2025