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# Jaiyesh Chahar

ML Engineer

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With 4+ Years expertise in AI ML, System Design, I've tackled diverse challenges across sectors like Energy, Automotive, Manufacturing and Smart City Automation. My career has involved creating innovative SAAS platforms, scalable AI pipelines, and low-latency deployment solutions. I'm adept in technologies like Gen AI,Statistical Modelling, Time Series Analysis, Deep Learning, Computer Vision, NVIDIA Tech stack, Docker, Databases, and more. Additionaly, I serve as a community mentor for Python and Machine Learning.

## Education

- **Master of Technology: Petroleum Engineering minor in Machine Learning ,** IIT (ISM), Dhanbad — **Jun 2019 — May 2021**
- **Bachelor of Technology: Petroleum Engineering ,** University of Petroleum and Energy Studies, Dehradun — **Jun 2015 — May 2019**

## Experience

**Lead Machine Learning Engineer** — **Feb 2025 — Present**
*Zensar Technologies | Zenlabs AI* — Bengaluru, India

- **Tech Lead - Advanced Computer Vision System for Automated Welding Quality Control**
  - Led cross-functional team in developing AI-powered platform for automated weld quality assessment, integrating real-time monitoring and web-based feedback systems
  - Engineered a scalable feedback mechanism for weld quality assessment, leading the team in implementing user feedback collection, model retraining pipelines, and continuous improvement processes based on real-world performance data
  - Led the model training and validation process, implementing best practices for data preprocessing, model selection, and performance evaluation, resulting in improved weld defect detection accuracy

  Skillset: Computer Vision, FastAPI, Watchdog, SMP (Segmentation Models PyTorch), PyTorch, OpenCV, Multi-threading, CORS, Distribute

**Machine Learning Engineer** — **Oct 2021 — Feb 2025**
*Siemens Technology and Services Private Limited* — Bengaluru, India

- **Automated Minutes of Meeting tool using Large Language Model**
  - Developed a LLM powered application for taking minutes of meeting and sharing it across the attendees via mail.
  - Build the pipeline using FastAPI and MongoDB powered with Private Azure hosted GPT model.

  Skillset: GenAI, FastAPI, Websocket, OpenAI, Azure OpenAI
- **Automotive Anomaly Detection AI Platform**
  - Created MQTT Service, Postgres Service, DL Inference Pipeline, System monitoring service and integrated them
  - Achieved constraint of processing, storing, and purging 32 images in under 5 seconds (10 TB+ data/ day) with high precision
  - Developed Deep Learning object detection pipelines for multiple use-cases in production.

  Skillset: Low latency Deployment, NVIDIA Triton, MQTT, Concurrent Processing, CI, Object Detection, Yolo, Pytorch, Model Registry
- **Future Mega Smart City Automation using Drone-Vision AI**
  - Established a scalable Deep Learning service template for over 10 use case owners to deploy computer vision models efficiently, collaborating with the Orchestration team to enhance AI software deployment
  - Developed tiny object detection models and classification models for Next Generation – Environment Compliance Assurance for construction location in smart city.
  - Mentored junior developers, helping them transition from using Jupyter notebooks to developing production-ready codes.

  Skillset: Object Detection, SAHI, Pytorch, FasterRCNN, ResNet,RabbitMQ, Docker Optimisation, DL Service Creation
- **Dielectric Fluid Leakage Detection**
  - Developed data driven solution for detection of leakage of dielectric fluid in high pressure fluid–filled pipe of underground electricity transmission line.
  - Developed sequential neural networks, machine learning models for leak prediction using historical data.

  Skillset: Time Series analysis, Forecasting, LSTM (Long short term memory), ANN, Random Forest, Streamlit
- **Building Boundary Change Detection using Satellite Imagery**
  - Developed a proof-of-concept (POC) to analyze changes in building boundaries in desert areas over multiple years using satellite images.

  Skillset: Pytorch, Segmentation, QGIS

**Open Source Projects** **Dec 2022 — Present**
*Github: jaiyesh* Bengaluru, India

- **Jira Copilot [Link]**
  - Conceptualized and created a web app named Jira Copilot aimed at automating effort estimation and standup calls.
  - Created scripts and APIs to handle birectional data flow from JIRA
  - Created a daily standup agent for taking updates from contributors and updating in JIRA.
  - Created Level-3 prompts, stored historical data in chromaDB and queried using Grollm. App hosted in OnRender

  Skillset: GenAI, ChromaDB, FastAPI, Prompt Enggineering, RAG, Nginx, Hosting, JavaScript
- **Interview-Valley**
  - Designed a interview suite based on Gen AI. Its suppose to generate intelligent questions based on JD or resume, in future will have audio and video interface too.
  - Created a full stack webapp using FARM stack. Contributed to Python, GenAI and Mongo micro-services.
  - Researched and Developed effective prompt combination to generate intelligent questions from documents. Implemented guard rails to prevent misuse of application.

  Skillset: FastAPI, MongoDB, OpenAI, LLM Guardrails, BERT, NLP, Spacy, Github actions, Text to Speech
- **DrillGPT [Link]**
  - Developed an end-to-end AI system for the petroleum industry: engineered synthetic drilling data generation, trained ML models for ROP and bit failure prediction, built a parameter optimization engine, and integrated Langgraph agent for automated recommendations and Word report generation.
  - Enabled drilling engineers to optimize parameters, assess operational risk, and automate daily reporting—empowering faster, safer, and more data-driven field decisions.

  Skillset: Langgraph, scikit-learn, OpenAI, Prompt Engineering, pandas, Reporting Automation, ML Ops

**Data Scientist** **Jan 2021 — Sept 2021**
*Dicelytics Pvt. Ltd. (Dice Technologies LLC)* Pune, India

- **Physics assisted machine learning tools for Oil and Gas Industry**
  - Created a reservoir physics assisted artificial intelligence and machine learning reinforced model to simulate, analyze and support field implementation of reservoir recovery management technologies.
  - Created Machine Learning Based Classification technique using Global Database for Enhanced Oil Recovery Screening.
  - Created tool for History Matching and Hydrocarbon Production Forecasting using sequential Deep Learning architecture.

  Skillset: Python,Time Series Analysis and Forecasting, Random Forest, LSTM, Machine Learning

## Patents and Publications

- **Published Research Work:**
  - Data-driven approach for hydrocarbon production forecasting using machine learning techniques in *Journal of Petroleum Science and Engineering*, DOI: https://doi.org/10.1016/j.petrol.2022.110757
  - GV Black Inspired Hierarchical Multiclass Classification using Panoramic Radiographic Synthetic Data: https://ieeexplore.ieee.org/document/10134923
  - Beyond Traditional Vibration Classification: https://adasci.org/lattice-volume-3-issue-2/beyond-traditional-vibration-classification
  - Comparative study of generative adversarial networks for sensor data generation-based remaining useful life classification, DOI: https://doi.org/10.1201/9781003381167
- **Patents:**
  - System and Method for Data Encryption and Decryption.
  - Federated Auto Vision for Automotive Defect Detection and Information Retrieval.

## Awards & Achievements

**2019** Secured All India Rank of 64 (Gen) in GATE(PE) examination (>99th percentile)
**2023** Received Top 5 Community Contributors award of the country in AI for 2023 by Analytics Vidhya
**2024** Received Newcomer Inventor award of the Year at Siemens.
**2024** Top winner of XED'24 Innovation Challenge at Siemens.
**2021** Co-Founder of Petroleum from Scratch (an E-learning venture).
**2021** An active Public Speaker, presented and talked on several Webinars and Workshops in Universities across the globe and platforms like Analytics Vidhya, AI Planet.