VIJAY TAKBHATE

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PROJECTS

Medical Insurance Cost Prediction (SVR) *Sep 2025 – Present*

- Built a predictive system to estimate **medical insurance charges** using demographic and lifestyle factors (age, BMI, smoking status, region, etc.).
- Trained and optimized an **SVR model with GridSearchCV**, improving performance from R^2**: 0.72 → 0.86** and reducing **MAE from 0.099 → 0.034**.
- Developed a **Flask web application (HTML/CSS UI)** for user-friendly predictions, containerized it with **Docker**, and deployed on **AWS EC2**.
- Implemented **MLOps best practices**: MLflow model tracking, CI/CD with GitHub Actions, and automated pipelines with Kubeflow.
- Demonstrated **end-to-end ML lifecycle management**, covering data preprocessing → model training → deployment → monitoring.
- **Tech Stack:** Python, Flask, Docker, MLflow, Kubeflow, AWS EC2, GitHub Actions, HTML/CSS
- **GitHub:** github.com/vijaytakbhate2002/medical-insurance-cost-prediction-SVR

Turbofan Jet Engine Lifecycle Prediction *Aug 2025 (25th – 31st) — CNN + LSTM*

- Developed a **Jet Engine RUL Prediction system** using the NASA CMAPSS dataset to improve predictive maintenance insights.
- Built an end-to-end **MLOps pipeline** with automated data processing, model training, and deployment.
- Designed a hybrid **CNN + LSTM model** to capture complex temporal and spatial patterns in sensor data.
- **Tech Stack:** Git, DVC, Dagshub, MLflow, AWS, Docker
- **GitHub:** github.com/vijaytakbhate2002/nasa-turbofan-engine-lifecycle-prediction

EXPERIENCE + COURSES

InCred Financial Services Dec 2024 – Present

Risk Analyst (MLOps & Data Engineering Focus) *Mumbai, Maharashtra*

- Owned policy development and deployment in the **Business Rule Engine (BRE)** production system, ensuring compliance and seamless integration with business processes.
- Designed and built a custom Python package called **"Simulator"** to verify implemented policies, reducing policy verification time by **30%** and testing code complexity by **50%**.
- Implemented **CI/CD workflows with GitHub Actions** to automate builds, run unit/integration tests, and deploy simulator + policy updates into production.
- **Skills Utilized:** Python, GitHub Actions (CI/CD), Databricks, Metabase, SQL, Git, Excel

Fox Solutions Pvt. Ltd. Feb 2024 – Oct 2024

Automation Engineer (Intern + Full-time) *Maharashtra, Pune & Nashik*

- Developed and deployed **automation pipelines** with a focus on reproducibility, monitoring, and reducing manual intervention.
- Applied concepts of **version control, reliability engineering, and system monitoring** to ensure scalable and consistent automation workflows.
- **Skills Utilized:** Pipeline Automation, Monitoring Systems, Version Control, PLC/SCADA Tools

Technical Skills

Programming: Python, SQL (MySQL)

MLOps Tools: MLflow, DVC, DagsHub, Docker, GitHub Actions (CI/CD), Streamlit, Flask

Data Engineering: Databricks, PySpark, Metabase

Cloud & Orchestration: AWS, GCP (basic), Kubernetes

Certifications

Complete MLOps Bootcamp with 10+ Projects — Udemy — Ongoing

- Applied course learnings to build an **end-to-end MLOps pipeline** (CI/CD, experiment tracking, deployment) — (Turbofan Jet Engine Lifecycle Prediction), reducing code complexity by **30–40%**.

MLOps Bootcamp: Mastering AI Operations — Udemy — Jun 2024

- Implemented the **MLOps lifecycle** with Flask + MLflow, deploying ML models — (Loan Eligibility Prediction).

Education

SVERI's College of Engineering — Pandharpur, Maharashtra
Bachelor of Technology in Electronics and Telecommunication — *Graduated: May 2024*

- Graduated with an aggregate of **81.71%**, completing industry-aligned training.

SVERI's College of Engineering — Pandharpur, Maharashtra
Diploma in Electronics and Telecommunication — *Graduated: May 2021 — **91.73%***

Blogging

Supervised, Unsupervised, & Beyond: ML Techniques Simplified — LinkedIn Article

- Broke down core ML paradigms (supervised, unsupervised, semi-supervised, online/offline learning) into simple, real-world explanations.
- Used relatable examples like spam filtering, clustering, and pseudo-labeling to make complex ML techniques accessible to beginners.

Comprehensive Docker Guide — Containerizing Flask Applications

- Published a hands-on guide explaining Docker fundamentals (Dockerfile, images, containers) tailored for ML practitioners.
- Demonstrated containerizing and deploying a Flask ML application, with practical steps for building, running, and scaling Dockerized apps.

Languages

English **Marathi** **Hindi**

Soft Skills

Critical Thinking Intellectual Rigor Problem Solving Understanding Business Needs