

OJAS SINGH

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Education

VIT Bhopal University

Integrated M.Tech - Computational and Data Science (**CGPA:- 8.42**)

Oct. 2022 – Apr. 2027

Bhopal, Madhya Pradesh

Kendriya Vidyalaya G.C.F. No. 1

Senior Secondary (**Percentage:- 88%**)

May. 2021 – Apr. 2022

Jabalpur, Madhya Pradesh

Projects

Diabetic Retinopathy Detection System | Python, TensorFlow, OpenCV, Scikit-learn, XGBoost

July 2025

- Developed an ensemble detection system with **CNN**, **RF**, and **XGB**, preprocessing **2750** retinal images, achieving **75.27%** accuracy.
- Resolved imbalanced data with **weights** and optimized **memory usage** for efficient processing.
- Addressed imbalanced data with class weights, resolved overfitting using **Dropout layers** and early stopping during 100-epoch training.

Zomato EDA and Regression Analysis | Python, Pandas, Matplotlib, Seaborn, Scikit-learn

May 2025

- Conducted in-depth **EDA** on Zomato's restaurant data to identify factors influencing ratings, cleaning 20+ features including location, cuisines, and cost with **missing and inconsistent values** resolved using mapping and imputation.
- Engineered features and trained **XGBoost** and **Linear Regression models**, achieving an **R²** score of **86.4%**, enabling robust prediction of restaurant ratings based on food, service, and cost parameters.
- Tackled **multicollinearity** by performing **correlation analysis** and **feature selection**, significantly reducing model complexity while maintaining high prediction accuracy.

Algerian Forest Fire Prediction System | Python, Pandas, Scikit-learn, Flask, NumPy, Matplotlib

April 2025

- Engineered & cleaned **Algerian Fire Weather Index dataset** (**FFMC**, **DMC**, **DC**, **ISI**, **BUI**, **FWI**), creating lag/interaction features and boosting cross-validated performance (Accuracy **93%** / **R² 0.88** vs **0.62 baseline**).
- Tuned ensemble pipeline (**XGBoost + Random Forest**) with stratified K-fold and permutation importance, reducing **MAE 27%** and lifting **minority fire-event recall to 0.91**.
- Deployed Flask API (less than **120 ms inference**) with serialized scaler/model and interpretability (**feature importance**), cutting false alarms nearly **18%** and enabling actionable early risk alerts.

Experience

Database Analyst Intern

Oct 2025 – Dec. 2025

University Management System | SQL, SQLite, Python, SQLAlchemy

- Designed and managed a relational database for academic workflows using SQL and **SQLAlchemy**.
- Implemented secure **CRUD operations**, **joins**, and role-based data access for students, faculty, courses, exams, and grades.
- Ensured **data integrity**, **normalization**, and **transactional consistency** across multiple academic modules.

Technical Skills

Languages: Python, Java, SQL

Developer Tools: Tableau, Google Colab, VSCode, Git, GitHub

Database: SQLite, RDBMS

Technologies/Frameworks: Flask, Numpy, Pandas, Scikit-learn, Matplotlib, Seaborn, TensorFlow, OpenCV, SQLAlchemy(ORM)

Soft Skills: Communication, Teamwork, Problem Solving

Certifications

- Applied Machine Learning in Python by University of Michigan (**Coursera**)
- Introduction to Machine Learning (**NPTEL**)