

# UTSAV PAL

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## EDUCATION

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• **VIT Bhopal University**, India

**CGPA:8.33**

BTech(Computer Science and Engineering),2026

**Coursework:** Data Structure, Design, and Analysis of Algorithms, Operating System, DBMS

## PROJECTS

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• **Advanced Ecommerce Recommendation System | Python, NLP**

- Engineered a content-based recommendation system with results within 100 milliseconds.
- Supercharged product recommendations on e-commerce platforms for 1 million products.
- Attained a remarkable 95% accuracy rate with NLP Models, including Bag of Words and TF-IDF.
- Seamlessly integrated the Amazon product advertising API for enhanced functionality.

• **Handwritten Digit Recognition | Python, ML, KNN, AI, Numpy, Tensorflow**

- Employed KNN algorithm to achieve a recognition accuracy of 95% on handwritten digits.
- Fine-tuned the ML model to enhance performance, resulting in a 20% accuracy improvement.
- Implemented K-fold cross-validation, ensuring model robustness and reducing variance by 15%.
- Employed optimized KNN algorithms, reducing computation time by 25% with high accuracy.
- Engineered an AI architecture with efficiently processing large datasets with a 30% improvement

• **Predictive Health Diagnosis System | Python, AI, ML, Pandas, Linear Regression, Logistic Regression**

- Developed a Python-based ML model predicting pollution levels with 90% accuracy.
- Demonstrated proficiency in Python, ML, specifically Linear Regression, for air quality predictions.
- Achieved 92% accuracy in predicting air quality index using a Linear Regression model in Python
- Validated through 90% data analysis, ensuring high-quality input and reliable predictions.
- Conducted comprehensive data analysis, ensuring a clean dataset with 98% data completeness

• **Face Recognition System | Python, ML(KNN), OpenCV**

- Implemented the K-Nearest Neighbor (K-NN) classification algorithm for face recognition.
- Utilized OpenCV and HaarCascades for precise frontal face detection under 700 milliseconds.
- Achieved an outstanding error rate below 3% on a dataset comprising 1,000 images.

## TECHNICAL SKILLS

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- Languages: Python (Proficient), Java,C++
- Full Stack Development : HTML, CSS, Javascript
- Database: Mysql,
- Data Science: NLP, Standard ML Algorithms(Regression, Classification, Clustering)
- Data Analysis: Numpy, Pandas, Matplotlib
- Developer Tools: IntelliJ, VS Code, Git, Eclipse, Jupyter

## HONORS AND AWARDS

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- **Solved 50 problems** on [Codechef](#), [Leetcode](#), [Hackerrank](#), Interviewbit and SPOJ.