

# Nikhil Bansal V

Alliance Orchid Springs, Korattur, Chennai-76

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## EDUCATION

**Vellore Institute Of Technology, Chennai**

Sep 2023 – May 2027

Bachelor of Science in Computer Science with specialization in Cyber Physical Systems

**Relevant Coursework:** Data Structures, Algorithms Analysis, Database Management, Operating Systems, Computer Architecture, Machine Learning

## EXPERIENCE

**IEEE Robotics and Automation Society VITC Student Chapter**

Feb 2024 – Present

Data Science Member

**IEEE Photonics Society Student Chapter VITC**

Apr 2024 – Present

Technical Team Member

**CloudOps VITC**

May 2024 – Nov 2024

Technical Team Member

**Internship Trainee at CodSoft**

Sep 2024 – Oct 2024

Java Developer

**Vibrance'25, VIT Chennai**

Jan 2025 – Mar 2025

Registration Committee Member

## PROJECTS

**SoulSync**

June 2025

- Full-stack matchmaking web app built with React (Material-UI) on the frontend, FastAPI microservices (ML scoring and user management) on the backend, and MongoDB for persistence, all wired together with JWT-based authentication and CORS-enabled APIs.
- Machine-Learning-Driven Compatibility Engine that normalizes user profiles (age, Big Five personality traits, lifestyle habits, hobbies) into feature vectors, computes weighted Euclidean and Jaccard similarities, and returns a percentage score.
- Rich, responsive UI featuring a multistep registration wizard, live match recommendations, on-the-fly profile comparison, and persisted comparison history, deployed end-to-end on Vercel (front-end) and Render (back-end & ML service).

**News Topic Classifier**

Feb 2025

- Engineered a full NLP pipeline in the AG News dataset: performed EDA, cleaned text with NLTK, and extracted TF-IDF features in 120K+ articles.
- Three classifiers (MultinomialNB, LogisticRegression, and LinearSVC) were trained and benchmarked, selecting and saving the top model for 4-way news-topic categorization.
- The solution was containerized and deployed as a Flask Web app, enabling real-time user input and reproducible inference via a public GitHub repository.

**Legal Case Classifier**

Feb 2025

- Built a machine learning model using BERT and RoBERTa to classify legal cases as court- or negotiable-based on importance.
- Fine-tuned the model for high accuracy and deployed it as a web application using Flask.
- Real-time classification and case analysis through a user-friendly interface.

## Heart Disease Risk App

May 2025

- Built a Streamlit app with XGBoost powered sliders for age, blood pressure, cholesterol, heart rate, etc., dynamically updating a color-coded risk gauge.
- Hybrid Alert System Explainability: Integrated rule-based red flag warnings (e.g.  $BP > 160$  mm Hg,  $Chol > 300$  mg/dL) along with an inverted logistic regression calculation of heart age to translate the probabilities of the model into an intuitive age metric.
- End-to-End ML Deployment: Developed data pre-processing, model training (XGBoost + baseline logistic), and live app deployment on Streamlit Community Cloud.

## Apology and Confession Website

Aug 2024

- Developed an interactive multi-page website to express an apology and confess feelings in a creative and engaging way.
- Implemented a series of apology pages with conditional navigation based on user responses using JavaScript.
- Delivered a memorable and meaningful digital confession.

## TECHNICAL SKILLS

**Languages:** Python, Java, C, C++

**Machine Learning Frameworks:** Pandas, Numpy, Matplotlib, Seaborn, Scikit-Learn, Tensorflow-Keras, OpenCV

**Web Development Frameworks:** HTML, CSS, React

**Databases:** MySQL, OracleSQL

**Developer Tools:** VS Code, Cisco Packet Tracer, LTSpice, ModelSim, Keil, MATLAB, Git

## CERTIFICATIONS

- Oracle Gen AI Associate — Oracle (June 2025)
- Data Science and Machine Learning — Udemy (Mar 2024)
- Machine Learning Essentials with Azure ML — Microsoft Learn Student Ambassadors (Aug 2024)
- Python, C, C++ — IIT Bombay (July 2024)
- Career Essentials in Data Analysis — Microsoft (Jun 2024)
- Computer Vision with OpenCV and Deep Learning — Udemy (Jan 2025)

## ACCOMPLISHMENTS

- Qualified for the national level in the spelling bee competition.
- Gold Medalist NSO and IMO secured the first rank in both the National Science Olympiad (NSO) and the International Mathematics Olympiad (IMO) at the school level.
- Presented a research paper titled "NEOM: A Country Inside a Country" at the Virtual International Conference on Sustainable Smart Cities Integrated with Clean Energy Sources (SCES 2024).
- Part of the Little Ramanuja group during school, fostering a strong interest in mathematics.
- Achieved Top 50 position in the Hack-N-Droid Hackathon conducted by the Android Club.