

# Vinayak Nautiyal

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Computer Science Student — Backend & Systems

## EDUCATION

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**Vellore Institute of Technology (VIT), Vellore**  
*B.Tech in Computer Science and Engineering*

2024 – Present  
CGPA: 8.89/10

## EXPERIENCE

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### Freelance Developer — Vedic Wellness

- Developed and deployed a full-stack e-commerce platform for a real-world Ayurvedic business using Next.js and PostgreSQL
- Architected backend using server actions, route handlers, and a service-layer abstraction with Prisma ORM for structured data access
- Implemented authentication with RBAC, OTP-based verification, and Redis-backed rate limiting to secure user and admin workflows
- Built transactional order processing workflows and normalized database schema for products, users, and orders
- Optimized public catalog performance using server-side rendering and cache revalidation for read-heavy traffic
- Containerized PostgreSQL using Docker for consistent local development and environment isolation

## PROJECTS

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### InsightRush | *FastAPI, DuckDB*

- Developed backend APIs for CSV ingestion and analytical query execution in a hackathon-based project
- Implemented schema and query validation to ensure safe and consistent data processing
- Built an approximate query-processing pipeline using sampling and statistical estimation for COUNT, SUM, and AVG
- Collaborated with frontend to design API responses including execution metadata and results

### Hybrid CNN-PCA Face Recognition | *Python, TensorFlow, Scikit-learn*

- Built a face recognition pipeline using MobileNetV2 for feature extraction and PCA for dimensionality reduction
- Reduced feature space from 1280 to 50 components and trained an SVM classifier achieving 92% accuracy
- Implemented preprocessing pipeline including image normalization, resizing, and feature vector generation
- Evaluated model performance using train-test split and classification metrics

## TECHNICAL SKILLS

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

**Frameworks:** React, Next.js, FastAPI

**Databases:** PostgreSQL

**Tools:** Git, GitHub, Docker, REST APIs

**Systems & Concepts:** Data Structures & Algorithms, OOP, Authentication, RBAC, Basic Security Concepts

## EXTRACURRICULAR

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### Rotaract Club, VIT Vellore

- Participated in community outreach and educational initiatives