

VEERAJ PANCHAL

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🐙 GitHub

🌐 LinkedIn

🌐 Portfolio

Education

D. J. Sanghvi College of Engineering, Mumbai

Expected 2028

B.Tech in Artificial Intelligence & Machine Learning

Bharati Vidyapeeth Institute of Technology, Navi Mumbai

Feb 2025

Diploma in Computer Technology

Aggregate: 92.3%

Technical Skills

Languages: Java, Python, JavaScript, SQL

Backend Development: Spring Boot, Django, Next.js, REST APIs, MVC Architecture, Dependency Injection

Databases & Data Engineering: PostgreSQL, MySQL, Prisma ORM, Pandas, Data Validation, Transaction Reconciliation

Software Engineering: Object-Oriented Programming (OOP), Data Structures & Algorithms, DBMS, Computer Networks

Testing & Automation: JUnit 5, Mockito, Selenium WebDriver, Unit Testing, Integration Testing

AI/ML: Scikit-learn, Sentence Transformers, Semantic Search, OpenCV, YOLOv8

Tools: Git, GitHub

Experience

Software Developer Intern | Raiseon Automation

Aug 2024

Certificate

- Developed a **C# desktop application** integrating the **Cognex DataMan 250 SDK** to interface with an industrial vision camera for automated barcode inspection.
- Implemented **hardware-triggered image acquisition** and barcode-data capture workflows to support real-time inspection and reduce manual handling.
- Integrated camera operations with application logic to coordinate image capture, barcode reading, and inspection-data processing within the desktop workflow.

Projects

ReconAI – AI-Assisted Financial Reconciliation Platform

May 2026 – Present

Live Demo | GitHub

- Built a reconciliation platform using **Django, Pandas, and Next.js** to match transactions across multiple source systems, with database persistence of runs and results. Implemented semantic column mapping with ***Sentence Transformers (all-MiniLM-L6-v2)*** to map unfamiliar financial schemas to canonical fields.
- Developed a deterministic matching engine handling date tolerance, amount discrepancies, duplicates, sign reversals, and grouped transactions.
- Added exception analysis using **KNN, Logistic Regression, Isotonic Regression, and Apriori** for pattern detection and confidence calibration.
- Benchmarked end-to-end processing at **$\leq 9s$ for 10K** entries and about 1 minute for larger runs, tested up to **1.3 lakh (130K)** entries.

AI Smart Traffic Management System

Jan 2026 – Present

GitHub

- Developed an AI-based traffic monitoring prototype using **Django, OpenCV, and YOLOv8 Nano** to detect vehicles from CCTV/video feeds for intersection-level traffic analysis.
- Implemented **lane-wise traffic density estimation** using detected vehicle bounding boxes, enabling the system to distinguish traffic demand across different lanes rather than treating the intersection as a single region.
- Integrated density-based **adaptive traffic signal logic** to allocate signal time according to observed lane demand, moving beyond conventional fixed-time signal control.
- Investigated model evaluation using **$mAP@50$ and $mAP@50:95$** and identified vehicle occlusion, detection reliability, and inference latency as key factors affecting traffic estimates and real-time signal decisions.

Dynamic Result Analyzer

Mar 2025

GitHub

- Developed a **Java Spring Boot** application that uses **Selenium WebDriver** to automate extraction of student results and compute performance analytics.
- Exposed REST APIs for data extraction, processing, and result analysis, replacing repetitive manual result processing.

Grievance Management System

Mar 2026

Live Demo | GitHub

- Built a role-based complaint management platform with RESTful APIs using **Next.js, Prisma ORM, and PostgreSQL**.
- Implemented secure authentication, department-wise complaint routing, and status-history tracking across the resolution workflow.