

Pooja Patel

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Profile Summary

Computer Science undergraduate and aspiring Applied ML Systems Researcher with a robust foundation in core CS fundamentals, distributed architectures, and cybersecurity. Proven track record of architecting and deploying AI-native security tools, self-healing code systems, and highly scalable data pipelines. Deeply passionate about tackling complex engineering challenges at the intersection of Machine Learning, Systems Design, and Security Infrastructure.

Education

Parul University

BTech in Computer Science Engineering, CGPA: 8.0/10 (First Class with Distinction)
Strong focus on CS fundamentals, Algorithms, and Operating Systems preparation.

Vadodara, India

2022–2026

Technical Skills

Languages: Python 3.10, Ruby, JavaScript, Java, C/C++, Rust, Bash

Applied ML & AI: Amazon Bedrock (Nova Pro, Claude 4 Sonnet), TinyLLM, NLP Analysis, Predictive Modeling

Systems & Architecture: FastAPI, Redis Streams (Event-Driven/Distributed), Neo4j (Knowledge Graphs), AST Analysis

Cloud & DevOps: Docker Compose, Kubernetes, MinIO (Data Lakes), Google Cloud, CI/CD, GitHub Actions

Security & Core: Vulnerability Assessment, Asset Discovery, Sandbox Execution, Threat Modeling, Reconnaissance

Professional Experience

Udaan Society

Software Development Engineer

Remote

Jan 2026–Mar 2026

- Engineered a custom, scalable project management platform tailored for non-profit operations, streamlining task allocation, resource tracking, and cross-functional team collaboration.
- Architected the backend services and secure API endpoints to ensure strict data integrity and high availability for organizational stakeholders.

Pregard

Cybersecurity Trainee

Remote

Jul 2023–Oct 2023

- Partnered with core engineering teams to assess infrastructure security risks, actively participating in system threat modeling and vulnerability analysis.
- Analyzed security gaps and recommended configuration changes to improve overall compliance, user trust, and deployment reliability.

Applied Research & Systems Projects

Distributed Cybersecurity Platform

NETRA v2 - AI-Native Asset Discovery Engine

2025

- Distributed Architecture:** Architected an event-driven reconnaissance pipeline utilizing Redis Streams to decouple heavy I/O ingestion from CPU-intensive ML analysis.
- Knowledge Graph & Storage:** Integrated Neo4j for real-time dynamic asset mapping and visualization, alongside MinIO for highly scalable, long-term data lake storage.
- ML Integration:** Developed a 'Zombie API' detection mechanism using a hybrid Ruby/Python engine and TinyLLM for shadow API discovery, paired with an NLP-powered 'Cyber-AI Neural Terminal'.

AI-for-Bharat Hackathon

OASIS - Self-Healing Documentation Engine

2026

- **Automated Validation System:** Developed an automated Git bot that utilizes static AST analysis and isolated runtime sandboxing to validate code snippets across 10+ programming languages.
- **AI-Powered Auto-Correction:** Implemented an auto-correction pipeline utilizing Amazon Bedrock (Nova Pro + Claude 4 Sonnet) to detect breaking changes and dynamically heal repository documentation.
- **Workflow Integration:** Engineered seamless CI/CD integration into GitHub/GitLab PR workflows to maintain a mathematically accurate Single Source of Truth for technical documentation.

Predictive ML System

Disaster Risk Prediction Platform

2023

- Built an end-to-end ML-powered platform to model and visualize disaster risks for policy and education stakeholders.
- Managed the entire data lifecycle: raw data ingestion, feature engineering, model training, and deployment.

Secure AI Application

Privacy-First Personal Assistant

2025

- Engineered a localized, privacy-centric AI assistant, focusing on minimizing data transmission and maintaining user anonymity during complex query processing.

Leadership & Volunteering

National Cadet Corps (NCC)

Cadet

2022–2025

Led civic campaigns on hygiene and environmental awareness. Developed robust crisis management, public engagement, and technical leadership skills in high-pressure environments.