

PRASHANT YADAV

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SUMMARY

Computer Science graduate working across full-stack development and applied AI/ML from a **deployed** news-analysis platform (Next.js, TypeScript, RAG with LLMs) to a real-time computer-vision threat-detection pipeline (PyTorch, YOLOv8, Swin Transformer). Strong in Python, C++, and JavaScript/TypeScript with React and Node.js, on a solid DSA foundation (300+ LeetCode solved). Targeting Software Engineer or AI/ML Engineer roles.

EDUCATION

Lovely Professional University

Bachelor of Technology in Computer Science Engineering

Phagwara, Punjab, India

July 2025

- Relevant Coursework: Data Structures & Algorithms, Operating Systems, Database Management Systems, Object-Oriented Programming

PROJECTS

Prism: News Transparency & Bias Analysis Platform

Live | GitHub

Next.js, TypeScript, React, Tailwind, Node.js, LLMs (Groq), RAG

- Built and **deployed** a full-stack news-transparency web app (Next.js, TypeScript, Tailwind on Vercel) that refracts any article, YouTube link, or pasted text into a six-stage analysis: sentence-level claim/opinion/rhetoric classification, source provenance, live fact-checking, and cross-outlet coverage-gap comparison.
- Engineered a retrieval-augmented (RAG) fact-checking pipeline that ranks an article's most salient claims, searches them against live web sources, and grounds an LLM (Llama 3.3 70B via Groq) verdict in real citations with a ≥ 2 -source backfill so no verdict rests on a single proof.
- Designed resilient Node API routes with fail-open Redis (Upstash) caching and per-IP rate limiting, keyless domain/hosting forensics (RDAP/DNS/IP), and keyless YouTube transcript extraction via the InnerTube API degrading gracefully instead of crashing when a dependency is absent.

Real-Time Surveillance Threat Detection System

GitHub

Python, PyTorch, YOLOv8, Swin Transformer, OpenCV, CUDA

- Architected a real-time, multi-stage computer-vision pipeline chaining a Swin Transformer conflict classifier, a fine-tuned YOLOv8 weapon detector, and a crowd-density estimator into a unified threat-scoring engine, reaching **83% recall / 75% precision (F1 0.79)** on a held-out evaluation set.
- Trained and fine-tuned the models in PyTorch on a custom-labelled surveillance dataset, applying targeted data augmentation, class balancing, and OpenCV frame preprocessing to raise conflict-detection precision and cut false positives on crowded, visually ambiguous scenes.
- Built a GPU-accelerated (CUDA) inference loop with OpenCV and NumPy that decodes, preprocesses, and scores frames in real time, overlaying live conflict, weapon, and crowd alerts across both live streams and recorded footage.

Invoice Management Platform

GitHub

React, Node.js, Express, MongoDB, REST API, JWT

- Built a full-stack MERN invoicing platform with JWT authentication, client management, and invoice creation over a self-designed REST API (Node, Express, MongoDB).
- Developed a responsive React dashboard with PDF export and a revenue / paid / outstanding analytics view powered by MongoDB aggregation pipelines.
- Implemented the full invoice lifecycle (draft $\rightarrow$ sent $\rightarrow$ paid $\rightarrow$ overdue) with automatic status transitions, searchable paginated listings, and schema validation across all routes.

TECHNICAL SKILLS

Languages: C++, Python, JavaScript, TypeScript, SQL

Frontend: React, Next.js, Tailwind CSS, HTML, CSS

Backend: Node.js, Express, FastAPI, REST APIs, JWT Authentication

AI / ML: PyTorch, OpenCV, YOLOv8, Deep Learning, Computer Vision, LLMs, RAG, Prompt Engineering

Databases: MongoDB, MySQL, Redis

Developer Tools: Git, GitHub, Docker, CI/CD, Vercel, AWS, Postman, Linux, VS Code

CERTIFICATIONS & ACHIEVEMENTS

Certifications: JavaScript (CypherSchools) | React.js (Coursera) | Node.js (Coursera)

Competitive Programming: LeetCode: 300+ problems solved, contest rating 1600+