

PRAKASH SHAH

Data Science, AI/ML Engineer & Full-Stack Developer

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SUMMARY

AI/ML Engineer and full-stack developer who designs, builds, and ships complete systems end to end — from model architecture and explainability through to production-grade backends and interfaces. Core strengths: computer vision, applied NLP/LLM systems, and scalable web platforms built with Python, PyTorch, Django REST Framework, FastAPI, and React. Comfortable owning a project from data pipeline to deployment.

TECHNICAL SKILLS

- Languages: Python, JavaScript/TypeScript, C, C++, C#
- AI/ML: PyTorch, TensorFlow, Scikit-learn, CNNs, Grad-CAM, U-Net segmentation, YOLO/YOLO-World, LoRA/PEFT fine-tuning, Transformers, Retrieval-Augmented Generation (RAG)
- Backend & Web: Django, Django REST Framework, FastAPI, React, TypeScript, Tailwind CSS, Vite, REST API design, JWT auth
- Data & Infra: NumPy, Pandas, ChromaDB, MySQL, MongoDB, Docker, Git/GitHub, Postman

EXPERIENCE — PROJECTS

CancerAI — Multi-Cancer Diagnostic Screening Platform — *PyTorch · Grad-CAM · U-Net · FastAPI · React*

- Architected an AI-assisted screening system spanning seven cancer types, combining PyTorch classifiers with U-Net segmentation for lesion localization.
- Engineered a FastAPI backend with JWT authentication and automated PDF report generation; integrated Grad-CAM for model explainability.

Royal Pay — Fintech Payment Wallet for Nepal — *Django REST Framework · React/TypeScript*

- Built a full-stack multi-currency wallet integrating five Nepali payment gateways — eSewa, Khalti, Fonepay, ConnectIPS, IME Pay.
- Designed KYC verification and a merchant dashboard; shipped a single-server Django deployment serving both API and frontend.

AI-Proctored Online Exam System — *Django · Computer Vision · Multi-Tenant Architecture*

- Built a multi-institution exam platform with AI proctoring, including HOG-based face-direction classification and chunked live-video monitoring.
- Eliminated N+1 query bottlenecks and multi-tenancy bugs; automated marksheet/PDF generation with ReportLab and a teacher-controlled retake workflow.

Agentic RAG Pipeline — *FastAPI · ChromaDB · LLM Integration*

- Designed a retrieval-augmented generation system pairing a FastAPI backend with a ChromaDB vector store and an LLM-driven agentic query layer.

Computer Vision Suite — *PyTorch · MobileNetV2 · YOLO · Streamlit*

- Shipped CIFAR-10 classification via MobileNetV2 transfer learning with Grad-CAM explainability, plus YOLO/YOLO-World object detection, served through Streamlit and a Flask REST API.

Face Authentication Microservice — *FastAPI · DeepFace/ArcFace · MediaPipe*

- Built a reusable, liveness-aware face-authentication microservice exposed over HTTP for consumption by other applications.

LoRA Fine-Tuning for Customer Support (Flan-T5) — *HuggingFace PEFT · Gradio*

- Fine-tuned Flan-T5 with LoRA/PEFT for support-response generation, evaluated with ROUGE-L, and demoed through a Gradio interface.

OTHER PROJECTS

- Customer Churn Prediction — Tuned Random Forest (GridSearchCV), deployed via Streamlit, Flask, and Docker.
- Facial Emotion Recognition — VGG-style CNN with real-time OpenCV webcam inference.
- Smart Inventory & Billing System — Retail billing platform with Nepal-specific VAT (13%) and local payment methods (in progress).

EDUCATION

B.Sc. Computer Science and Information Technology (B.Sc. CSIT) — *Patan Multiple Campus, Tribhuvan University — 8th Semester (Final Year)*

Intermediate (+2 Science) — *Ghodaghodi Multiple Campus, Kailali — NEB, 2020*

CERTIFICATIONS

- Data Science & AI/ML Engineer — Mindrisers Technology (Completed July 31, 2026)
- Full-Stack Development with Python & Django — Evolve It Hub (Completed September 2024)
- Deep Learning Specialization — Andrew Ng (In Progress)
- Python for Data Analysis — Kaggle / Self Projects (In Progress)

LANGUAGES

- Nepali — Fluent | English — Intermediate | Korean — Basic