

AASHUTOSH PANTHA

Full Stack Engineer · AI Systems Builder · Workflow Automation
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[LinkedIn](#) | [GitHub](#) | [Portfolio](#)

PROFESSIONAL SUMMARY

Full Stack Software Engineer with applied AI Engineering experience across two tech internships in Nepal. Specializes in Retrieval-Augmented Generation (RAG), multilingual ASR (English + Nepali), OCR fine-tuning, and CPU-optimized inference pipelines. Equally strong in backend systems (Django REST, ASP.NET Core MVC), React.js frontends, and Azure cloud deployment. Builds scalable, compliant, and maintainable systems with a track record of measurable impact — from reducing scheduling errors by 40% to cutting deployment cycles by 35%. Driven by AI-first engineering and automation.

TECHNICAL SKILLS

Languages	Python, C#, PHP, JavaScript, TypeScript, SQL
Frameworks	Django REST Framework, ASP.NET Core MVC, React.js, Flask, FastAPI, Entity Framework, Razor Pages, WebSockets / Socket.io
Databases	PostgreSQL, MySQL, MSSQL, FAISS, Pinecone, ChromaDB, Gemini Embeddings
AI / ML	RAG, Embedding Models, Semantic Search, Multilingual ASR (EN+NP), Whisper CPU-Optimized, WebRTC VAD, OCR Fine-Tuning, CNNs, NLP, Multimodal Models
AI Tooling	PyTorch, TensorFlow, Hugging Face Transformers, FastText Language ID
Cloud/DevOps	Microsoft Azure, GitLab CI/CD, GitHub Actions, Docker (basic), Kafka, Azure App Services
Automation	n8n Workflows, Webhook Integrations, Selenium, Event-Driven Systems, API Chaining
Standards	ISO 27001, GDPR, HIPAA, NIST, JWT Auth, Cryptography, Secure API Design, OOP, MVC, RESTful APIs, Agile/Scrum, SQL Optimization
AI Perf.	Model Inference Optimization, Quantized Models (INT8/Q8), CPU-Optimized Pipelines, whisper.cpp
Design	UI/UX Design, Responsive Web Design, UI Animations, Adobe Photoshop

PROFESSIONAL EXPERIENCE

AI Engineer · [One Window Pvt. Ltd](#) Oct 2025 – Jan 2026

- Designed and deployed CPU-only hybrid ASR pipelines for English and Nepali, combining WebRTC VAD speech segmentation with quantized Whisper for near-real-time transcription on resource-constrained hardware.
- Built end-to-end RAG systems using FAISS and Pinecone vector databases, enabling semantic document search and context-aware LLM responses across multilingual corpora.
- Fine-tuned OCR models for Nepali and English documents, including dataset curation, preprocessing pipelines, and evaluation benchmarking.
- Developed TensorFlow CNN pipelines for barcode recognition, optimized for real-world image conditions with variable lighting and rotation.
- Experimented with Hugging Face Transformers (PyTorch) for NLP and multimodal tasks, focusing on inference optimization and reproducibility across environments.
- Documented all AI pipelines, model assumptions, and performance trade-offs to ensure production maintainability and team knowledge transfer.

Full Stack Software Engineer Intern · [Nepal Telecom](#) (*Internship*) Jul 2025 – Oct 2025

- Built Duty Chart Management System (Django REST + PostgreSQL) supporting scheduling operations for 200+ employees; reduced scheduling errors by 40%.
- Developed Intern Management System (Django REST + React.js + PostgreSQL) for tracking intern assignments, evaluations, and reporting across departments.
- Integrated React.js frontends with DRF APIs for real-time updates; optimized SQL queries reducing response times by 25%.
- Implemented Swagger/OpenAPI documentation, reducing API integration issues by 30%.
- Designed n8n automation workflows for event-driven notifications and internal operations, cutting manual workload by 40%.

- Authored detailed technical documentation for APIs, workflows, and troubleshooting guides, enhancing system maintainability and scalability.

Full Stack Web Developer Intern · GoScaleX (Internship)

Jan 2025 – Apr 2025

- Built and customized responsive WordPress CMS using PHP, MySQL, and JavaScript; improved SEO visibility by 20% via Yoast SEO.
- Optimized backend plugins and performance, reducing client support tickets by 15%.

Associate Project Manager – IT & Media · Netizen Nepal

Mar 2023 – Oct 2023

- Coordinated IT and media teams in Agile environments ensuring on-time project delivery.
- Streamlined documentation workflows reducing reporting delays by 30%; facilitated cross-functional remote collaboration.

PROJECTS

Duty Chart Management System *Django REST Framework · React.js · PostgreSQL · Swagger · JWT | Nepal Telecom*

- Engineered full backend with DRF, JWT authentication, and role-based access control. Integrated React frontend for dynamic scheduling with real-time updates. Reduced manual scheduling effort by 40%.

Intern Management System *Django REST Framework · React.js · PostgreSQL | Nepal Telecom*

- Built intern tracking system covering assignment management, performance evaluations, and automated reporting for NTC's internship program across departments.

Hybrid Multilingual ASR Pipeline *Python · Whisper (whisper.cpp) · WebRTC VAD · FastText | One Window Pvt. Ltd*

- CPU-only real-time ASR system supporting English and Nepali with automatic language identification, voice activity detection, and quantized Whisper inference. Designed for deployment on low-resource hardware.

RAG System – Semantic Document Search *Python · FAISS · Pinecone · ChromaDB · LLM APIs | One Window Pvt. Ltd*

- End-to-end Retrieval-Augmented Generation pipeline with vector embeddings, semantic chunking, and context-aware LLM response generation for multilingual document corpora.

OCR Fine-Tuning Pipeline *Python · PyTorch · Hugging Face Transformers | One Window Pvt. Ltd*

- Fine-tuned OCR models on curated Nepali and English document datasets. Handled full ML lifecycle: dataset curation, augmentation, training, and evaluation benchmarking.

Barcode Recognition System *Python · TensorFlow · CNNs | One Window Pvt. Ltd*

- CNN-based barcode detection and classification pipeline trained to handle real-world imaging conditions including rotation, blur, and variable lighting.

Quantum Canvas *ASP.NET Core MVC · Razor Views · Azure CI/CD*

- Digital art eCommerce platform with minimalist animated UI/UX. Automated Azure deployment pipeline; increased user engagement by 18%.

Blazed Cosmos *ASP.NET Core MVC · React.js · Azure*

- Print-on-demand store with modern frontend animations and Azure-hosted backend. CI/CD integration reduced deployment time by 35%.

E-Commerce Cart System *ASP.NET Core MVC · EF Core · Razor Pages · Azure*

- Secure shopping cart with role-based access, product management, and checkout flows. Deployed via Azure App Services with GitHub Actions CI/CD.

EDUCATION

B.Sc. CSIT — Tribhuvan University, New Summit College

2021 – 2025

Coursework: Cryptography (CSC316), Security Risk Management, Web Technology, Software Engineering, DAA, DBMS

+2 Science (CBSE) — Kendriya Vidhyalaya, Kathmandu

ACHIEVEMENTS & LEADERSHIP

- Core Organizing Member, TechTriX Nepal — Led organization of major university-level tech event at New Summit College (Tribhuvan University).
- Delegate, NYC Model United Nations — Represented institution at Nepal's first national MUN; strengthened research, diplomacy, and communication skills.

- Rotary Youth Leadership Awards (RYLA) — Selected for nationwide leadership program, Nepal Police School, Sanga.
- French Olympiad, New Delhi — Represented school in national-level French language competition.

LANGUAGES

Nepali (Native) **English** (Fluent) **Hindi** (Fluent) **French** (Intermediate)