Abiral Bhattarai

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GitHub LinkedIn

Education

Tribhuvan University March 2021 – April 2025
Bachelor of Engineering in Computer Engineering Grade: 74.85%
Kathmandu Model Secondary School 2018 – 2020
High School (Science) CGPA: 3.61

Technical Skills

Languages: Python, C++, C, SQL
Backend & APIs: Strawberry GraphQL, FastAPI, GraphQL Federation, Django, gRPC, Pydantic
AI/ML: LangChain, LangGraph, Google Gen AI SDK, OpenAI SDK, PyTorch, Scikit-learn, SpaCy, NLTK
Databases, Storage & Messaging: PostgreSQL, Redis, Amazon S3, Apache Kafka
Cloud & DevOps: Docker, Argo CD, GitHub Actions
Architecture & Tools: Hexagonal Architecture, Microservices, Asyncio, Git, GitHub
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Experience

Veel August 4, 2026 – Present
Jr. AI/ML Engineer

- Designed and developed backend services for AI-powered media editing, integrating generative AI capabilities into production workflows.
- Built an AI-powered marketing agent using **LangGraph** and the **Google Gen AI SDK**, implementing multi-agent orchestration and human-in-the-loop validation to automate campaign strategy, creator angles, video scripts, and marketing content generation.
- Developed audio authenticity detection services using multimedia inference pipelines to identify AI-generated audio through spectrogram-based analysis and chunk-level inference.

Veel May 2026 – August 2026
AI/ML Engineering Intern

- Engineered production event-driven backend microservices using **Strawberry GraphQL**, **FastAPI**, **Pydantic**, **gRPC**, and **Apache Kafka**, following **Hexagonal Architecture** to build scalable asynchronous AI services.
- Designed multimedia inference pipelines leveraging **dynamic audio chunking**, **unique-frame analysis**, **asyncio**, and **semaphores** to reduce AI inference costs while preserving inference quality.
- Developed computer vision services for **face verification**, configurable **distance-based skin tone classification**, and automated video caption generation.
- Built distributed media harvesting pipelines that streamed social media content into **Amazon S3**, publishing download, upload, processing, completion, and failure lifecycle events to **Apache Kafka** with dedicated **Dead Letter Queues (DLQs)** for resilient event processing.
- Delivered production platform capabilities including **UGC readiness scoring**, creator recommendations, dynamic pricing, and AI-powered content moderation.
- Containerized and deployed backend services using **Docker** and **Argo CD**, collaborating with cross-functional teams across Product, Backend, Mobile, Marketing, QA, Sales, and Data to deliver production AI systems.

Quickfox Consulting August 2025 – November 2025
Software Engineer Intern Lalitpur, Nepal

- Developed modular workflow nodes for an enterprise RPA orchestration platform to automate business processes.
- Built a Retrieval-Augmented Generation (RAG) chatbot for banking clients using **LangChain** and **FastAPI**, enabling document-aware question answering.

Advanced College of Engineering and Management December 2025 – March 2026
Lab Instructor Kathmandu, Nepal

- Conducted laboratory sessions in Database Management Systems, Operating Systems, and Web Development.
- Mentored undergraduate students in software engineering, debugging techniques, and programming best practices.

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Research & Certifications

Research Publication: *Comparative Study of Deep Learning Models for MHC-II and Epitope Binding Affinity Prediction* (JACEM, 2025) – Conducted a comparative evaluation of LSTM, TCN, and Transformer architectures for peptide binding affinity prediction.

Certifications: Machine Learning Scientist in Python (DataCamp) • Deep Learning with PyTorch (DataCamp) • Natural Language Processing in Python (DataCamp) • Data Science Foundations (IBM)