Bigyan Aryal

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Education

Paschimanchal Campus, IOE, TU, Pokhara-16, Lamachaur **May 2023**
Currently Pursuing Bachelor In Computer Engineering,

Relevant Experience

Innovative Computer Engineering Student's Society, **Pokhara-16, Lamachaur** **July 2024-January 2025**
AI Bootcamp

- Achieved faster project execution (reduced weekly model debugging time by ~25%) as measured by group progress consistency, by structuring tasks and aligning teammates on model experiments.
- Improved model understanding across the team, measured by higher training stability, by analyzing architecture choices and presenting findings.
- Enhanced project quality during hands-on labs by using AI tools for code review and documentation, increasing iteration speed by ~20%.

Activities

- Nepal Data Challenge 001: Achieved 70% accuracy and secured 2nd place by fine-tuning nepBERTa and optimizing training cycles.
- TechParva Datathon: Increased loan prediction accuracy (A–G grading) through feature engineering and model comparisons.
- Yantra Hackathon: Improved detection performance of Nepali cultural tools by fine-tuning YOLOv8 on a custom dataset, raising detection consistency.

Projects

- RAG-Based AI Research Assistant (LangChain + FAISS)
  - Achieved efficient large-scale retrieval (handling 500k+ documents) as measured by sub-second vector search times, by designing a FAISS database and structuring ingestion workflows.
  - Increased query accuracy by ~30% by fine-tuning retrieval pipelines and automating multi-step reasoning with LLM agents.
- FormalNet – NLP Style Transfer Application (Django + Transformers)
  - Delivered a functional text-to-formal style transformer, measured by consistent inference quality, by integrating a transformer model into a Django REST backend.
  - Improved input reliability by building a preprocessing pipeline that reduced malformed inputs by ~40%.
  - Accelerated feature testing by coordinating tasks and using AI assistants for debugging and experiment planning.
- Containerized Image Captioning API (Docker + FastAPI)
  - Enabled scalable cloud deployment, measured by successful container uptime and API responsiveness, by packaging the captioning model into Docker and deploying it via FastAPI.
  - Reduced environment issues by building a reproducible container setup that cut setup time for others by ~50%.
- Shakespeare GPT & Transformer Implementations
  - Improved understanding of LLM internals, measured by successful training convergence, by implementing attention, positional encoding, and transformer blocks from scratch in PyTorch.
  - Generated coherent text outputs by training a tiny GPT model on the Tiny Shakespeare dataset and iterating on training parameters.

Skills & Interests

1. **Technical Skills:** Backend Development, AI/ML Research, Generative AI, Agentic AI
2. **Languages and Tools:** Python, C, C++,JS, PyTorch, Django REST, Langchain, Langgraph, FastAPI, Docker, Azure, Git