Bigyan Aryal

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Education

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

Shree Shanti Namuna Secondary School, **Tilottama-5, Rupandehi** **June 2022**
GPA 3.59

Relevant Experience

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

- Collaborated with peers on deep learning projects including Pose Estimation and CNNs.
- Participated in hands-on sessions covering PyTorch, computer vision, and EDA.
- Contributed to group discussions, shared findings on model performance and architecture choices.

Activities

- Participated in TechParva 3.0 Datathon, worked on a bank loan dataset to predict the grade of the "loan worthiness" from A to G.
- Participated in Yantra Hackathon by Pokhara Engineering College, worked on an object detection project fine tuning a Yolo v8 model to detect some of the cultural Nepali tools.
- Participated in Nepal Data Challenge 001, finetuned nepBERTa model for Nepali Text Sentiment Classification. Achieved 70% accuracy and ranked 2nd in the final leaderboard.
- Research on AlexNet Architecture, Analyzed AlexNet's design and historical impact on deep convolutional networks. Compared model depth, filter sizes, and use of ReLU vs. other early models.

Projects

- Built a real-time pose estimation app using OpenCV and a deep learning backend. Tracked body joints and counted repetitions based on angle heuristics.
- Designed a CNN to classify clothing items in Fashion MNIST. Enhanced performance through data augmentation and model regularization.
- Transformer Architecture – Studied the "Attention Is All You Need" paper to understand the foundational Transformer model.Implemented a simplified Transformer from scratch in PyTorch for sequence-to-sequence tasks (e.g., English-to-Nepali translation). Applied key components like multi-head self-attention, positional encoding, and layer normalization.
- FormalNet : Built a Django web application and integrated a transformer-based NLP model for style transfer. Implemented preprocessing pipeline (tokenization, cleaning, normalization) for robust input handling.
- Built a Shakespeare GPT from scratch. Every portion of a transformer block was divided and built individually then combined to form a transformer. Tiny-Shakespeare Dataset was passed onto the transformer and trained to generate the text just like Shakespeare.
- Containerized an image captioning deep learning model using Docker and FastAPI, successfully deploying the model to a cloud web service for real-time inference.

Skills & Interests

1. **Technical Skills and Tools**
   Python, C, C++, PyTorch, NumPy, Pandas, Django REST, FastAPI, Docker, Azure, Git

2. **Languages**
   Nepali, English

3. **Interests**
   Chess, Video Games, Football