Anurag G.C.

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Personal Profile

A motivated and inquisitive Computer Engineering graduate aspiring to pursue higher studies in Artificial Intelligence, with strong interests in Deep Learning, Computer Vision, and NLP. Possesses a solid academic foundation and practical experience in deep learning, image analysis, and LLMs/VLMs. Passionate about developing intelligent AI systems using reliable deep learning techniques to solve real-world perception and language understanding problems. Proficient in Python, PyTorch, and C++, with experience in designing research workflows, improving models, and collaborating on interdisciplinary AI projects. Eager to contribute to advanced research in visual intelligence within a collaborative academic environment.

Education

Tribhuvan University, IOE Pulchowk Campus **May 2022 – Apr 2026**
Bachelor in Computer Engineering; Acceptance Rate: $< 1\%$ *Lalitpur, Nepal*
Relevant Coursework

- Data Structures and Algorithms
- Software Engineering
- Database Management
- Artificial Intelligence
- Computer Organization and Architecture
- Instrumentation
- Embedded System
- Microprocessor
- Computer Graphics
- Distributed System
- Computer Network and Security
- Data Communication
- Information System

Tribhuvan Jan Secondary School **July 2019 – Nov 2021**
Higher Secondary School; CGPA: 3.4 *Luhaping, Salyan*

Experience

Fogsphere, United Kingdom **Apr 2026 – Nov 2026**
Machine Learning Engineer *Remote*

- Worked as an AI/ML Engineer specializing in Computer Vision and developing custom models for detection and classification.

Nepal Applied Mathematics and Informatics Institute for Research **May 2026 – Nov 2026**
AI Research Assistant *Jwagal, Lalitpur, Nepal*

- Conducted research on video understanding focusing on egocentric videos on VLMs and Robotics.
- Participated on the Orena - SAVE FOCUS challenge.

Nepal Applied Mathematics and Informatics Institute for Research **Feb 2026 – Apr 2026**
AI Research Intern *Jwagal, Lalitpur, Nepal*

- Conducted research on multimodal machine learning models, focusing on integrating and analyzing data across multiple modalities (e.g., text, images, video).

Tribhuvan Jan Secondary School **Apr 2025 – June 2025**
Volunteer Teacher *Luhaping, Salyan, Nepal*

- Voluntarily taught Mathematics and Science to students of grades 6 and 7.
- Helped students understand basic concepts and improve academic performance.

Projects

May 2026 – Sep 2026

ORena - SAVE FOCUS challenge (Rank 9) | *PyTorch, Deep Learning*

- Created a strong MLLM for efficient **surgical video** question answering.
- Outperformed both fine-tuned and proprietary baselines of challenge organizers.
- Eligible to share co-authorship on publication.

May 2025 – May 2026

Handwritten Devanagari Character Recognition | *PyTorch, Deep Learning*

- Created a comprehensive **Devanagari** handwritten character dataset—**consonants with vowel diacritics (432 classes)**—and performed **benchmarking** with a CNN.
- Developed preprocessing pipelines (resizing, centering, binarization) and automated scripts for scalable dataset handling.

Dec 2025

Diffusion Augmented Particle Event Classification | *PyTorch, Deep Learning, Hugging Face*

- Created an end-to-end **physics-aware** pipeline for simulating, augmenting, classifying, and generating particle detector events using deep learning.
- Simulated the particle events, finetuned **DDPM** to generate more samples enforcing **Energy Conservation** and compared the performance of **VGG16** and **ViT** for classification.

Dec 2025

Fine-Tuned FLAN-T5 for Abstractive Lecture Summarization | *Python, Fine Tuning*

- Demonstrated how to fine-tune the **google/flan-t5-small** model for abstractive text summarization.
- Fine-tuned **google/flan-t5-small** model using **QLoRA** in **Lightning.ai**.

Nov 2025

Inverse imaging of brain conductivity using Electrical Impedance Tomography EIT | *Keras, Deep Learning*

- Developed an AI-enhanced Brain Electrical Impedance Tomography **(EIT)** system using an Attention **U-Net** to reconstruct clearer, radiation-free brain images from scalp electrode data.
- Improved image quality and reliability of EIT for safer, faster brain monitoring by leveraging deep learning–based spatial attention.

Mar 2025

DDPM - Denoising Diffusion Probabilistic Model (MNIST) | *PyTorch, Deep Learning, Diffusion Models*

- Implemented a full **DDPM** from **scratch** following the original paper, trained on **MNIST** dataset.
- Features include: full **U-Net** architecture with residual blocks and self-attention, sinusoidal positional encoding, linear & cosine noise schedulers, and EMA for stability.

April 2025

Air Quality Analysis using GNN | *GNN, Python, FastAPI, React*

- Used a **GNN** model to capture spatio-temporal relationships between air quality stations.
- Forecast air-pollutant concentrations for the next 24 hours.

Nov 2023

Rapid Route | *Flask, Python, React.js, Dijkstra's algorithm*

- Built a web app to find the shortest route between places in **Kathmandu** using **Dijkstra's** algorithm.
- Collected real distance data from Google Maps for over **50 locations**.
- Used **Vite** for the frontend and a **Flask** backend API to process routes.

Relevant Skills

Knowledge: Machine Learning • Deep Learning • Cloud Computing • MERN

Programming Languages: Python • C++ • SQL • Shell Scripting (Linux) • HTML/CSS • TypeScript

Technologies/Frameworks: Scikit-learn • PyTorch • TensorFlow • NumPy • Pandas • Django

Tools/Platforms: Git • MySQL • Cloud (AWS)

Honour and Awards

- **AI Fellowship 2025:** FuseMachines
- **ORena - SAVE FOCUS Challenge 2026:** Outperformed fine-tuned and proprietary baseline models, submitting final model architecture and technical methodology for evaluation.

Leadership / Extracurricular

Locus CR **Jan 2023**

LOCUS, IOE Pulchowk Campus *Tribhuvan University*

- **Led** a dedicated team to oversee and coordinate all aspects of a sector within the LOCUS technical exhibition, ensuring seamless execution and high-quality presentations.
- Managed logistics and **operations**, including budgeting, scheduling, and vendor coordination, to deliver a successful and impactful exhibition experience.

Additional Courses and Certification

AWS Solution Architect Associate **Jan 2025**

- Hands-on experience designing and implementing data pipelines using AWS services such as Glue, Lambda, and S3.
- Practical knowledge in deploying and managing scalable cloud applications leveraging EC2, VPC, and IAM.
- Proficient in building ETL workflows to efficiently ingest, transform, and load data with AWS tools for enhanced data accessibility.
- Understanding of AWS storage solutions including S3, EBS, Glacier, and RDS for reliable data management and backup.
- Implemented AWS security best practices focusing on data protection, identity management, and access control using IAM roles and policies.

Member of Professional Society

- Locus, IT Club (Institute of Engineering, Pulchowk Campus)