Date: 30th Jan 2026

6TH ANNUAL NEPAL AI SCHOOL

CERTIFICATE OF APPRECIATION

This certificate is presented to **Aavash Chhetri** in recognition of his exemplary performance in mentoring and facilitating the hands-on lab sessions as a **Teaching Assistant** at the Sixth Annual Nepal AI School (ANAIS) 2025, organized by Nepal Applied Mathematics and Informatics Institute for Research (NAAMII) at Swostishree Gurukul, Kathmandu, Nepal, from 29 December 2025 to 8 January 2026. He also contributed to the preparation of instructional materials for the *LLM Foundations: AI Agents and nanoGPT* lab session.

Topics Covered

Geometric Deep Learning – Message Passing Neural Network (MPNN)[1]

- Set up the PyTorch and PyTorch Geometric environments for graph learning.
- Implement a MPNN framework incorporating neighbour aggregation and node update functions.
- Perform link prediction on the Cora citation graph, including edge train/validation/test splitting and negative edge sampling.
- GIN encoder for node embedding generation and MLP edge decoder for binary link classification.
- Training using BCE loss and evaluation using ROC-AUC and Average Precision (AP).
- Analyse expressive power using the 1-Weisfeiler–Lehman (1-WL) algorithm.
- Implement WL colour refinement and compare with learned embeddings.
- Verify permutation equivariance and graph-level invariance through pooling operations.

Geometric Deep Learning – Geometric Generative Models and Transformers[1]

- Implement conditional flow matching and continuous vector fields.
- Train MLP-based flow matching models and generate samples.
- Apply methods to Two Moons and Swiss Roll datasets.
- Review SDEs, Euler–Maruyama method, and score matching.
- Implement encoder-decoder and GPT-style Transformer architectures.
- Train character-level language models and compare architectures.

LLM Foundations: AI Agents and nanoGPT[2]

- Language modelling and autoregressive text generation.
- Character-level tokenization and vocabulary construction.
- Bigram language models and self-attention.
- Query-Key-Value attention and scaled dot-product attention.
- Layer normalization, training workflows, and text generation.

Advisors

[1] Prof. Michael Bronstein, University of Oxford, UK and AITHYRA, Austria
[1] Assoc. Prof. Ismail Ceylan, TU Wien and AITHYRA, Austria
[1] Alisia Lupidi, University of Oxford, UK
[1] Teodora Reu, University of Oxford, UK
[2] Dr. Vijay Prakash Dwivedi, Stanford University

Francois Rameau	Ashutosh Modi	Vijay Prakash Dwivedi	Suman Raj Bista
General Chair	General Chair	General Chair	Program Co-Chair

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