

# AADIM NEPAL

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## EDUCATION

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### New York University Abu Dhabi

2022–2026

Bachelor's degree, Mathematics and Computer Science

Major GPA: **3.95**, cGPA:**3.86**

*Relevant Coursework:* Honors Analysis, Linear and Non-Linear Optimization, Deep Learning (graduate), Foundations of Machine Learning (graduate), Information Theory for Deep Learning, Graph Machine Learning, Stochastic Processes

## EXPERIENCE

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### The Deep Learning Lab

January 2025 – Present

*Research Assistant, New York University Abu Dhabi*

*Machine Learning*

- Supervisor: Prof. Keith Ross, Ravid Shwartz-Ziv
- Led a project on LLM Interpretability, analyzing layer importance in large language models for mathematical reasoning.
- Contributed to two projects on LLM Reasoning, investigating reinforcement learning, distillation methods, and warm-up strategies for enhanced reasoning in resource-constrained settings.

### The Clinical AI Lab

September 2023 – August 2024

*Research Assistant, New York University Abu Dhabi*

*Machine Learning*

- Supervisor: Prof. Farah E. Shamout
- Developed a multi-modal AI system integrating OCT scans with patient EHR data from Cleveland Clinic Abu Dhabi to predict stroke risk, designing and implementing the AI pipeline for OCT scan analysis.

### The Center for Cosmology and Particle Physics

June 2023 – August 2023

*Research Assistant, New York University*

*Computational Physics*

- Supervisors: Prof. Ingyin Zaw, Prof. Joseph D. Gelfand
- Processed images from 12 VLBA telescopes using CASA on Linux to study radio emissions of super-massive black holes, performing statistical and visual analysis with Python.

### Alpha Agro Pvt. Ltd.

May 2020 – May 2022

*Research Intern*

*Alpha Agro R&D Team*

- Supervisor: Dr. Pramod Aryal
- Conducted in-silico Molecular Docking and ADME analysis, predicting and inducing mutations in target proteins using PyMOL to test lead compound efficacy.

## PUBLICATIONS

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- **A. Nepal**, S. Shrestha, A. Shrestha, M. Kim, K. Ross. Layer Importance for Mathematical Reasoning is Forged in Pre-Training and Invariant after Post-Training. *Accepted to EMNLP BlackboxNLP, NeurIPS MATH-AI Workshop 2025.* arXiv:2506.22638.
- M. Kim, A. Shrestha, S. Shrestha, **A. Nepal**, K. Ross. Reinforcement Learning vs. Distillation: Understanding Accuracy and Capability in LLM Reasoning. *Accepted to NeurIPS MATH-AI Workshop 2025.* arXiv:2505.14216.

- S. Shrestha, M. Kim, **A. Nepal**, A. Shrestha, K. Ross. Warm Up Before You Train: Unlocking General Reasoning in Resource-Constrained Settings. *Accepted to EMNLP 2025 Main Conference*. arXiv:2505.13718.
- S. Shurrab, **A. Nepal**, T. J. John, N. G. Ghazi, B. Piechowski-Jozwiak, et al. Multimodal Deep Learning for Stroke Prediction and Detection using Retinal Imaging and Clinical Data. *Accepted to EMBC 2025*.

## AWARDS AND RECOGNITIONS

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- **Yann LeCun's Graduate Deep Learning Competition** 2024  
Achieved 5th place as an undergraduate in a competition primarily for MS and PhD students, using JEPA on grid images to predict the movement of snakes.
- **Slush'D Hackathon, NYUAD** 2024  
Secured Top 10 position in a competitive hackathon focused on innovative solutions.
- **International Genetically Engineered Machines (iGEM)** 2023  
Earned Silver Medal as part of the NYUAD iGEM team.
- **Fusemachines AI Fellowship** 2022  
Selected as an Artificial Intelligence Fellow for outstanding potential in AI research.
- **International Biology Olympiad (IBO)** 2020  
Achieved Top 4 nationally in the Nepal National Biology Olympiad, earning selection to represent Nepal in the IBO.
- **World Schools Debating Championship (WSDC)** 2020  
Member of the Nepal National Debate Team, breaking the national record for being closest to the breaks.

## EXTRACURRICULAR ACTIVITIES

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- **NYUAD Swim Team** 2022–Present  
Completed Beginners and Intermediate Swimming, and active member of the NYUAD Swim Team
- **NYUAD Tennis Club, Advanced Tennis Team** 2023–Present  
Active member of the Advanced Tennis Team, participating in regular training sessions.
- **Nepali Student Association (NSA), Senior Member** 2025–Present  
Contribute to organizing cultural events and fostering community engagement, representing Nepali heritage at NYUAD.
- **Mentor, Student Research Council Nepal (SRCN)** 2022–2023  
Selected and mentored five high school students from Nepal on a computational drug validation project, targeting the PBP2 protein with penicillin as a lead compound.
- **Travel** 2025–Present  
Passionate about travel and historical adventures, having explored 25 countries, with notable visits to Tromsø, Norway; Auschwitz, Poland; Kronborg Castle, Denmark; Angkor Wat, Cambodia and Buddha's Trail in Bodh Gaya, India, among others.