

WORK EXPERIENCE AND RESEARCH

Research Assistant

Apr. 2024 - Present

Nepal Applied Mathematics and Informatics Institute for research

Lalitpur, Nepal

Supervisor: Dr. Binod Bhattarai

- Working on research projects focused on **trustworthy machine learning**.
- Developed an **OOD detection method** for pathology segmentation in volumetric medical images, specifically MRI and CT scans, based on **self-supervised learning** with synthetic anomalies, leading to a **5th-rank** in the MICCAI 2024 challenge.

Undergraduate Research Intern

Aug. 2023 - Mar. 2024

Nepal Applied Mathematics and Informatics Institute for research

Lalitpur, Nepal

Supervisor: Dr. Binod Bhattarai

- Worked on an **Active Learning framework** to determine the most effective **uncertainty-based sampling technique** to address dataset imbalance in a multi-class object detection task.
- Trained deep learning models and conducted an ablation study for detecting gait abnormalities in warehouse environments.

EDUCATION

Pulchowk Campus - Institute of Engineering, Tribhuvan University

Nov. 2019- Apr. 2024

B.E in Electronics, Communication and Information

- Achieved Rank 104 in the university entrance examination out of nearly 18,000 candidates - **top 0.6%**, and received the scholarship provided by the Government of Nepal covering full tuition expenses
- Graduated with **75.73%**, ranked in the top 5% of students, and as the **top-performing female student** in the program.

PUBLICATIONS

- **Chhetri, A.**, Korhonen, J., Gyawali, P., & Bhattarai, B. (2025). **NERO: Explainable Out-of-Distribution Detection with Neuron-level Relevance**. *In International Conference on Medical Image Computing and Computer-Assisted Intervention (MICCAI), 2025*

SELECTED ACADEMIC PROJECTS

Improving Adversarial Image Robustness For Preventing Image Manipulation

Oct. 2023 - Apr. 2024

Capstone Project

[Link to Repo](#)

- Developed a **JPEG-resistant image immunization pipeline** to prevent text-guided AI manipulation, specifically for text-guided diffusion models.
- Investigated the impact of text prompts on the **success of adversarial attacks** against **text-guided diffusion models**.

Real-Time Visual Element Generation Using GANs

Dec. 2022 - Apr. 2023

Academic Project

[Paper](#) | [Link to Repo](#)

- Developed a **real-time neural rendering system** for generating realistic grass in video games.
- Experimented with existing architectures, performed result analysis, and designed new architectures that achieved both visual fidelity and low inference time.

TEACHING EXPERIENCE

Fifth Annual Nepal AI School - NAAMII

27th Dec., 2024 - 6th Jan., 2025

Teaching Assistant

[Certificate](#)

- Performed live demonstrations of adversarial attacks in image models and LLMs to an audience of 100 students under the supervision Prof. Yash Raj Shrestha (University of Lausanne, Switzerland).
- Assisted in lab sessions on Geometric Deep Learning, Active Learning, and Self-Supervised Learning.

AWARDS AND HONORS

Mentee, Women Leaders Mentorship Programme, EU in Nepal	<i>Dec. 2024–Present</i>
Mentor: H.E. Veronique Lorenzo , EU Ambassador to Nepal, 4.4% acceptance rate	
Medical OOD Analysis Challenge, 5th Place , Pixel-level Task	<i>October 2024</i>
MICCAI 2024	
Hacking for Humanity 2023, 2nd Runner Up	<i>February 2023</i>
Shequal Foundation, Nepal's largest all female hackathon	
GritFeat AI Health Hackathon, 1st Position	<i>January 2023</i>
GritFeat Solutions	
Ace Ignite 2022 Hackathon, 1st Position	<i>November 2022</i>
Ace Institute of Management	
ABU-Robocon 2022, 2nd Runner Up	<i>August 2022</i>
Asia-Pacific Robot Contest	
3rd Annual Nepal AI School - Full Scholarship	<i>December 2021</i>
Nepal Applied Mathematics and Informatics Institute for Research	
Mahatma Gandhi Scholarship	<i>2017-2018</i>
Embassy of India	

VOLUNTEER EXPERIENCE

- **Organizing Committee** *Oct. - Dec., 2024*
Fifth Annual Nepal AI School - NAAMII
 - **Lead Organizer** for the AI School Hackathon, where I managed logistics, including stakeholder coordination, task division, and event planning both prior to and during the event.
 - **Served on the admissions committee** and evaluated around 150 applications under scholarship category.
- **AI Trainer, Right to Information** *10th Aug. - 14th Aug., 2024*
Sancharika Samuha, The Asia Foundation, USAID Nepal
 - Led an AI training session in eastern Nepal with **50 journalists from 6 districts**, focusing on enhancing their understanding of AI technology.
 - Provided foundational AI knowledge and conducted hands-on training, demonstrating how tools like **ChatGPT, DALL-E, and Claude** can be used by journalists in Nepal to enhance productivity.
- **Children in Technology, 2023** *26th - 29th Nov., 2023*
LOCUS 2023
 - Led a team of **13 undergraduate students** to **5 underserved rural communities** in eastern Nepal, engaging with **13 schools** and approximately **2,000 students** on internet safety and cyber law.

AFFILIATIONS

- **Event Manager** *Dec. 2021 - Feb. 2023*
IT Club, Pulchowk Campus
 - Organized **5 events**, each attended by approximately **40 students**, covering topics such as low-level system programming and UI/UX design.
 - Oversaw **technical setups** and **logistics** for all club events.
- **Student Member** *Dec. 2019 - Aug. 2022*
Robotics Club - Pulchowk Campus
 - Worked on multi-view geometry and object localization using stereo vision for a ball-throwing robot in **ABU-Robocon 2022**.
 - Organized a **robotics training camp** for 35 primary school students at 2 public schools, aiming to encourage early interest in robotics and STEM.
 - Mentored junior members for **ABU-Robocon 2023**.

TECHNICAL SKILLS

Language: Python, LaTeX, C/C++, MATLAB

System: Linux, Windows

Software: Emacs, Git, Arduino IDE

Machine Learning Framework: PyTorch, Wandb

Electronics: Arduino, Raspberry Pi Pico, PCB design, Soldering