Anju Chhetri

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WORK EXPERIENCE AND RESEARCH

Research Assistant *April 2024 - Present*
Nepal Applied Mathematics and Informatics Institute for Research Lalitpur, Nepal
Supervisor: Dr. Binod Bhattarai

- Working on research projects focused on **machine learning robustness** and **interpretable AI**.
- 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 **5$^{\text{th}}$-rank** in the MICCAI 2024 challenge.

Undergraduate Research Intern *August 2023 - March 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 *November 2019- April 2024*
B.E in Electronics, Communication and Information

- Graduated with **75.73%**, ranked in the top 5% of students, and as the top-performing female student in the program.

PROJECTS

Improving Adversarial Image Robustness For Preventing Image Manipulation *October 2023 - April 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 *December 2022 – April 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.

Depth Estimation Using Stereo Vision *April 2022 – June 2022*
Personal Project *Link to Repo*

- Developed a **computer vision system** to detect and estimate the position of a ball in the opponent team's robot using stereo vision and YOLOv5, with **position estimation in real-world coordinates**.
- Created a custom dataset of 3000 images for ball localization.

Awards and Honors

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

Volunteer Experience

Organizing Commitee   *October - December, 2024*

Fifth Annual Nepal AI School - NAAMII

- **Served on the admissions committee** and evaluated around 150 applications.
- **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.

AI Trainer, Right to Information   *10th August - 14th August, 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 November - 29th November, 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   *December 2021 - February 2023*

IT Club, Pulchowk Campus

- Organized **5 events**, each attended by approximately **50 students**, covering topics such as low-level system programming and UI/UX design.
- Oversaw **technical setups** and **logistics** for all club events.

Student Member   *December 2019 - August 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

Major Licenses and Certifications

AWS	AWS Academy Graduate - AWS Academy Cloud Architecting
DeepLearning.AI	Convolutional Neural Networks
DeepLearning.AI	Natural Language Processing with Probabilistic Models
DeepLearning.AI	Sequences, Time Series and Prediction
Coursera Project Network	Neural Style Transfer with TensorFlow
Udemy	Practical Machine Learning by Example in Python