Anju Chhetri

Work Experience And Research

- **Research Assistant** *April 2024 - Present*
  Nepal Applied Mathematics and Informatics Institute for Research (NAAMII) Lalitpur, Nepal
  Advised by Dr. Binod Bhattarai
  - *Medical Out-Of-Distribution (OOD) Detection:* My current research focuses on effective OOD detection methods in volumetric medical data, specifically MRI and CT scans.
- **Undergraduate Research Intern** *August 2023 - March 2024*
  Nepal Applied Mathematics and Informatics Institute for Research (NAAMII) Lalitpur, Nepal
  Advised by Dr. Binod Bhattarai
  - *Sampling techniques in Active Learning:* I contributed to a project in the domain of active learning, with a particular emphasis on implementing and analyzing results for various sampling techniques on unbalanced datasets for a multi-class object detection task.

Education

- **Pulchowk Campus - Institute of Engineering, Tribhuvan University** *November 2019- April 2024*
  B.E in Electronics, Communication and Information
  - Artificial Intelligence, Probability and Statistics, Mathematics (Linear Algebra, Calculus, Optimization), Control Systems, Data Structures and Algorithms, Discrete Structures, Embedded Systems, Numerical Methods, Computer Graphics

Projects

- **Improving Adversarial Image Robustness For Preventing Image Manipulation** *October 2023 - April 2024*
  Academic Project *Link to Repo*
  - Tools & Technologies used: Python, PyTorch
  - Developed an effective JPEG-resistant image immunization pipeline to counter text-guided AI manipulation, specifically for diffusion models. Additionally, I studied the influence of text prompts on the success of image immunization against these text-guided diffusion models.
- **Real-Time Visual Element Generation Using GANs** *December 2022 – April 2023*
  Academic Project *Paper | Link to Repo*
  - Tools & Technologies used: Python, PyTorch, Unity, Barracuda
  - Developed a real-time neural rendering technique for generating realistic grass in video games. My task was to experiment with existing architectures, perform result analysis, and design new architectures that achieved both visual fidelity and low inference time.
- **Depth Estimation Using Stereo Vision** *April 2022 – June 2022*
  Personal Project
  - Tools & Technologies used: Python, OpenCV, PyTorch, MATLAB
  - 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.

Technical Skills

Language: Python, LaTex, C/C++, MATLAB
System: Linux, Windows
Software: Emacs, Git, Arduino IDE
Machine Learning Framework: PyTorch
Electronics: Arduino, Raspberry Pi Pico, PCB design, Soldering

Awards and Honors

Human Aligned AI School - Full Scholarship	July 2024
Hacking for Humanity 2023, Nepal's largest all female hackathon, 2nd Runner Up	Februrary 2023
GritFeat AI Health Hackathon - 1st Position	January 2023
Ace Ignite 2022 Hackathon, 1st Position	November 2022
ABU-Robocon 2022, 2nd Runner Up	August 2022
ABU-Robocon 2022, Nagase Award	August 2022
3rd Annual Nepal AI School - Full Scholarship	December 2021
Mahatma Gandhi Scholarship	2017-2018

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

Affiliations

- Event Manager *December 2021 - February 2023*
  IT Club, Puchowk Campus
  - Organized five events, each attended by approximately 50 students, covering topics from low-level system programming to UI/UX design.
  - Oversaw technical setups and logistics for the 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.
  - Mentored junior members for ABU-ROBOCON 2023.

References

- Binod Bhattarai, **Ph.D.**
  Lecturer,*University of Aberdeen, Aberdeen, UK*
  Email: binod.bhattarai@abdn.ac.uk

- Nanda Bikram Adhikari, **Ph.D.**
  Associate Professor, *Pulchowk Campus, Institute of Engineering, Tribhuvan University, Nepal*
  Email: adhikari@ioe.edu.np