Spandan Pyakurel

Rochester pyakurelspandan12@gmail.com spandan12

Research Interests

Novelty Detection, Uncertainty Quantification, Calibration

Education

Rochester Institute of Technology *August 2022 – Present*
Phd in Computing and Information Sciences

Pulchowk Campus, Tribhuvan University *Nov 2015 – Sept 2019*
Bachelors in Computer Engineering

Experience

Research Assistant *Rochester, NY*
Mining Lab https://www.rit.edu/mining/ *August 2022 – Present*

- Developed evidential framework to allocate fine-grained evidence for hierarchical novelty detection problem.
- Developed state-based framework to capture hierarchical dependencies for the hierarchical novelty detection problem.
- Developed Bayesian framework to re-calibrate the vision foundation models fine-tuned using parameter efficient methods.
- Developed metrics to quantify uncertainty in the hallucination of large language models.
- Developing R sandbox for a data science platform for students.

Software Engineer *Kathmandu, Nepal*
Leapfrog Technology *Sept 2019 – May 2022*

- Worked as a full-stack software engineer, and developed microservices for backend apis, frontend application and Extract-Transform-Load pipeline. Developed solutions in multiple languages involving python, go and javascript.

Publications

Hierarchical Novelty Detection via Fine-Grained Evidence Allocation **ICML 2024**
Spandan Pyakurel and Qi Yu
https://proceedings.mlr.press/v235/pyakurel24a.html

Be Confident in What You Know: Bayesian Parameter Efficient Fine-Tuning of Vision Foundation Models **Neurips 2024**
Deep Pandey*, ***Spandan Pyakurel**** and Qi Yu
https://neurips.cc/virtual/2024/poster/93801

Systematic Evaluation of Content Quality in LLMs through Fine-Grained Integration of Token-Level Uncertainty **Under Review**

Awards

NeurIPS 2024 Scholar Award 2024

Scholarship to attend CRA-WP 2024

Leapfrog Employee Reward 2022

Best Project Undergrad 2020

Academic Service

Reviewer on AAAI 2025

Skills

Machine Learning, Computer Vision, Novelty Detection, Hierarchical Novelty Detection, Uncertainty Quantification, Evidential Learning, Data Science, Parameter Efficient Fine Tuning, Large Language Models

Python, Numpy, SQL, Pandas, Pytorch, Scikit-learn, R, Matplotlib, Canva, JavaScript, React, Huggingface