# 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** *August 2022 – Present*
*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* *August 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