SAFAL THAPALIYA

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Work Experience

May 2022–present
Research Assistant, *NepAl Applied Mathematics and Informatics Institute for research (NAAMII)*, Lalitpur, Nepal.
Supervisor: Bishesh Khanal, Ph.D.
- Involved in research on computer vision applications in medical imaging.
- Developed a data collection platform to upload microscopic images from different regions of Nepal.
- Participated in MICCAI FLARE 2022 challenge and worked on image segmentation in CT images in a semi-supervised setting.
- Evaluated different vision language models across multiple datasets to assess their transferability from the open domain to the medical field.

May 2020–June 2021
Backend Developer, *Clamphook*, Nepal.
- Involved in developing an online examination platform aimed at students for IOE entrance preparation.
- Designed and implemented the system architecture of the online exam portal, and a user management system.

Education

2017–2022 : **Bachelor of Engineering, Computer Engineering**, *Institute of Engineering, Pulchowk Campus*, Pulchowk, Lalitpur, Nepal.
Academic Supervisor: Aman Shakya, Ph.D.
- An awardee of the full scholarship scheme ranked 24 out of nearly 18,000 examiners in the entrance examination.
- Top of the class in the sixth semester.
- Graduated in first division with an aggregate of 77.48%.

2015-2017 : **High School**, *Kathmandu Model Higher Secondary School*, Kathmandu, Nepal.
Majors: Mathematics, Physics, Chemistry

Publications

In Workshop Proceedings

2022 Rabin Adhikari, **Safal Thapaliya**, Nirajan Basnet, Samip Poudel, Aman Shakya, and Bishesh Khanal. Covid-19-related nepali tweets classification in a low resource setting. In *Proceedings of The Seventh Workshop on Social Media Mining for Health Applications, Workshop & Shared Task*, pages 209–215, 2022.

Pre-print

2023 Suprim Nakarmi, Sanam Pudasaini, **Safal Thapaliya**, Pratima Upretee, Retina Shrestha, Basant Giri, Bhanu Bhakta Neupane, and Bishesh Khanal. Deep-learning assisted detection and quantification of (oo) cysts of giardia and cryptosporidium on smartphone microscopy images. *arXiv preprint arXiv:2304.05339*, 2023.

Projects

AI Assisted Smartphone Microscopy.
- Working in collaboration with Kathmandu Institute of Applied Sciences (KIAS) to develop object detection models to detect diarrhea cysts from vegetables, stool, and water samples using images captured from a smartphone microscope.
- Developed an online data collection and annotation platform to upload sample images from different locations in Nepal.
- Currently creating a large annotated dataset of images containing parasites.

Public Discourse Analysis System.
- Developed COVID tweets analysis platform that allows health decision-makers to view a real-time analysis of narratives of tweets, particularly in Nepali and Devanagari scripts.
- This project was done as a part of my bachelor's thesis while interning at NAAMII.

Internships

Jan 2022–May 2022 **Support and Solutions Intern**, *Logpoint*, Nepal.
- Interned at Logpoint in the Customer Support and Solutions Department.
- Primary focus was on monitoring and maintaining a SIEM system and investigating and responding to threats.

Aug 2021–April 2022 **Research Intern**, *NepAl Applied Mathematics and Informatics Institute for research (NAAMII)*, Lalitpur, Nepal.
- Worked on my bachelor's thesis as part of the internship.
- Developed a dataset of covid-19-related tweet classification for the Nepali language in Devanagari script to analyze discourse on topics during the pandemic.
- Created a data collection and processing pipeline to automatically extract tweets.

Skills

Programming Languages Python, PyTorch, C, C++

Web Technologies JavaScript, FastAPI, Django, Flask

Database SQL, MySQL, MongoDB

Other Technologies Linux System Administration, Version Control using Git

Teaching Assistantship

December, 2021 : **Third Winter School in AI 2021 by NAAMII**.
- Involved in developing the lab materials for the Generative Adversarial Networks lab.

May, 2023 : **Fourth Annual Nepal AI School 2023 by NAAMII**.
- Involved in designing the lab materials for the Foundations on Machine Learning lab session.

References

Bishesh Khanal, Ph.D., *Director/Research Scientist*, NepAl Applied Mathematics and Informatics Institute for research (NAAMII).
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Aman Shakya, Ph.D., *Assistant Professor*, Institute of Engineering, Pulchowk Campus.
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