

# Rabin Adhikari

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## Work Experience

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### NepAI Applied Mathematics and Informatics Institute for research (NAAMII)

Apr 2022 — Present

Research Assistant

*Supervisor: Bishesh Khanal, Ph.D.*

- Actively contributing to research projects focused on **Natural Language Processing (NLP)**, **Medical Imaging**, **Semi-supervised Learning**, and **Multi-modal Learning**.
- Employed rigorous research methodologies to analyze data, draw meaningful conclusions, and contribute to the advancement of knowledge in these domains.

### LOCUS

Mar 2021 — May 2022

Software Coordinator

- Successfully managed software events, effectively overseeing all aspects of planning and execution while ensuring seamless coordination and timely resolution of various technical issues.
- Demonstrated strong organizational skills by successfully organizing approximately 10 software events, handling logistics, scheduling, and ensuring a smooth and engaging experience for participants.

### Clamphook

Nov 2019 — Jun 2021

Full Stack Developer

- Actively participated in the development of clamphook.com by implementing the server-side functionality utilizing *MongoDB* as the database and *Flask* as the web framework.
- Leveraged *React* as the front-end technology to facilitate seamless communication between the front-end and back-end components of the website.
- Successfully deployed servers using *nginx*, *gunicorn*, and *Cloudflare*, effectively managing the infrastructure to handle concurrent traffic of up to 5,000 users. This involved ensuring smooth and uninterrupted user experience even during peak traffic periods.

### IEEE Pulchowk Student Branch

Feb 2020 — Dec 2020

Event Chair

- Conducted a Tech Talk titled *A Platform for Innovations and Ideas* with the participation of CEOs from Yatri Motorcycles and International Green Developers Nepal as speakers, drawing an audience of approximately 500 participants.
- Organized a successful blood donation program in collaboration with the Nepal Red Cross Society, demonstrating effective coordination and execution skills.

### ASMI

May 2019 — Mar 2020

## Junior Researcher

Conducted comprehensive research on two-dimensional *In-Video Advertising*, focusing on enabling seamless advertisement integration within platform videos without disrupting the viewing experience.

## Education

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### Bachelor in Computer Engineering

Nov 2017 — Present

Central Campus, Institute of Engineering, Tribhuvan University, Nepal

Academic supervisor: Aman Shakya, Ph.D.

Thesis Title: *COVID-19-related Nepali Tweets Classification in a Low Resource Setting*

- Attained **Rank 1 in the Entrance Exam** of 2074 B.S. (2017 A.D.) out of nearly 18,000 candidates.
- Graduated with **First Division honors**, achieving an impressive aggregate of 79.96%.

### High School

Jun 2015 — Jun 2017

SOS Hermann Gmeiner School Bharatpur, Bharatpur, Nepal

- Graduated in the **top 5 of the class**, demonstrating exceptional academic performance.
- Attained a distinction with an impressive **85.3% aggregate**, reflecting a strong commitment to excellence throughout high school.
- Consistently maintained high grades and showcased diligence in academic pursuits.

## Internships

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### NepAI Applied Mathematics and Informatics Institute for research (NAAMII)

Aug 2021 — Apr 2022

Research Intern

Supervisor: Bishesh Khanal, Ph.D.

- Conducted research on *tweet classification* for my *bachelor's final year project thesis*.
- Developed a classification system to categorize tweets into *eight inclusive COVID-related categories*.
- Applied analytical techniques and data processing methods to achieve accurate classification results.

### Diyo.ai

Jun 2020 — Dec 2020

NLP Research Intern

Supervisor: Binod Bhattarai, Ph.D.

- Conducted extensive research on the availability of Nepali language corpora, resulting in the creation of a substantial corpus measuring nearly 3 GB in size.
- Leveraged the *Huggingface transformers* library to train an *ALBERT* language model specifically tailored for the Nepali language.

## Publications

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- **Adhikari, Rabin**, 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*, pp. 209-215. 2022.
- Buddhacharya, Sangam Man, **Rabin Adhikari**, Nischal Maharjan, and Sanjeeb Prasad Panday. "Monocular Depth Estimation using a Multi-grid Attention-based Model." *Journal of Innovative Image Processing* 4, no. 3 (2022): 127-

## Licenses & Certifications

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- **Generative Adversarial Networks (GANs) Specialization** by deeplearning.ai on Coursera
- **Natural Language Processing Specialization** by deeplearning.ai on Coursera
- **AI for Medicine Specialization** by deeplearning.ai on Coursera
- **DeepLearning.AI TensorFlow Developer Specialization** by deeplearning.ai on Coursera
- **TensorFlow: Data and Deployment Specialization** by deeplearning on Coursera
- **Applied Data Science with Python Specialization** by University of Michigan on Coursera
- **Mathematics for Machine Learning Specialization** by Imperial College London on Coursera
- **Machine Learning** by Stanford University on Coursera

## Projects

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### ReadIt

Implemented and trained the state-of-the-art *Retrospective Reader* on *SQUAD 2.0* which extracts the span of the text from provided context relevant to the given question

### COVAPLAD

Programmed a system using Django and MySQL where volunteers apply for various events and Plasma Donors donate their convalescent plasma to save others lives

### Kukurshetra

Coded a cross platform desktop app written in C++ which runs on both Linux and Windows where two users on the same LAN shoot bullets at each other from their machines

### 3D Modelling of ICTC

Simulated the ICTC building in the Pulchowk Campus in C++ using *OpenGL* and *GLSL*

## Technical Skills

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- Proficient in Python programming language, including machine learning and deep learning libraries such as *Numpy*, *Pandas*, *Scikit-Learn*, *TensorFlow*, and *PyTorch*.
- Skilled in client-side programming using *JavaScript* and *TypeScript*, along with frameworks like *React*.
- Experienced in server-side programming using *Node.js* frameworks like *Express*, as well as *Python* frameworks like *Django*, *Flask*, and *FastAPI*.
- Proficient in working with various *SQL* and *NoSQL* databases.
- Well-versed in *Linux* environment, possessing skills in tools like *Vim*, *Tmux*, and shell scripting, with experience across different Linux distributions.
- Knowledgeable in *version control systems*, specifically *Git*.
- Experienced in *Android* programming using *React Native*.
- Proficient in *Computer Graphics programming*, utilizing *OpenGL* in conjunction with libraries such as *SDL* and *SFML*.

## Affiliations

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- Member, IOE FOSS Community, 2017 to 2019
- Member, Mozilla Campus Club, Pulchowk Campus, 2017 to 2019

- LOCUS, Nepal, 2017 to 2022

## Spoken Languages

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- English: Full professional proficiency
- Hindi: Professional working proficiency
- Nepali: Native or bilingual proficiency

## References

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**Bishesh Khanal, Ph.D.**

Director/Research Scientist, NepAI Applied Mathematics and Informatics Institute for research (NAAMII)

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**Aman Shakya, Ph.D.**

Assistant Professor, Pulchowk Campus, Institute of Engineering, Tribhuvan University, Nepal

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