

# Abhinna Manandhar

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## Education

### University at Buffalo, State University of New York

August 2026

Master's of Science (MS) in Computer Science and Engineering

- **Coursework:** CSE 547 Intro to ML, CSE 531 Algorithm Analysis and Design, CSE 590 Computer Architecture

### Coventry University,

November 2023

Bachelor of Science with Honours (BSc. Hons) in Computing

- GPA: First-Class Honours
- **Thesis:** Blockchain Technology to Improve Security and Accessibility of Electronic Health Records

## Experience

### Research Assistant, Department of Earth Sciences – University at Buffalo

Apr 2025 – Present

- Successfully implemented Object-Detection using YOLOv8, and water-line detection in staff gauge images on citizen-science images using image segmentation techniques.
- Developed pipeline for extracting the numeric staff-gauge measurement of detected water-line using Google Gemini 2.5 Flash model and produced visualizations for model performance evaluation using Matplotlib.
- Integrated and deployed the AI pipeline on a Twilio web-hook endpoint to process crowd-sourced images.

### Mid-Software Engineer, Codavatar Tech Pvt. Ltd. – Kathmandu, Nepal

Aug 2024 – Jan 2025

- Designed and developed a new billing micro-service, facilitating transactions for over 10,000 users with minimal impact to the performance and stability of the existing system for Krispcall, a VoIP SaaS.

### Associate Software Engineer, Codavatar Tech Pvt. Ltd. – Kathmandu, Nepal

March 2023 – Aug 2024

- Developed and maintained REST, GraphQL and gRPC APIs using Python and Starlette backend framework.
- Integrated Twilio SDK to implement VoIP features like calls, SMS, and SMS forwarding, for Krispcall, a VoIP SaaS, handling over 50,000 minutes of daily call time with high reliability.
- Developed a support notification system by integrating Slack's third-party API to streamline the company's support process, reducing resolution time by 40%.

## Technologies

**Programming Languages:** Python, Javascript, C, C++, Java

**Frameworks & Tools:** Linux, Git, Django, FastAPI, Express, GraphQL, REST, gRPC, Tailwind, React

**Data Tools:** Pandas, Matplotlib, Scikit-Learn, TensorFlow, YOLOv8

## Projects

### Ultimate Python, Open-Source Contribution

<https://github.com>

- Created educational content on the concept of Encapsulation in Object Oriented Programming (OOP) in Python, contributing to project starred by over **5000 users** on GitHub.
- Collaborated with the project's maintainer, a Staff Software Engineer at LinkedIn, through iterative PR discussions – Gaining hands-on experience with CI workflows and professional code-review practices.

### Ride Sharing Web & Mobile Application

<https://youtube.com>

- Build a cross-platform ride sharing mobile application in Flutter (Android, IOS, and WearOS), along with a responsive web UI using React and Tailwind and NodeJS.
- Developed a REST API using Node JS for the project back-end with MongoDB database.
- Integrated Google Services (Place Auto-complete, Directions, Distance, and Maps) to improve Location UX and pricing accuracy.