



# Abhinna Manandhar

Buffalo, New York | abhinna@buffalo.edu | +1(716)247-9004

✉ abhinna@buffalo.edu |  abhinna- |  abhinna1

## Education

University at Buffalo, State University of New York

May 2026

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

- **Coursework:** CSE 547 Intro to ML, CSE 531 Algorithm Analysis and Design, CSE 521 Operating Systems

Coventry University,

November 2023

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

- Grade: 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

- Developed a computer-vision pipeline using YOLOv8, OpenCV, and Gemini 2.5 Flash LLM, increasing citizen-science contributions by 60% and reducing contributor churn by 20%.
- Orchestrated the server and database migration from UB's SENS server to the new CAsE Linux server.

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

Aug 2024 – Jan 2025

- Led the architecture and development of a new billing microservice, facilitating transactions for 10,000+ users with minimal impact to the performance and stability of the existing system for Krispcall, a VoIP SaaS.
- Developed a subscription management framework for Stripe Integration (using Subscriptions, Payment Intents, Proration, and Metered Billing for SMS and voice services) – enabling the support team to resolve billing tickets 2x faster and reducing billing ticket volume by 30%.
- Led a team of 8 junior engineers to deliver key features with close coordination with product and support teams.

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

March 2023 – Aug 2024

- Implemented call barging, call whispering, SMS, and SMS forwarding VoIP features using Twilio, handling 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%.

## Projects

UB Tycoon [MLH Best Use of Gemini API Prize Winner @ UB Hacking 2025]

<https://devpost.com>

- Developed a web application to gamify the semester syllabus into a monopoly game by integrating Google Gemini API for syllabus breakdown and an AI academic advisor chatbot, *winning the Best Use of Gemini API* prize in the Hackathon with 135 participating teams.
- Designed the MonoDB NoSQL database for storing the monopoly map and user progress in an array vector.
- Developed the backend REST API using NodeJS and web frontend using React and Tailwind; also used ThreeJS to implement a 3D model of UB mascot, Victor E. Bull.

Priority Scheduler for x86 Architecture

- Modified scheduling algorithm for x86 Pintos kernel to implement priority scheduling in C.
- Implemented priority donation mechanism to overcome priority inversion caused by synchronization primitives.

Ride Sharing Web & Mobile Application

<https://youtube.com>

- Developed 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.
- Integrated Google Maps Platform services (Place Auto-complete, Directions, Distance, and Maps) to improve Location UX and pricing accuracy.

## Skills

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**Programming Languages:** Python | Javascript | C | C++ | Java | Dart

**Systems:** Linux/Unix | Networking | Distributed Systems | Redis | Docker | Hadoop | MapReduce | Spark  
PostgreSQL | MySQL | MongoDB

**Frameworks:** FastAPI | GraphQL | REST | gRPC | Tailwind | React | Flutter | Git | Github Actions & CI/CD

**Data Tools:** Pandas | Matplotlib | Scikit-Learn | TensorFlow | YOLOv8 | Google Gemini

## Certifications

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**Data Analytics for Business with Tableau Training, Softwarica College of IT & E-Commerce** <https://schoolworkspro.com>

- Used Tableau for creating a variety of data visualizations and dashboards for Data Analytics, including Linkert Analysis, Cohort Analysis, KPI Analysis, Sales Analysis, and more.
- Tableau Public: <https://public.tableau.com/app/profile/abhinna2237/vizzes>

**Python (Basic) Certificate, HackerRank** <https://hackerrank.com>

- Solved coding problems in Python demonstrating proficiency in Python.

## Co-Curricular Activities

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**Ultimate Python, Open-Source Contribution (5000+ stars Github)** <https://github.com>

- Created educational content about Encapsulation in Object Oriented Programming (OOP) in Python.
- Collaborated with the project's maintainer, Samuel Huang, Staff Software Engineer at Tesla.

**Blockchain Fellowship Program, eSatya – Lalitpur, Nepal** May 2023 – July 2023

- Researched on the fundamental concepts and theories of blockchain technology.
- Developed smart-contracts using Solidity and implemented responsive client-side application to interact with the smart-contract with React and Tailwind CSS.

**Organizing Committee Member (Secretariat), Malpi MUN 2018** Aug 2018

- Successfully organized Model United Nations with over 100 participants.