

# Abhinna Manandhar

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## Education

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| <b>University at Buffalo, State University of New York</b><br>Master's of Science (MS) in Computer Science and Engineering | May 2026      |
| <b>Coursework:</b> CSE 547 Intro to ML, CSE 531 Algorithm Analysis and Design, CSE 521 Operating Systems                   |               |
| <b>Coventry University,</b><br>Bachelor of Science with Honours (BSc. Hons) in Computing                                   | November 2023 |
| <b>Grade:</b> First-Class Honours  |               |
| <b>Thesis:</b> Blockchain Technology to Improve Security and Accessibility of Electronic Health Records                    |               |

## Experience

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|--|-----------------------|
| <b>Research Assistant</b> , 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 CASet Linux server.  |                       |
| <b>Mid-Software Engineer</b> , 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.   |                       |
| <b>Associate Software Engineer</b> , 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

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|---|---|
| <b>UB Tycoon [MLH Best Use of Gemini API Prize Winner @ UB Hacking 2025]</b>  | <a href="https://devpost.com">https://devpost.com</a> |
| • 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, <i>winning the Best Use of Gemini API</i> 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.  |   |
| <b>Priority Scheduler for x86 Architecture</b>  |   |
| • 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.  |   |
| <b>Ride Sharing Web &amp; Mobile Application</b>  | <a href="https://youtube.com">https://youtube.com</a> |
| • Developed a cross-platform ride sharing mobile application in Flutter (Android, IOS, and WearOS), along with a response 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.