

Hemanta Bhandari (Hems)

Abu Dhabi | [linkedin.com/in/hems-bhandari](https://www.linkedin.com/in/hems-bhandari) | h [dot] bhandari [at] nyu [dot] edu

EDUCATION

New York University Abu Dhabi

Abu Dhabi, UAE

Bachelor of Science in Mathematics

Graduation Date: May 2028

- Relevant Coursework: Multivariable Calculus, Linear Algebra, Probability and Statistics, Data Structures, Algorithm Design, Foundations of Pure Mathematics.
- Extra-Curricular Activities: Vice President: Nepalese Student Organization; Event Coordinator: Mathematics Student Interest Group.

WORK EXPERIENCE

Mubadala Arabian Center for Climate and Environmental Sciences (MACCESS)

Abu Dhabi, UAE

Research Assistant

Sep. 2025 - Present

- Built custom IoT sensor boxes with Raspberry Pi 4, integrating temp, humidity, and PM2.5 sensors via I2C/UART, and configured Python MQTT clients for real-time data streaming.
- Expanded a Flask + Dash dashboard to aggregate and visualize multi-sensor data, implementing REST APIs, and MongoDB for near real-time interactivity.
- Utilized gsw, and NumPy for seawater property computation, data cleaning, and graph generation.

Haven Lab, NYU Abu Dhabi

Abu Dhabi, UAE

Research Assistant (Computer Engineering)

Mar. 2025 - Aug. 2025

- Implemented server-side tracking integrations for Google Analytics and TikTok, configuring accounts and APIs, and validating 30+ periodic data requests for accuracy.
- Developed backend scripts to automate logging and filtering of 10,000+ HTTP requests, improving analysis speed by ~30%.
- Conducted geographic tracking analysis using datasets from UAE, Germany, and India (90k+ records), identifying subtle but consistent differences in Google tracking parameters by region.

SMART Construction Research Group

Abu Dhabi, UAE

Machine Learning Intern

Oct. 2024 - Dec. 2024

- Researched and implemented LLM deployment pipeline on a local cloud server, reducing latency by ~35% and enabling 500 concurrent users with ~200ms average response time.
- Developed a full-stack web application (Django + React) integrating a custom fine-tuned BERT model trained on 50k+ text samples for domain-specific NLP tasks.
- Built secure authentication and role-based authorization with JWT, and containerized services using Docker to streamline deployment and scaling.
- Configured CI/CD pipelines to automate testing and deployment, reducing release cycle time from 2 days to <4 hours.

TECHNICAL PROJECTS

Sodhera (.com) | Next.js, TypeScript, Tailwind, Firebase, AWS OpenSearch, Gemini API

- Designed a legal search platform for Nepali lawyers, integrating AWS OpenSearch to index and query 360k+ scraped legal documents from official sources, achieving 60+ active users daily.
- Built a Next.js web application with Firebase authentication, tiered subscriptions, payment processing, and child-account management for law firms; deployed to Vercel with automated CI/CD.
- Implemented semantic search and chat-with-document functionality by integrating the Gemini API to process document context and generate conversational answers.

School Content Management System | Next.js, TypeScript, Tailwind, Supabase, PostgreSQL

- Engineered a full-stack Content Management System for a community school to digitize communications and operations for 300+ students and staff.
- Developed a secure admin dashboard with role-based authentication for managing school activities, official documents, and class statistics.
- Implemented a built-in mailing system to streamline internal communication between 12 administrators.
- Automated deployment via Vercel's CI/CD pipeline, ensuring seamless updates and high availability of the platform.

SKILLS & CERTIFICATIONS

Languages & Frameworks: Python, TypeScript, PostgreSQL, Django, React, Node.js

Tools & Platforms: AWS (OpenSearch, EC2), Firebase, Docker, Vercel, Git

Certifications: Supervised Machine Learning, Stanford University (Coursera), 2024; Introduction to Quantum Computing, The Coding School, 2022.

Achievements: Rank 5, National Mathematical Modeling Competition 2024, Nepal; Global Finalist (Top 40 Globally), NASA SpaceApps Challenge 2023.