

STABYA ACHARYA

M.Eng. in Data Science and Artificial Intelligence
Asian Institute of Technology, Thailand

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PROFESSIONAL EXPERIENCE

Bishwa Shiksha Sadan Secondary School

May 2020 - Jul 2022

Secondary Level Subject Teacher

- Planned lessons, tracked progress, and collaborated with parents to support student growth.

Techweb Nepal

May 2022 - Jun 2023

SQL Developer (E-Commerce Platform)

- Designed and optimized SQL databases for an e-commerce website, handling products, orders, and users.
- Wrote complex queries and improved database performance in collaboration with PHP backend developers.

Water Engineering and Management, AIT

May 2024 - May 2025

WordPress Website Development, Staff Assistant

- Improved Water Engineering website by customizing WordPress themes and enhancing design and functionality.

Climate Change and Sustainable Development, AIT

July 2025 - Oct 2025

WordPress Website Development, Staff Assistant

- Developing CCSD seminar website to keep track of past and upcoming seminar and speakers.

Global Water and Sanitation Center (GWSC), AIT

May 2025 - July 2025

Student Assistant

- Extraction of data for the Containment Improvement Project in Bangladesh.

Regional Integrated Multi-hazard Early Warning System

Aug 2025 - Oct 2025 (8 weeks)

Agricultural Data Modelling Intern

- Collected and processed NARC datasets and NetCDF-format climate datasets for statistical analysis and model development.
- Implemented Python-based workflows for data analysis, visualization, and model testing.
- Implemented and evaluated machine learning models for agriculture-focused early warning systems.

RESEARCH EXPERIENCE

Master's Thesis: Applied Machine Learning and Data Analytics

Title: Smart Fertilizer Prediction and Disease Detection in Precision Agriculture: A Proximal Policy Optimization-Vision Transformer Based Threshold Modeling Approach

- Designed and implemented a Reinforcement Learning (PPO) model for optimization using structured datasets, achieving test RMSE \approx 0.29-0.30 and NRMSE $<$ 11%.
- Conducted model benchmarking and evaluation, comparing PPO, Random Forest Regression (RFR), and Multiple Linear Regression (MLR) based on prediction accuracy, error metrics, and stability.
- Developed a Vision Transformer (ViT)-based image classification pipeline, achieving 94.65% accuracy on 500 test samples.
- Applied unsupervised learning (K-means clustering) for threshold analysis and pattern discovery across multivariate data.
- Performed data preprocessing, feature engineering, model validation, and performance evaluation using industry-standard metrics.

SKILLS

- **Language:** Python, PHP, Javascript
- **Machine Learning & AI:** Machine Learning, Reinforcement Learning, Natural Language Processing, Model Evaluation
- **Frameworks & Libraries:** TensorFlow, PyTorch, scikit-learn, NumPy, Pandas
- **Databases & Data Tools:** MySQL, MongoDB, Power BI
- **Cloud & Platforms:** AWS, WordPress
- **IoT & Embedded Systems:** Microcontrollers, Quadcopter and Hexa-copter Prototyping
- **Design Tools:** Canva

RECENT PROJECTS

- **AIT GPT :** GPT-based chatbot for AIT info, optimized for limited GPU, and deployed via Flask
- **Instruction Tuning :** Alpaca-based instruction-tuned model with consistent training loss.
- **Language Model :** Fine-tuned a sentiment analysis model on IMDb, improving classification accuracy
- **Language Translation :** A Nepali-English translation model with general attention.
- **Layer Initialization :** Explored Top-K, Bottom-K, Odd, and Even layer strategies for a 6-layer student model
- **Resume Parser :** Built an NLP tool using SpaCy for extracting structured resume data
- **Sentence Embedding with BERT :** Built a sentence similarity model and compared with pre-trained BERT model
- **Car/House Price Prediction :** Implemented price prediction model with cross-validation for robust performance evaluation
- **Flight Prediction App (Group Project) :** Developed a flight delay prediction model and a frontend application for users to input flight details like origin, destination, and date

EDUCATION

- **BSc (Hons) Software Engineering,** Naaya Aayam Multi-Disciplinary Institute (NAMI), *Jan 2018 - Sep 2021*
affiliated to The University of Northampton, UK.
- **Master of Engineering in Data Science and Artificial Intelligence,** Asian Institute of *Aug 2023 - Jan 2026*
Technology , Thailand
Recipient of 30-credit AIT scholarship award

REFERENCES

References available upon request.