Tu Linh Ha (James) Nguyen

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EDUCATION

B.S. in Computer Science, Virginia Tech (GPA: 4.0, Aug 2024 – expected: May 2028)

TECHNICAL SKILLS

Programming Languages/Tools: C++; Java; MATLAB; Python; HTML / PyTorch; TensorFlow; Git; Flask
Technical Skills: Data Analysis and Visualization; Machine Learning; Front-end and Back-end Development
Soft Skills: Leadership; Project Management; Problem Solving

WORK EXPERIENCE

Technical Intern (Nov 2022 – June 2024)
Kidscode STEM, Hanoi

- Served as a teaching assistant for robotics and programming classes.
- Contributed to the organization of province-level robotics competitions.
- Led robotics programming sessions as part of outreach activities, providing STEM education experiences to over 300 students and teachers in underserved regions of Northern Vietnam.

PERSONAL PROJECTS

Heart Disease Prediction (Dec 2024 – Jan 2025)

- Built and trained machine learning models that can predict the risk of heart disease.
- Conducted data analysis on 56000 patients' medical records on cardiovascular disease diagnosis.
- Developed machine learning models, including Logistic Regression, Decision Tree, Random Forest, and AdaBoost, from scratch using Numpy package, achieving an out-of-sample accuracy of 93%.
- Utilized the Early Stopping technique to prevent models from overfitting and performed hyperparameters tuning, increasing models' performance by 20%.

Medical Chatbot (Oct 2024 – Nov 2024)

- Developed a full-stack demo chatbot application tailored to the medical domain.
- Conducted data analysis on a dataset of 200,000 samples of users' prompts and doctors' responses using Word Cloud and Matplotlib.
- Utilized PyTorch framework with Decoder-only Transformer model and the standard word embedding techniques.

Hate Speech Detection (Nov 2024)

- Developed a machine learning model that detects offensive posts and comments on social media platforms.
- Conducted exploratory data analysis on a small dataset of 25,000 tweets and comments.
- Utilized the PyTorch framework with the Word2Vec technique and a Long Short-Term Memory (LSTM) model to build a neural network for detecting offensive posts and comments, achieving an out-of-sample accuracy of 87%.

ACTIVITIES

Undergraduate Research Lead, Department of Engineering, Blacksburg (Jan 2025 - Present)

- Lead a team of 3 members to develop an autonomous HVAC (Heating, Ventilation, and Air Conditioning) system that adjusts the user's desired indoor temperatures under the supervision of Dr. David Gray.
- Conduct literature review on machine learning applications in autonomous HVAC systems and write reports for the research.
- Build, train, and evaluate machine learning and deep learning models, including Multi-Perceptron, Random Forest, Gradient Boosting, and Long-Short Term Memory, utilizing PyTorch framework.

Undergraduate Researcher, Department of Civil and Environmental Engineering (Jan 2025 - Present)

- Conduct literature reviews on state-of-the-art AI/ML models, agents, and techniques and write reports for the research under the supervision of Dr. Md Sami Hansine.
- Utilize the Langchain Framework to build a RAG system, ReAct agent, and Activity-based model integrating cutting-edge GenAI models-including Deepseek-R1, Llama 3.1, and Mistral-to enhance information retrieval and contextual accuracy in transportation applications.
- Combine other machine learning techniques such as Fine-Tuning with the systems to maximize their performances.

Project Leader, AI Math Tutor (Oct 2024 – Nov 2024)

- Led a team of 6 members to develop an application utilizing machine learning models to personalize students' learning process.
- Developed a full-stack demo application for users to register, login, choose math topics for study, and take practice questions.
- Utilized PyTorch model to train a logistic regression model using data such as grades, exam time, and study time to predict students' areas needing improvement, achieving over 97% accuracy.
- Integrated OpenAI API and Google API for searching supplemental study materials.

CERTIFICATES

Supervised Machine Learning: Regression and Classification, 2024, DeepLearning.AI (Coursera)
Introduction to Java and Object-Oriented Programming, 2024, University of Pennsylvania (Coursera)