THU PHUONG NGUYEN

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EDUCATION

Ulsan National Institute of Science and Technology (UNIST) — **Ulsan, Korea**
Master's in Computer Science and Engineering — Sep 2024 – Present
- Cumulative GPA: 4.08/4.3

Ulsan National Institute of Science and Technology (UNIST) — **Ulsan, Korea**
Bachelor's in Computer Science and Engineering, Minor in Industrial Engineering — Sep 2020 – Aug 2024
- Cumulative GPA: 3.83/4.3 (Magna Cum Laude)
- UNIST Scholarship and Global Dream Scholarship that covers full tuition fee and meals for 4 years.
- Coursework: Database System, Software Engineering, Operating System, Computer Network, Artificial Intelligence, Natural Language Processing, Computer Vision, Deep Learning.

EXPERIENCE

Interactive Multimodal Machine Learning Lab, UNIST — **Ulsan, Korea**
Research Assistant, supervised by Professor Taehwan Kim — Sep 2024 – Present
- Improving VLMs ability on PDF layout recognition and Documents understanding.
- Developed VLM-based AI-automated grading systems for education. (EMNLP Main Conference 2025)

Vision and Learning Lab, UNIST — **Ulsan, Korea**
Research Intern, supervised by Professor Seungryul Baek — Mar 2024 – Jun 2024
- Improved the interpretability of the black-box Vision Language Model on estimating human pose.

Software Testing and Analysis Research Lab, UNIST — **Ulsan, Korea**
Research Intern, supervised by Professor Mijung Kim — Jan 2023 – Feb 2024
- Design Langchain System backend to deploy Large Language Model.
- Implemented state-of-the-art prompt engineering techniques improving LLM's performance by 63.8%.
- Implemented automated testing using mutation-based fuzzing, improving coverage by 2 times.
- Integrated LLM into a multilingual testing framework.

Sustainable Structural Systems and Materials Lab, UNIST — **Ulsan, Korea**
Research Intern, supervised by Professor Myoungsu Shin — Jun 2021 – Jul 2022
- Developed machine learning models to forecast seismic responses of planar steel frames.
- Achieve a high R^2 score of 96.1% using artificial neural network and extreme gradient boosting.
- Designed and implemented a graphical user interface for preliminary estimation from the model.

PROJECTS

Drag-guided 3D Motion Generation | Pytorch
- Applied ControlNet training with control signals from dynamically extracted joints.
- Leveraged a VLM to generate textual description from user drags drawn on the skeleton to control motion with simple drags, achieved SOTA performance by outperforming previous approaches by 20%.

Multi-agent Multi-Destination Packet Routing Using Deep Reinforcement Learning | Python
- Developed a fully distributed multi-agent DRL framework for multi-destination packet routing
- Significant improvements in E2E delay and congestion avoidance, particularly under high traffic loads.

Algorithmic Trading Bot | Python
- Designed and implemented a novel trading strategy using RSI and Bollinger Band technical indicators.
- Deployed the system into Interactive Brokers, yielding a 0.6% return on investment daily on average.

Stock Market Analysis | Machine Learning, Time Series Similarities
- Classified the stocks into categories that are sensitive to their respective markets.
- Compared the efficiency of DTW and Euclidian metrics in K-Means clustering.
- Regressed each cluster to observe the relationship between excess and factor returns.

Shopping Database | MySQL
- Designed and normalized database schema.
- Implemented checks and triggers to ensure data consistency.

Taxi Demand Prediction | PyTorch, Transformers, CNN
- Conducted EDA on New York Yellow Taxi Data with millions of data points.
- Optimized data processing time by 2 orders of magnitude.
- Implemented a spatial-temporal neural network based on Transformers and CNN.

HONORS AND AWARDS

Outstanding Student Awards of the Semesters in 2020, 2023 — 2023
Bronze Medal in the **2021 U-Challenge Festival** — 2021

SKILLS

Languages: English: professional working proficiency, Vietnamese: native,
Chinese: limited working proficiency, Korean: limited working proficiency.
Programming languages: C/C++, Python, Scala, Java, JavaScript, LaTeX
Frameworks & libraries: TensorFlow, Pytorch, Scikit-learn, Pandas, Hugging Face, Linux, Git