Nguyen Quoc Anh

 TheQuantScientist | in andrewfinance | ✉ nguyenquocanh@outlook.com.au | 📱 +84 585775676 | 🌐 Portfolio

SUMMARY

Dynamic and passion-driven senior Economics and Finance Undergraduate student. Experienced in Data Science with 2 years of academic research in applied Machine Learning. Collaborated with EU research institutions and global Ph.D. scientists. Leading AI/ML projects on predictive modeling. Assisted research in computer vision and differential mathematical modeling.

AREAS OF EXPERTISE

Deep Learning - Feature Engineering - Data Mining - Data Visualization - Data Analytics - Data Storytelling - Quantitative Analysis - Financial Reporting - Financial Modeling - Investment Research - Portfolio Risk Management - Project Management

PROFESSIONAL EXPERIENCE

Collaborative Researcher, *(RMIT University)*　　　　　　　　　　**Ho Chi Minh City, Vietnam** *03/2023 - present*

- Crawled and processed over **72,000** irregular healthcare time series data points from open source, improving data reliability by **53%**.
- Developed and fine-tuned **deep** Neural Network models on **S&P 500** stocks for forecasting, achieving **65%** swing-trading accuracy.
- Labeled time series for **binary** classification, designed **technical** indicators, trained **Image Models**, reducing error metrics by **75%**.
- Replicated **10+** research papers per week, identified **5** theoretical research gaps, managed **5** research groups across various time zones.

AI Systems and LLMs Trainer, *(Outlier AI)*　　　　　　　　　**Contract, Remote** *04/2024 - present*

- Trained **8** AI bots to be proficient in **Vietnamese**, engineered LLMs logic in consecutive **prompting**, surpassing **ChatGPT-4o** fluency.
- Applied **copywriting** on AI prompts to mirror native Vietnamese dialogues, semantic fine-tuned until reached **90%** response rationality.
- Monitored systems' dialogues for rhetorical error, flagged over **80** syntax bugs to Team Lead for review, enhancing overall **NLP** systems.

PROJECTS

Detecting Intraday Crypto Price Movements Using Hierarchical Vision Transformers *04/2024 - 07/2024*

- Fetched 2-year **hourly** crypto data, transformed **arbitrary** intervals into **images**, embedded static info as **metadata** for optimal training.
- Ensured label balance, engineered **MA** and **RSI** indicators, developed correlation **heatmaps** between OHLCV and **engineered** datasets.
- Reduced intercorrelation by **53%**, achieved **95%** accuracy, **91%** AUROC, and **90%** AUPRC with Swin Transformer over ViT and DeiT.

Phu Nhuan Jewelry Company Valuation Report for Q1/2024 Investment (Distinction) *03/2024 - 04/2024*

- Analysed PNJ financial state, benchmarking CAPM, DDM, P/E models. Recommended **BUY** strategy despite **OVERVALUED** signal.
- Interpreted **5-year** financial reports, identified **56%** post-2022 and **21.6%** YoY increase in 2024, surpassing peers and industry median.
- Detected PNJ's leverage for expansion, recommending target price of **VND105** thousand for risk-seeking investors to optimize profit.

Phase Space Reconstructed Neural ODE for Financial Time Series Forecasting *01/2023 - 03/2024*

- Programmed thus hyperparameter-tuning NODE for time series regression, optimized model with **3:1** embeddings and time delays ratio.
- Deployed **Takens's Theorem** to reconstruct **3D** phase space, capturing **65%** of cyclical and long-term dependencies across industries.
- Applied **TimeSeriesSplit** and **5-fold** validation, improved **MAE** and **RMSE** metrics by **70%**, outperforming LSTM, Transformer, SVR.

PUBLICATIONS

[1] **Anh Nguyen*** and Son Ha. "Transforming Stock Price Forecasting: Deep Learning Architectures and Strategic Feature Engineering". In: *MDAI 2024 Proceedings* (2024). **CORE B**. DOI: https://dx.doi.org/10.2139/ssrn.4729146.

[2] **Anh Nguyen***, Son Ha, and Hieu Thai. "Phase Space Reconstructed Neural Ordinary Differential Equations Model for Financial Forecasting". In: *PACIS 2024 Proceedings* (2024). **CORE A.** https://aisel.aisnet.org/pacis2024/.

EDUCATION

Royal Melbourne Institute of Technology　　　　　　　　　　　　　　　　　Ho Chi Minh City, Vietnam

Bachelor of Business, *Economics and Finance*　　　　　　　　　　　　　　　　　　　　　　*2021-2024*

Relevant Courses: *Corporate Finance, Derivatives and Risk Management, Company & Finance Law, International Finance*

TECHNICAL SKILLS

- **Data Science & AI:** TensorFlow, Keras, PyTorch, Numpy, Scikit-learn, XGBoost, (Vision) Transformers, Fastai, Cloud GPU

- **Data Analytics:** Power BI, Excel, R, MySQL, Python (Pandas, Matplotlib, Seaborn, Geoplotlib), PostgreSQL, MongoDB

- **Financial Analysis:** Auditing, Financial Reporting, Budget Forecasting, Cost Analysis, Tax Planning, Profit Optimization

- **Digital Tools:** Canva Pro, PowerPoint, LaTeX, Figma, ChatGPT 4, ClaudeAI, Gemini, Slack, Tableau, Google Analytics

VOLUNTEER

Academic Research Peer Reviewer, *(WoS Record)*   **Ho Chi Minh City, Vietnam** *01/2024 - present*

- Assessed **16** papers for Q1-Q2 journals of IEEE Access (2 published).
- Evaluated **9** papers for Computers & Electrical Engineering of Elsevier (Q1 Journal).
- Examined **4** papers for the International Conference on Pattern Recognition (ICPR 2024).
- Critiqued **4** papers for Humanities & Social Sciences Communications of Nature (Q1 Journal).

Supporter of Con Duong Xanh Charity Group, *Member*   **Dong Nai, Vietnam** *01/2024 - present*

- Constructed and repaired roads for Truc Lam Tri Duc Zen **Monastery**, hence ensuring safe access for visitors and religious **practitioners**.
- Planted trees and seeds around a **10-hectare** temple land, contributing to the **beautification** and ecological **sustainability** of the temple.
- Assisted monks in **cleaning** and **cooking** daily meals, supporting the monastery's operations to ensure a **harmonious** living environment.
- Promoted **green** campaigns, marketing future **charity** activities to connections. Maintained continuous and stable cash flow for groups.

Academic and Communication English Tutor, *Freelance*   **Ho Chi Minh City, Vietnam** *02/2021 - 11/2023*

- **1:1** tutored **7** students (**2** Onsite and **5** Online), taught basic communication English for DM&C's **Korean** CEO and a native **Japanese**.
- Focused on **IELTS** Academic training (Reading, Writing, and Speaking) thus designing **personalized** study plans for each participant.
- Consulted more than **200** undergraduate Bachelor students' work, earned **1** Bronze medal in the National English Test for the **Gifted**.
- Allocated **50%** of monthly freelance income to the local impoverished, contributing over **VND50** million to local medical aid programs.

HONORS & ACCOLADES

Conference Presenter | *Modeling Decisions for Artificial Intelligence*	Aug. 2024
Conference Presenter | *Pacific Asia Conference on Information Systems*	July. 2024
Invited Peer Reviewer | *Springer*, *IEEE*, *Elsevier*, *ICPR*, *Nature*	Jan. 2024
Finalist (CNN-BiLSTM-GRU) | *RMIT Impact*	Jan. 2024
Conference Presenter | *Digital3 International Conference*	Oct. 2023
Conference Presenter | *ICYREB 2023*	Sep. 2023
Project Love Meter Winner | *RMIT Showcase*	Nov. 2023
Certified Python for Machine Learning and SQL for Data Analytics | *NASBA*	Nov. 2023

LANGUAGES

- **Vietnamese** [Native]
- **English** [IELTS 7.0]