

Nguyen Quoc Anh — Data Scientist

 TheQuantScientist |  andrewfinance |  anhnguyen.aiml@gmail.com |  +84 39-998-5047 |  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 in quantitative finance. Seeking on-hand opportunities in data-driven industries.

EDUCATION

Royal Melbourne Institute of Technology

Bachelor of Business — Economics and Finance

Ho Chi Minh City, Vietnam

2021 — 2024

AREAS OF EXPERTISE

Data Analytics - Quantitative Analysis - Time Series - Deep Learning - Data Storytelling - Business Intelligence - Market Research - Consumer Insights - Financial Modeling - Investment Research - Project Management - Data Privacy - Cybersecurity

PROFESSIONAL EXPERIENCE

AI/ML Researcher, (*RMIT University*)

Ho Chi Minh City, Vietnam 03/2023 — present

- Processed over **85,000** observations from PhysioNet and YFinance **APIs**, deployed time-sensitive models for **irregular** data analysis.
- Developed and fine-tuned **deep** Neural Network models on **S&P 500** stocks for forecasting, achieving **75%** swing-trading accuracy.
- Labeled time series for **binary** classification, designed **technical** indicators, trained **Image Models**, reducing error metrics by **73%**.
- Led **5** research groups as **1st** author, peer reviewed **39+** journal papers in **AI** field, compiled cryptographic algorithms for **IoT** privacy.

AI Systems and Multilingual LLMs Trainer, (*Outlier*)

Remote, United State 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 rhetorical error, flagged over **65** syntax bugs to Team Lead to enhance **NLP** systems, scoring **81%** customer satisfaction rate.

RESEARCH PROJECTS

Synergistic Cryptosystem for Secure Omnidirectional IoT Communication in Healthcare

06/2024 — 08/2024

- Developed a **Blockchain**-enabled cryptosystem with **KYC** authentication, **RSA** encryption, and **IBE** key generation for **IoT** devices.
- SPIE achieved **99ms** key generation, **0.056ms** encryption, and **0.0755ms** decryption times, with key revocation and delegation scheme.
- Managed **writing**, **modeling**, and **visualization** for all cryptographic processes. **75%** **faster** en/de-ryption times than RSA and AES.

Intraday Crypto Price Movements Recognition Using Hierarchical Vision Transformers

04/2024 — 07/2024

- Fetches 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%**, reached **95%** accuracy, **91%** AUROC, and **90%** AUPRC with Swin Transformer over ViT and DeiT.

Phase Space Reconstructed Neural ODE for Financial Time Series Forecasting

01/2023 — 03/2024

- Programmed thus hyperparameter-tuning NODE for time series prediction, optimized model with **3:1** dimension and time delays ratio.
- Deployed **Takens's Theorem** to reconstruct **3D** phase space, capturing **75%** 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://doi.org/10.1007/978-3-031-68208-7_20.
- [2] **Anh Nguyen***, Son Ha, and Hieu Thai. "Phase Space Reconstructed Neural Ordinary Differential Equations Model for Stock Price Forecasting". In: *PACIS 2024 Proceedings* (2024). **CORE A**. <https://aisel.aisnet.org/pacis2024/ai-in-business>.

ACADEMIC PROJECTS

- Phu Nhuan Jewelry Company Valuation Report for Q1/2024 Investment***High 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.
- Wärtsilä Business Analysis and Case Study Report***High Distinction, 08/2023 — 09/2023*
 - Analyzed **20-year** FDI impact in Vietnam. Performed **PESTEL/SWOT** analysis benchmark country risk, giving **advisory** to Wärtsilä.
 - Studied **WACC** across countries, identified Japan as the optimal lender. Estimated target **return** that meets shareholders’ expectations.
 - Conducted 15Y **NPV** and **FX** risk analysis, mitigating Forex exposure. Optimized cash flow conversion, reducing project risk by **30%**.
- Individual Portfolio Risk Management and Trading Report***Distinction, 05/2023 — 06/2023*
 - Performed 5-year technical analysis of **S&P 500**, constructed a diversified portfolio using **CAPM**, setting a **5.98%** in expected return.
 - Calculated one-day **99% VaR** for portfolio risk, with a value of **1.825%**, representing a potential loss of **\$12,775** in adverse scenarios.
 - Executed futures and options **hedging** strategies, resulting in a **1.47%** net return adjustment. Profited **\$10K** from the **\$700K** investment.

TECHNICAL SKILLS

- Data Science & AI:** TensorFlow, Keras, PyTorch, Numpy, Scikit-learn, XGBoost, Hugging Face Transformers, Cloud GPU
- Data Analytics:** Power BI, Excel, R, MySQL, Python (Pandas, Matplotlib, Seaborn, Geoplotlib), PostgreSQL, MongoDB
- Financial Analysis:** Technical Analysis, Financial Reporting, Budget Forecasting, Cost Analysis and Profit Optimization
- Digital Tools:** Canva Pro, PowerPoint, LaTeX, Figma, ChatGPT 4, ClaudeAI, Gemini, Slack, Tableau, Google Analytics

HONORS & ACCOLADES

Breakthrough Lead Researcher in Finance RMIT News , BaoMoi , StockBiz , SmartF	Aug. 2024
Conference Presenter Pacific Asia Conference on Information Systems	July. 2024
Invited Peer Reviewer Springer , IEEE , Elsevier , ICPR , Nature	Jan. 2024
Nominated Project (CNN-BiLSTM-GRU) RMIT Impact	Jan. 2024
Conference Presenter Digital3 International Conference	Oct. 2023
Project Love Meter Winner RMIT Showcase	Nov. 2023
Certified Python for Machine Learning and SQL for Data Analytics NASBA	Nov. 2023

VOLUNTEER

- 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.
- Academic and Communication English Tutor, Freelance****Ho Chi Minh City, Vietnam 02/2021 — 11/2023**
 - 1:1** tutored **7** students (**2** Onsite - **5** Online), taught professional communication English for DM&C’s **Korean** CEO and native **Japanese**.
 - Designed personalized **IELTS** study plans, consulted **200+** students, earned **1** Bronze medal in the National English Test for the **Gifted**.

LANGUAGES

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