

Nguyen Quoc Anh — AI Engineer

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EDUCATION

Royal Melbourne Institute of Technology

Bachelor of Business — Economics and Finance

Ho Chi Minh City, Vietnam

2021 — 2025

INDUSTRY EXPERIENCE

Backend AI/ML Engineer, (*Hitachi Digital Services*)

10/2024 — present

– Project AI Tools: Small Language Models for Q&A RAG System

- Research on Japanese-focused models, benchmarked SLMs ($< 12B$) and LLMs on Japanese QnA datasets using cosine similarity.
- Conducted EDA reports on JaQuAD dataset and models' predicted output, designed auto-compiling pipeline for R&D documents.
- Programmed a RAG-based chatbot with parallel SLMs interactions for QnA services, applied RAGAS llm-as-a-judge evaluation.

– Project Virtual Planner: Multi-agent System for High-speed Rail Management

- Developed an agentic system for train management through information retrieval, violation detection, and penalty optimization.
- Built a Text-to-SQL agent using LangChain/LangGraph frameworks, managed ETL processes on PostgreSQL, designed FastAPI.
- Utilized RAG approach with FAISS index for relevance check and retrieval tasks, leveraging Llama3.3, Gwenn2.5, and GPT-4o-mini.
- Engineered CoT-based system prompts, defined rules for data ingestion, enabling train reschedule with availability warning on UI.

– Project Nestle HoloLens V2: Computer Vision in Maintaining Logistics Chain

- Trained and fine-tuned YOLOv8-11n models on HoloLens for real-time object detection with Maya-3D logistics guidance for workers.
- Wrapped trained models in ONNX format, deployed Sentis models onto HoloLens for ITW testing across augmentation parameters.
- Engineered balance multilabel dev-test sets on CVAT for 11+ manufacturing steps, achieved Accuracy of 0.8+ at minimal overfitting.

– Additional Responsibility

- Served as a technical advisor for internal Text-to-SQL projects and core member of HFMT's GenAI team, attending VDC's meetings.
- Applied LLMs for minor tasks (e.g., categorization, conversation, reasoning), reproduced repositories, managed Docker containers.
- Drew high-level system design, prepared Powerpoint slides for client' meetings, updated daily MeMo, supported seniors in WBS.

Research Associate, (*Tech Mahindra*)

09/2024 — 10/2024

- Conducted user study (n=1000) on smart devices from Apple, led participants through 50+ mobile protocols in dynamic environments.
- Engaged in CRM training and daily F2F customer services, recorded daily outcome onto the database, in charged of tech-heavy duty.
- Run selected studies under NDA agreement, trained newcomer user research staff, recruited local participants, exceeding KPI by 50%.
- Established secure research environment following vendor specifications, ensured bulletproof data privacy, welcomed foreign vendors.

Undergraduate AI/ML Researcher, (*RMIT Vietnam*)

03/2023 — 09/2024

- Developed SOTA deep Neural Network models on S&P 500 stocks for quant exchange, achieving 75% real-time swing-trading accuracy.
- Optimized models' metrics up to 85% by implementing Phase Space Reconstruction and Attention Mechanisms into their architectures.
- Managed ETL processes and 2M irregular observations from PhysioNet and YFinance using Python, increasing data credibility by 55%.
- Built cryptographic algorithms and Federated Environments for IoT cybersecurity experiments, peer-reviewed 43 PhD research papers.

RESEARCH PROJECTS

CLAM: A Hybrid Deep Learning Model for Weekly Stock Trend Forecasting

[Project Link & Paper](#)

- Developed a synthetic model with stacked layers of Conv1D, LSTM, and Attention Mechanisms for multi-step stock trend forecasting.
- Fine-tuned CLAM through 48 hyperparameters at 90:10 split, optimized training with EarlyStopping and ReduceLROnPlateau callbacks.
- Improved MAE and RMSE by 90%, capturing 75% of out-sample stock trends with flash crashes thus outperforming LSTM and CNN.

CryptMAGE: An Intraday Crypto Price Movements Recognition System

[Project Link & Paper](#)

- Converted hourly multivariate cryptocurrency time series into 12K arbitrary interval line-graph images for UP-DOWN binary classification.
- Engineered MA and RSI indicators into the OHLCV crypto data, reducing feature correlation by 53% to enable real-time categorization.
- Fine-tuned pre-trained Swin Transformer, achieved a 92% AUROC/AUPRC and 93.65% F1-Score, surpassing ViT, DeiT, and ResNet50.

PSR-NODE: A Neural ODE Model for Stock Price Forecasting

[Project Link & Paper](#)

- Programmed a neural differential-equation-based model incorporating Taken's Embedding Theorem for financial time series prediction.
- Reconstructed data phase space into 3D-dimension with a delay of 1 and TimeSeriesSplit with 5-fold cross-validation for efficient training.
- Boosted training speed by 63% and reduced errors metric by 70%, surpassing SVR, LSTM, and TFT, hence mitigating investments' risk.

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**. <https://doi.org/10.1007/978-3-031-68208-720>.

[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>.

[3] **Anh Nguyen*** and Hy Truong. "CLAM: A Synergistic Deep Learning Model for Multi-Step Stock Trend Forecasting". In: *Intelligenza Artificiale* (2025). **Q2**. <https://doi.org/10.1177/17248035251322877>.

HONORS & ACCOLADES

Guest Speaker of Bloomberg Vietnam Investment Summit , Bloomberg Businessweek Vietnam	December. 2024
Conference Presenter Vietnam Economist Annual Meeting	December. 2024
Top 3% Global SSRN Researcher Social Science Research Network	November. 2024
Breakthrough Lead Researcher in Deep Learning RMIT News , BaoMoi , StockBiz	Aug. 2024
Conference Presenter Pacific Asia Conference on Information Systems	July. 2024
Peer Reviewer of Q1 Journals ICPR , Elsevier , IEEE , Springer , Nature	Jan. 2024
Conference Presenter Digital3 International Conference	Oct. 2023
Certified Python for Machine Learning and SQL for Data Analytics NASBA	Nov. 2023

TECHNICAL SKILLS

Data Science *TensorFlow, Keras, PyTorch, Numpy, Scikit-learn, XGBoost, KNN, A/B testing, NLP, Semantic Search*

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

Digital Tools: *Canva Pro, PowerPoint, LaTeX, Figma, ChatGPT 4o, ClaudeAI, Gemini, Slack, Tableau, LangChain, Docker*

AI Models: *DeepSeek-R1-70B, Gwen2.5-72B, Llama3.3-70B, GPT-4o-mini, Gemma3-4B, Llama3.3, YOLOv8-11, OCR*

Languages: *English (IELTS 7.0), Vietnamese (Native), German (Beginner)*