NGUYEN THE PHONG

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EDUCATION

HANOI UNIVERSITY OF SCIENCE AND TECHNOLOGY   10/2021 – 7/2025
Major: Bachelor of Science in Applied Mathematics and Informatics.
- **Achievements:** Earned **5+ prestigious scholarships** (HUST, VPBank Future, VIASM, Mirae Asset, ICISE), **3+ national research awards**.
- **Bachelor Research Project:** Probabilistic Electric Load Forecasting via Adaptive Online Learning and Multi-objective Optimization: A NA-TP Forecasting Approach: Score **10/10**

HANOI UNIVERSITY OF SCIENCE AND TECHNOLOGY   9/2025 – Now
Major: Master of Science in Applied Mathematics and Informatics.

PUBLICATIONS

[1] Trang, H.T.T. & **Phong, N.T.** & Trang, N.T. & Han, L.G. (2024). "Text Mining and Visual Analytics in Exploring Trend Research of Fintech Development Index". *Proceedings of the 19th International Conference on Social Economic and Environmental Issues in Development (pp. 1323-1341).* Finance Publishing House. **ISBN: 978-604-79-4446-0**.

[2] Hanh, T.M. & **Phong, N.T**. & Chien, PM. & Huong, PM. & Bich, P.N.C (2024). "Impacts of financial distress on CEO Turnover of listed firms in Vietnam pre and post COVID-19". Paper presented at the *12th International Conference on Emerging challenges: Sustainable Strategies in the Data – Driven Economy* (*Invited shortlist for journal submission to the* **Journal of International Financial Management & Accounting (JIFMA)** *(Wiley, SSCI, Q1, ABS 3).*

[3] Hoa, N.T.X. & **Phong, N.T.** & Huong, B.T.Q. & Hang, T.H. & Hang, L.T.N. & Duong, N.D.T. "Factor Analysis of 3P Impacts on Sustainable Supply Chains: A Case Study in Vietnam's Bamboo and Rattan Industry"**.** *Industry and Trade Journal, Ministry of Industry and Trade.* **ISSN: 0866-7756.**

[3] Hoa, N.T.X. & Hang, T.H. & Hang, L.T.N & **Phong, N.T.** & Dung, N.T & Huong, B.T.Q. &. Sustainable Supply Chains and Cultural Integration in Vietnam's Bamboo Weaving Industry: A Bibliometric Approach. ". *Proceedings of the 21th International Conference on Social Economic and Environmental Issues in Development (pp. 441–456).* Finance Publishing House. **ISBN: 978-604-79-5010-2.**

[4] Anh, N.T.N. & **Phong, N.T** & Ha, N.T. Causal Inference-Driven Time-Series Forecasting for Inventory Optimization: A Time-Series Mixer Approach. *Computers & Industrial Engineering* **(Scopus-Q1, SCI)** (underreview)

[5] Anh, N.T.N. & **Phong, N.T.** Probabilistic Electric Load Forecasting via Adaptive Online Learning and Multi-objective Optimization: A NA-TP Forecasting Approach. *Applied Soft Computing.* **(Scopus-Q1, SCI)** (underreview)

[6] **Phong, N.T** & Hanh, N.V & Anh, N.T.N. FOCUS-TS: Online Learning for Seasonal–Trend Forecasting via Adaptive Fourier Order and Kernelized Trend. Computing (**Scopus-Q1, SCI**) (underreview)

EXPERIENCES

CENTER FOR DIGITAL TECHNOLOGY AND ECONOMIC AFFAIR   7/2023 - Now
Researcher Assistant
- **Reviewing and writing literature** on topics such as Machine Learning, Deep Learning, Time Series, and NLP, focusing on domains like Fintech, Financial, Electricity Load, Inventory, and Supply Chain, including detailed methodology and research frameworks, under the guidance of multiple PhD supervisors.
- Supporting the coordination of **research and data collection activities**, including NLP tasks (text classification, document ranking, topic modeling), demand forecasting, and multivariate time series analysis.
- Contributing to **model development and optimization** for improved performance in research projects.

ENTERPRISE DATA ANALYTICS DIVISION – VPBANK   2/2025 – 7/2025
Data Scientist
- Developed end-to-end ASR pipeline using **Virtual QC**, enhancing voice-to-text accuracy, thereby improving customer interaction insights and reducing manual verification effort.
- Implemented **real-time NLP-based profiling and summarization system** for more than **5000 borrowers**, supporting debt collection and business teams with actionable behavioral insights.
- Engineered and implemented domain-specific features to optimize **right-channel identification** in voice call routing tasks, enhancing model performance and downstream analytics by model **Linear Regression, LightGBM.**
- Designed and executed **A/B testing** to evaluate the impact of new campaigns, ensuring statistical validity and business relevance.

ACADEMY OF FINANCE – VPBANK   9/2025 – Now
Lecturer in Financial Mathematics, Department of Econometrics
- Conduct multi-level scientific research projects
- Design and compile lectures and specialized teaching materials in Financial Mathematics
- Undertake teaching duties in several specialized courses.

TECHNICAL SKILLS & ABILITIES

- **Programming Languages**: Python, C/C++, C#.
- **Database:** MySQL, SQL Server.
- **Big Data Tools**: Apache Spark, Hadoop
- **Libraries/frameworks:** Optuna, Pymoo, Spacy, NLTK, Scikit-learn, TensorFlow, PyTorch, Keras, BERTopic, BeautifulSoup, Streamlit
- **Others:** DataBricks, Git, Google Data Studio, Latex, Power BI, Microsoft Office, Docker.
- **Soft skills:** Problem-solving, Self-learning, Teamworking, Management

PERSONAL PROJECTS

Build and Analysis Retail Eagle National Bank and E-commerce   Oct 2023
Subject: Datawarehouse and BI

- Conducted Analysis Business Model Canvas, Data Exploration, Mindmap, Business flow, Data Flow.
- ETL, OLTP, OLAP, Data Warehouse architecture, Data pipeline, Forcasting and analyze active users using association rules.

Predict Gold Price using Machine Learning and Regression Feb 2024

Subject: Decision Support System
- Conducted EDA, Preprocessing (Kalman filter methods to fix null values), Visualization and Training of various model regression and machine learning to predict gold price with **81 features** and conducting feature selection, interpolation.
- Using Cross Validation, GridSearchCV to optimize hyperparameters. **MAPE 1.7%**

Feature Selection, Causal Inference Methods, Forecasting Demand and Inventory Management May 2024

Collaborative Projects between the Company and University Lab (BK Fintech)
- Research the new matter about feature selection (based statistics, information, simility) and causal inference to optimize the number of features before implementing forecasting demand by Vector AutoRegression, LSTM, FLANN (optimal MSE + Cobb-Douglas Function), TSMixer (optimization hyperparameters model).
- Crawling Vietnam's macroeconomic data from Vietstock, Urban dynamics (Density population, Civil Production).
- Metrics: RMSE, **MAPE 0.6%**
- Developed a smart-loop **inventory optimization framework** based on (r, q) policy, integrating demand forecasting and expected shortage cost, with probabilistic modeling and Grid Search for minimizing total inventory cost.

Analyzed the impact of financial distress on CEO turnover pre and post COVID-19 using Logit and DiD. July 2024
- Built panel data with 50+ engineered financial/governance indicators (e.g., FINANCIAL DISTRESS RATIO, ROA, MTB, LEVERAGE)
- Employed **Logistic Regression** to identify key predictors of CEO turnover and evaluate marginal effects.
- Integrated **Difference-in-Differences (DiD)** design to estimate the causal effect of COVID-19 by comparing CEO turnover rates before and after the pandemic shock.

Analyzing Factors Affecting Sustainable Supply Chain Index (OSI) Jan 2025

Leader of Group Student Research Conference
- Developed a composite Sustainability Index (OSI) based on the 3P framework; ensured scale reliability and validity using Cronbach's Alpha, Exploratory and Confirmatory Factor Analysis (**EFA, CFA**), and validated structural relationships through **PLS-SEM.**
- Applied **K-Means** to cluster enterprises, used **SHAP (SHapley Additive exPlanations) with XGBoost** and **Bayesian Networks** to identify key drivers of sustainability, and performed multi-criteria decision-making with **TOPSIS (Technique for Order Preference by Similarity to Ideal Solution)** to extract actionable insights for strategic planning.

HONORS & AWARDS

- **Scholarship** in Recognition of Excellent Academic Results for **consecutive semesters** (**Top 1 GPA** in major term 2022.1).
- **Scholarship Program National** Focus on Mathematics Development from the Institute of Advanced Mathematics, Vietnam.
- **Scholarship Future VPBanker** 2024.
- **Scholarship Mirae Asset Foundation** 2024 – 2025.
- **Full Fellowship** Award – Vietnam Summer School of Science 2025 (VSSS12) - ICISE Center, Quy Nhơn, Vietnam

Competitively selected as 1 of only 150 students nationwide for a prestigious science summer program organized by Rencontres du Vietnam and ICISE (International Centre for Interdisciplinary Science and Education). Awarded full sponsorship to attend 4 days of intensive academic exchange, scientific lectures, and mentoring under the theme "Embrace the Unknown".
- **Third prize** for 41st HUST Annual Student Research Conference 2024.
- **Second prize** for 42st HUST Annual Student Research Conference 2025.
- **Third prize** for **Olympic Quantitative Economics and Applications National** 2024
- **Consolation prize** for **26st Euréka National Annual Student Research** Conference 2024.
- **Top 30** in the "Mathematical Modeling Competition" organized by Ministry of Science and Technology, Ministry of Education and Training, VINIF, Institute of Applied Mathematics and Informatics.
- **Top 16** Technology Innovation and Entrepreneurship HUST Competition 2024.
- **Prize Student with 5 Good Criteria** level Hanoi University of Science and Technology and level city 2022 - 2023, 2023 – 2024.
- **Earned 20+** certificates merit for active engagement in diverse extracurricular activities.
- **Represented the university** as a speaker at various recruitment programs and research competitions, and competed in several **national-level research contests** on behalf of the university.

EXTRACURRICULAR

Club of Finance and Technology - BK FINTECH HUST 10/2023 – 10/2024

(Sponsored by Center for Digital Technology and Economic Affairs- HUST and affiliated with HUB NETWORK, which is a nationwide network of Entrepreneurship Clubs)

Member of expert group
- Supported the club's domain knowledge activities.
- Teaching and training professional experience within the club.

Youth Union of the Institute of Applied Mathematics and Informatics 10/2022 – 1/2025

Member of the University's Standing Committee of Applied Mathematics and Informatics
- Assisted in preparing client meetings and workshop materials.
- Conducted data collection and evaluation for the Communist Youth Union of the Class.
- Established and maintained an efficient information and reporting system to evaluate and improve the inspection process.