Luong Dac Nguyen

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EDUCATION

University Of Information Technology - Vietnam National University – Ho Chi Minh City **Aug 2023 - present**

Second-Year Student In The Data Science Bachelor's Program

- **Cumulative GPA (2023-2024)**: 9.16
- **Scholarship for Semester 1 (2023-2024)**
- **Language certification**: IELTS 6.0 (4/ 2023)
- **Certification**: Introduction to Statistics (Stanford Online On Coursera), Supervised Machine Learning Regression And Classification (Stanford), Go From SQL Beginner To Expert (Udemy), SQL Advanced Certificate (HackerRank), 100 Days of Code: The Complete Python Pro Bootcamp (Udemy - In Progress), Google Analytics (Google - In Progress)

OBJECTIVES

• Passionate about expanding knowledge in Generative AI (GenAI), with a particular focus on Natural Language Processing (NLP). Key interests include large language models, prompt engineering, and fine-tuning methodologies.
• Dedicated to applying advanced NLP techniques in real-world applications, contributing to the development of AI-driven language understanding and generation systems.
• Eager to conduct research and publish findings in leading NLP conferences such as ACL (Association for Computational Linguistics) to stay updated with the latest innovations.

TECHNICAL SKILLS

- Programming and Tools: C++, Python, Langchain, Fast Api, SQL, Chat GPT.
- Technical Skills: Data analysis, Building Rag System, Web Scraping, Probabilities and Statistics, Advanced hypothesis testing, Understand machine learing model,
- Foreign Language Skills: English
- Team Work Skill: Acknowledged in Various Subjects and Competitions, Contributing to Successful Team Projects

EXPERIENCE

Information Systems Department General Studies Academic Club - UIT **Aug 2023 - Present**

- Specializes in learning and organizing knowledge-sharing and review sessions both in-person and online.
  - **Leader of the Linear Algebra Group** Sep 2023 - Sep 2024
  - **Leader of the Probability and Statistics Group** Feb 2024 - Feb 2025
  - **Leader of the Database Systems Course Group** Sep 2024 - Sep 2025
  - **Academic Leader** (Overseeing and coordinating work for the entire learning department) Oct 2024 - Present

Artificial Intelligence for Interdisciplinarity Club - UEL **Oct 2024 - Present**

Learn on the application of artificial intelligence across various fields, particularly in economics.

Host of talk show AI For All: **Dec 2024 - Mar 2025**
Served as the primary host for 4/7 technology talk shows at the club, with my debut episode airing in March. Directly facilitated and guided discussions with prominent industry speakers. Developed specialized content and directed conversations on advanced AI topics including RAG in e-commerce, AI applications in education, business management, and financial market analysis.

POSITIONS HELD **Aug 2023 - Present**

Class Monitor of Data Science, Class of 2023 (University of Information Technology).

ACHIEVEMENT

3rd Prize in Math Model Challenge Ha Noi 2024 **Aug 2024**
My role:
- Data Collection, Analysis, Model Deployment and Upgrading

Top 90 Nationally - HomeMart Data Challenge 2024 **Sep 2024**
National Student Data Science Competition:
- One of Vietnam's largest retail analytics competitions for university students.
- Competed against hundreds of students nationwide to analyze customer behavior and optimize business decisions.

1st Prize in ISE SPARK OF IDEA FALL 2024 UIT **Oct 2024**
My role:
- Develop a biomedical application idea for deepfake recognition by utilizing Photoplethysmography (PPG) volumetric optical signals to extract the subject's heart rate.

PROJECTS

Math Model Challenge Ha Noi 2024 Phase 1 **Aug 2024**

Developed suitable and balanced shift schedules for healthcare staff, meeting hard constraints like specific requirements for staff type and numbers, while also addressing soft constraints such as departmental diversity and fairness in individual work schedules.

My role

- **Data Collection, Cleaning, and Visualization:** Applied advanced statistical techniques to collect, clean, and visualize data for in-depth analysis.
- **Model Development and Optimization**: Developed an original model using a random browsing loop method, then improved the model by implementing **a simulated annealing algorithm**, achieving a 62.3% increase in effectiveness as measured by the loss function compared to the original method.

Math Model Challenge Ha Noi 2024 Phase 2 **Aug 2024**

Developing a model that represents the interaction between insulin and glucose, ensuring stability and reflecting the body's homeostasis. The model should control glucose primarily through insulin and be personalized for at least one patient based on meal data and blood glucose levels.

My role

- **Data Collection, Cleaning, and Visualization:** Researching factors related to glucose concentration and the two types of diabetes.
- **Modeling Glucose Concentration:** Used ordinary differential equations (ODEs) to predict glucose concentration dependence on related hormones, improving model accuracy by including glucagon.
- **Enhanced Model with Sigmoid Function:** Developed a second model using a sigmoid function to represent glucose from food, showing a better fit with real data compared to the original model.

HomeMart Data Challenge - Data Science Talent Competition FTU 2024 **Sep 2024**

Analyzing customer shopping behavior to optimize retail business strategies. The challenge was to infer actual purchases based on customer interactions, as direct transaction data was not recorded.

My responsibilities

- **Data Cleaning and Preprocessing:** Standardized and filled missing values in the dataset to ensure accurate analysis.
- **Behavior Analysis:** Developed a rule-based approach to determine whether a customer actually purchased a product.
- **Retail Insights and Visualization:** Identified top-selling products, most engaged store sections, and popular customer movement patterns.
- **Computation and Modeling:** Used Python and Excel to analyze consumer trends and optimize stocking and marketing strategies.

Black-Scholes Model In Options Pricing Finance **Oct 2024 - Dec 2024**

Essay in Advanced Probability and Statistics Course: Explain the mathematical basis of the Black-Scholes model using Brownian motion, stochastic differential equations, Ito's lemma, and economic knowledge of options and derivatives markets

My role

- Responsible for Part II of the report: Stochastic Differential Equations SDEs

Nông Trí AI - Smart Agriculture Chatbot **Jan 2025 - Feb 2025**

Developing an intelligent chatbot utilizing Retrieval-Augmented Generation (RAG) technology to support farmers, especially with knowledge about coffee plants. The system integrates advanced Vietnamese embeddings and an optimized, multi-branch parallel RAG pipeline

My responsibilities

- **System Design:** Developed a FastAPI-based chatbot with ChromaDB for efficient document retrieval.
- **Vietnamese Embedding:** Optimized text representation using the `dangvantuan/vietnamese-embedding` model.
- **RAG Pipeline:** Built a dynamic RAG framework for question reformulation and contextual retrieval.
- **Query Routing:** Designed a prompt to classify general chat and document retrieval.
- **Deployment and Demo:** Deployed the chatbot and product introduction on web platforms:
  - Product Introduction: nongtri.netlify.app
  - Chatbot Demo: nongtrichat.netlify.app

EXTRA-CURRICULAR ACTIVITIES / LEADERSHIP ROLES

- Actively engage in extracurricular activities, enhancing leadership, communication, and analytical skills.
- Member of the UIT Leader Club and UIT Debate and Rhetoric Club, organizing events and sharpening public speaking abilities. Achieve award of student with 5 metrics 2024 at university level.
- Achieved notable results: 1st Prize in the Law Knowledge Competition 2024, 3rd Prize in the Ambassador of Reading Culture Competition 2024, and Top 5 in the Student Leader Competition 2024.
- Contribute to community projects as an iVolunteer Media Ambassador with AIESEC.