Vu Quoc Hien

ML/AI Engineer

hienvq23@gmail.com Neih4207 neihvq23 Google Scholar

Technical Skills

AI Domains: Machine Learning, Deep Learning, Natural Language Processing, Computer Vision, Reinforcement Learning, Recommendation System, Heuristic Optimization.
ML/DL Frameworks & Libraries: PyTorch, TensorFlow, OpenCV, Pandas, scikit-learn, SciPy
LLM Frameworks: Langchain, LlamaIndex, Haystack
Programming Languages: Python, R, C/C++
Databases: MySQL, PostgreSQL, Mongo, Neo4j, Pinecone, AzureSearch, Chroma, Qdrant
Cloud Platforms: Azure, AWS, Heroku
Operating Systems: GNU/Linux

Work Experience

Machine Learning Engineer – Trusting Social

May. 2025 – Present | HCM, Vietnam

AI/LLM Engineer – FPT Software AI Center

Sep. 2024 – May. 2025 | Hanoi, Vietnam

Microsoft SharePoint RAG: Developed an Agentic RAG solution for question answering and document retrieval on Microsoft SharePoint using Azure Cloud Services, achieving a document hit rate exceeding 85% across over 100 SharePoint files and folders.

Document Q&A: Led the design and development of a robust data pipeline & RAG pipeline for analyzing complex PDF documents, resulting in a 40% reduction in data processing time through dynamic querying and insightful data extraction, and 92% overall accuracy on Q&A benchmark dataset, as evaluated by the RAGAS evaluation tool.

GenAI Chatbot: Developed an AI-powered chatbot utilizing advanced RAG techniques to enhance Automated Bug Categorization Solution, improving model accuracy and operational efficiency by 30%.

Bioinformatic AI Scientist – Genestory JSC

Apr. 2022 – Sep. 2024 | Hanoi, Vietnam

SCARs – Drug Response Prediction: Spearheaded a project on Severe Cutaneous Adverse Reactions (SCARs) to reduce patient risk by screening for harmful genetic variants linked to Allopurinol and Carbamazepine prescriptions. Leveraged statistical methods and machine learning to achieve prediction accuracies of 99.7% and 85.7%, respectively.

Genetic-Risk Prediction: Engineered predictive models (e.g., polygenic risk scores) using advanced statistical methods to assess genetic predisposition to complex diseases and nutrigenomic profiles. Implemented automated analysis workflows, resulting in a significant acceleration (>30x) of results generation compared to previous methods.

Drug-Gene Interaction Database: Built a graph-based platform using Neo4j to model gene-drug interactions, enhancing the Pharmacogenomics (PGx) Database. Improved analysis speed by fourfold while boosting scalability.

AI Engineer – Vingroup Big Data Institute

Jul. 2021 – Mar. 2022 | Hanoi, Vietnam

Human Leukocyte Antigen (HLA) Imputation: Developed a neural network model incorporating fusion logic for HLA imputation in Vietnamese patient cohorts, achieving high accuracy (88–99%) and delivering significant clinical value.

Variant Annotation – EML: Architected a 6 TB PostgreSQL database housing over 9 billion genetic variants and applied ensemble machine learning for comprehensive variant analysis.

AI Researcher – Modelling, Simulation, and Optimization Laboratory

Nov. 2019 – Apr. 2023 | HUST

- Research domains: Multi-objective Optimization, Machine Learning, and Deep Reinforcement Learning.
- Main Projects:
  - Electric Vehicle Routing Problem: GitHub
  - Task Scheduling in Fog-Cloud Environments with Blockchain Integration: GitHub
- Side Projects:
  - Developed Monte Carlo Tree Search (MCTS) and deep reinforcement learning (DRL) methods for competitive board game agents: GitHub
  - Implemented a suite of DQN algorithms for the multi-agent, multiplayer Castle Invasion game: GitHub
  - Applied neuroevolution to build a high-performing Flappy Bird AI: GitHub

Education

Hanoi University of Science and Technology (HUST)
Aug. 2018 – Mar. 2023
B.S. in Computer Engineering, specializing in Data Science, Bioinformatic and AI.
Research at the Modeling, Simulation, and Optimization Laboratory, supervised by Associate Professor Huynh Thi Thanh Binh.

Selected Honors & Awards

International
- Third Prize, 2020 ICPC Asia Can Tho Regional Contest — Can Tho, Vietnam
- Third Prize, Electric Vehicle Routing Problem Competition, 2020 IEEE World Congress on Computational Intelligence (WCCI 2020) – the world's largest technical event on computational intelligence. — Glasgow, UK

Domestic
- Third Prize, Procon (Kyogi) 2021 – National Programming Contest, organized by Vietnam Association for Information Processing
- Second Prize, Procon (Kyogi) 2020 – National Programming Contest — Can Tho, Vietnam
- Second Prize, National Olympiad in Informatics 2019 (Ranked 5th out of 130+) — Da Nang, Vietnam

Selected Publications

International Journal
- 2024: Binh Minh Nguyen, Thieu Nguyen, Quoc-Hien Vu, Huy Hung Tran, Hoang Hai Tran, Binh Huynh Thi Thanh, Van-Dang Tran. Dholes Hunting – A Multi-Local Search Algorithm Using Gradient Approximation and Its Application to the Blockchain Consensus Problem. *IEEE Access* (Q1).
- 2023: Quoc-Hien Vu, Cong Dao Tran, Thi Thanh Binh Huynh. A Greedy Search Based Evolutionary Algorithm for the Electric Vehicle Routing Problem. *Applied Intelligence* (Q1).
- 2023: Van Dinh Nguyen, Thi Mai Vu, Quynh Anh Nguyen, Thi Hai Yen Pham, Thi Thu Thuy Can, Thi Minh Huong Le, Thanh Nguyen Nguyen, Hoang Mai Tran, Quoc Hien Vu, Thi Ly Le, Mai Nguyen Anh Vu, Timothy Craig, Sheryl Van Nunen, Thi Quynh Nga Do, Van Khiem Nguyen, Nhu Nguyet Nguyen, Thi Hang Vu, Sy Nam Vo, Chi Hieu Chu. Machine learning for prediction model of Severe Cutaneous Adverse Drug reactions in Vietnamese. *Internal Medicine Journal* (Q2).
- 2023: Binh Minh Nguyen, Thieu Nguyen, Quoc-Hien Vu, Huy Hung Tran, Hiep Vo, Do Bao Son, Huynh Thi Thanh Binh, Shui Yu, Zongda Wu. A Novel Nature-Inspired Algorithm for Optimal Task Scheduling in Fog-Cloud Blockchain Systems. *IEEE Internet of Things Journal* (Q1).

International Conference
- 2021: Thieu Nguyen, Thang Nguyen, Quoc-Hien Vu, Thi Thanh Binh Huynh, Binh Minh Nguyen. Multi-Objective Sparrow Search Optimization for Task Scheduling in Fog-Cloud-Blockchain Systems. *IEEE SCC 2021*.