

PHAM DINH HIEU

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OBJECTIVE

Data Science undergraduate at VinUniversity pursuing research in AI for robotics, with a focus on learning-based systems and real-world deployment. Experienced in machine learning, reinforcement learning, and multimodal modeling, with hands-on work in vision-language-action systems, agentic AI, and control applications. Contributed to research across medical AI and intelligent decision-making systems, resulting in two publications. Interested in advancing scalable and efficient approaches to learning-based robotic systems.

EDUCATION

- **VinUniversity** September 2024 - Present
Bachelor of Science in Data Science
 - Major GPA: 3.86/4.00
 - Co-President of VinTelligence - VinUni AI and Data Science club
 - Dean's List Award for the Academic Year AY 24-25

EXPERIENCE

- **Research Intern - Knovel Engineering** February 2026 – Present
Technology Consultancy and Solutions Company, Singapore
 - Contributed to research on medical audio intent detection by developing datasets and conducting experiments that leverage large language models for enhanced reasoning and classification accuracy.
 - Collaborated with multidisciplinary research teams to investigate multimodal learning approaches, including vision-language-action modeling in medical and surgical contexts.
 - Applied advanced medical image segmentation techniques (e.g., MedSAM2) to curate and annotate datasets for downstream research in vision-language-action planning.
- **Undergraduate Research Assistant - VinUniversity** November 2025 – Present
Collaborating with faculty at VinUniversity
 - Conduct research on agentic medical meal recommendation systems, integrating clinical and nutritional constraints.
 - Designed and implemented an agent-based pipeline using LangGraph to support structured reasoning and decision-making.
 - Developed rule-based evaluation frameworks for meal recommendation datasets, incorporating domain knowledge from healthcare and medical nutrition.
- **Undergraduate Research Assistant - V-IndoorCare** February 2025 – March 2026
A lab in the Center of Environmental Intelligence, VinUniversity
 - Conducted systematic literature reviews of state-of-the-art Reinforcement Learning (RL) algorithms, with particular emphasis on Physics-Informed Reinforcement Learning methodologies.
 - Evaluated and benchmarked state-of-the-art RL algorithms for HVAC control applications, focusing on control performance, stability, and energy efficiency.
- **Research Assistant - NLP @VinUniversity** March 2025 - October 2025
An NLP laboratory at VinUniversity
 - Worked on NLP tasks including text summarization, automatic essay scoring, and text classification.
 - Built and maintained datasets through large-scale data crawling, preprocessing, and analysis.
 - Applied LLM techniques such as few-shot prompting, supervised fine-tuning, and parameter-efficient tuning (LoRA) to improve task performance.
 - Conducted evaluations to assess accuracy, factuality, and robustness across models and tasks.

PUBLICATIONS

- **VietJobs: A Vietnamese Job Advertisement Dataset** LREC 2026
Hieu Pham Dinh, Hung Nguyen Huy, Mo El-Haj [arXiv](#) | [GitHub](#)
- **Structured Prompting for Arabic Essay Proficiency: A Trait-Centric Evaluation Approach** LREC 2026
Salim Al Mandhari, Hieu Pham Dinh, Mo El-Haj, Paul Rayson [arXiv](#) | [GitHub](#)

AWARDS & ACHIEVEMENTS

- **Consolidation Prize at the Regional Round of the AI Olympiad for Undergraduate Students** November 2025
The biggest AI competition for Undergraduate Students hosted by Vietnam Association for Information Processing
 - Developed ML solutions under strict 6-hour constraints, including a Video Motion Recognition and an NLP Word Translation model.
 - Implemented data preprocessing, model selection, and rapid hyperparameter tuning strategies.
 - Secured Top 2 national performance in the Word Translation (NLP) task.
- **Top 10 at DataFlow competition** February 2025
An annually competition hosted by Hanoi University of Science
 - Performed in-depth Exploratory Data Analysis (EDA) to identify seasonality, trends, and anomalies in historical business data.
 - Built forecasting models (SARIMA, LSTM, Transformer, Prophet) to predict 2-year business performance; addressed the challenge of irregular time intervals and missing values through resampling and interpolation.
 - Github: [Link](#)
- **Silver Medal in Vietnam National Round of International Olympiad in Artificial Intelligence (IOAI)**  July 2024
A brand-new AI competition for high school students
 - Achieved national-level recognition by solving three applied AI problems under tight time constraints, demonstrating versatility across computer vision, tabular prediction, and NLP:
 - * Pill Image Classification: Applied YOLOv8 with advanced data augmentation techniques to detect and classify pill types with 90% accuracy.
 - * PM2.5 Dust Index Forecasting: Trained an XGBoost model and scored 15.56 MDAPE, placing among top-performing teams.
 - * Biomedical Text Summarization: Developed a keyword-guided summarizer using TF-IDF; achieved ROUGE and BERTScore of 0.287, focusing on factual relevance.

PROJECTS

- **FinLove: Intelligent Portfolio Construction & Analysis Platform**  October 2025 – December 2025
Tools: FastAPI, Next.js, Python, CVXPY, TensorFlow, LLM (RAG)
 - Built a full-stack portfolio management platform integrating quantitative finance models and machine learning, enabling investment planning, risk analysis, backtesting, and forecasting through an interactive web interface.
 - Implemented advanced portfolio optimization (Markowitz, Black-Litterman, CVaR) and risk models (Ledoit-Wolf, GLASSO, GARCH, DCC), improving robustness of asset allocation under varying market conditions.
 - Designed an ensemble forecasting pipeline combining ARIMA, Prophet, LSTM, and statistical models, automatically selecting top-performing models to generate forward-looking portfolio return predictions with uncertainty estimates.
 - Integrated an LLM-powered RAG system to deliver context-aware explanations of portfolio performance and risk metrics, enhancing interpretability and user decision-making.

REFERENCES

1. **Dr. Mo El-Haj**
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2. **Dr. Le Duy Dung**
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