

Anh Duy Nguyen

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EDUCATION

- Hanoi University of Science and Technology** Hanoi, Vietnam
Engineer - Information and Communication Technology (ICT) Sep 2018 - Sep 2022
CPA: 3.77/4.00; Graduated 1 year earlier
Top 3.3% excellent students of the School of Information and Communication Technology
Graduation thesis: KGPNet - A Knowledge Graph-assisted Framework for Pill Detection - Grade: 4.00/4.00
Best Presentation Award - 2022 Thesis Defense

WORKING EXPERIENCE AND PROJECTS

- Vinuni-Illinois Smart Health Center** On-site
Research Assistant - VAIPE project (Full-time) January 2021 - Present
 - AI-based Pill Reminder Application:**
Tasks: Managing the Database; developing a mobile application for reminding people taking pills.
Technical skills: Firebase, MongoDB, Flutter
 - Knowledge Graph-assisted Pill Detection:**
Tasks: Doing research for incorporating external knowledge into Pill Detection problem.
Technical skills: Graph neural networks (Deep walk, GCN, GAT, GIN, etc), Object detection models (Yolo, Faster RCNN, ViT), Attention mechanism, Transformer architecture, multimodal data fusion.
 - Backdoor Attack Prevention in Federated Learning:**
Task: Doing research for preventing the backdoor attack in federated learning.
Technical skills: Federated learning, Clustering algorithms, Gradient-based heuristics algorithms
- National Institute of Advanced Industrial Science and Technology (AIST), Japan** On-site
Internship (Full-time) Oct 2022 - Dec 2022
 - Multimodal Learning, Missing in Healthcare Application:**
Tasks: Survey about Multimodal learning, missing in Healthcare applications. Develop idea and do implementation for Lung Cancer Tumor detection task
Technical skills: python, pytorch, R
- BKAI Research Center** On-site
Research Assistant (Part-time) Sep 2019 - Sep 2022
 - Discharge, Water Level prediction:**
Task: Doing research on time series predictions for hydrological factors (Discharge and Water Level).
Technical skills: Data analysis and manipulation, Recurrent neural networks, ensemble learning, Singular Spectrum Analysis
 - Fi-Mi Project: AI-based Mobile Air Quality Monitoring and Forecasting System:**
Tasks: Team leader of the back-end and mobile development teams
Technical skills: FastAPI, MongoDB, Flutter
 - Data calibration for sensory data:**
Task: Doing research on calibrating the sensory data collected from Fi-mi devices
Technical skills: Generative models (GAN, style-GAN, etc), Recurrent neural networks, Attention mechanism, multi-task learning architecture.
- Hanoi University of Science and Technology** On-site
Teaching Assistant June 2021 - December 2021
 - Introduction to Data Science:**
Task: Making Quizzes for Students, Checking Capstone Projects of students, ...
Technical skills: Presentation
- MDC Software Solutions** On-site
Internship (Part-time) June 2020 - December 2020
 - Lina Review Application:**
Task: Developing a mobile application that allows users to post reviews and see other users' reviews.
Technical skills: React, Redux

PUBLICATIONS

- Nature Scientific Reports 2022: Anh Duy Nguyen**, Phi Le Nguyen, Viet Hung Vu, Quoc Viet Pham, Viet Huy Nguyen, Minh Hieu Nguyen, Thanh Hung Nguyen, Kien Nguyen, "Accurate Discharge and Water Level Forecasting Using Ensemble Learning with Genetic Algorithm and Singular Spectrum Analysis-based Denoising", Nature Scientific Reports Journal 2022.
- ACIIDS 2022: Anh Duy Nguyen**, Thuy Dung Nguyen, Huy Hieu Pham, Thanh Hung Nguyen, Phi Le Nguyen, "Image-based Contextual Pill Recognition with Medical Knowledge Graph Assistance", 2022 Asian Conference on Intelligent Information and Database Systems (ACIIDS), 2022.

- **WCNC 2022:** Tuan Anh Nguyen Dinh, **Anh Duy Nguyen**, Truong Thao Nguyen, Thanh Hung Nguyen and Phi Le Nguyen, “Spatial-temporal Coverage Maximization in Vehicle-based Mobile Crowdsensing for Air Quality Monitoring”, 2022 IEEE Wireless Communications and Networking Conference (WCNC), 2022, pp. 1449-1454, doi: 10.1109/WCNC51071.2022.9771711.
- **Sensors 2021:** Phi Le Nguyen*, Van Quan La*, **Anh Duy Nguyen***, Thanh Hung Nguyen, and Kien Nguyen. “An On-Demand Charging for Connected Target Coverage in WRSNs Using Fuzzy Logic and Q-Learning”, Sensors 21(16), 2021, doi: <https://doi.org/10.3390/s21165520>.
* *Equal contribution*
- **IEA/AIE 2021:** **Anh Duy Nguyen**, Viet Hung Vu, Minh Hieu Nguyen, Duc Viet Hoang, Thanh Hung Nguyen, Kien Nguyen, and Phi Le Nguyen. “Efficient Prediction of Discharge and Water Levels Using Ensemble Learning and Singular-Spectrum Analysis-Based Denoising”, the 34th International Conference on Industrial, Engineering & Other Applications of Applied Intelligent Systems (IEA/AIE 2021), pp. 34–46, doi: https://doi.org/10.1007/978-3-030-79463-7_4

HONORS AND AWARDS

- **The second prize in the National Science and Technology Awards for Students in Higher Education Institutions 2022:** Winning the second prize with the paper entitled “Joint Optimization of Charging Location and Time for Network Lifetime Extension in WRSNs.”
- **Top 5 AI Solutions in AI Awards 2022:** Being one of 5 best AI solutions in AI Awards 2022 - Vietnam AI Day 2022, held by VNExpress newspaper in collaboration with AI4VN organization with solution: “VAIPE: Protective healthcare monitoring and supporting system for Vietnamese”
- **The first prize in the Student Scientific Research Conference 2022:** Winning the first prize in HUST Student Scientific Research Conference 2022 with the paper entitled “Joint Optimization of Charging Location and Time for Network Lifetime Extension in WRSNs.”
- **The first prize in SoICT-IBM-Hackathon 2021:** Winning the first prize in Call For Code Track of SoICT-IBM-Hackathon 2021 with the project entitled “A platform for forecasting floods based on sensor system, applying deep neural network.”
- **The first prize in the Student Scientific Research Conference 2021:** Winning the first prize in HUST Student Scientific Research Conference 2021 with the paper entitled “Forecasting discharge and water level utilizing deep neural network.”
- **Encouragement scholarship for top 5% best students:** Receiving consecutive scholarship for top 5% best students in four semesters in HUST.
- **Top 20 papers in Student Scientific Research Conference 2020:** Being in top 20 best papers in HUST Student Scientific Research Conference 2020 with the paper entitled “Exploiting deep neural networks and genetic algorithms for predicting PM2.5 in Hanoi.”
- **Top 7 products in Creative Information Technology Products 2020:** Being in seven final teams for proposing creative products in HUST contest with the product named “A platform for forecasting environment factors (air, water).”

PROGRAMMING SKILLS

- **Languages:** Python, JavaScript, C#, C, C++, SQL, JAVA, Dart, Bash
- **Frameworks:** PyTorch, TensorFlow, Scikit, SciPy, Keras, Django, NodeJS, ReactJS, FastAPI, Flutter
- **Tools:** Docker, GIT, MongoDB, PostgreSQL, MySQL
- **Platforms:** Linux, MacOS, Web, Mobile, AWS

OTHER SKILLS

- **Languages:** English (TOEIC 2 skills - Listening & Reading): **970/990**; (TOEFL 4 skills): **91/120**
- **Soft Skills:** Leadership, Presentation, Writing, Public Speaking, Time Management

REFERENCES

- **Phi Le Nguyen, Ph.D.:**
School of Information and Communication Technology, Hanoi University of Science and Technology
Managing Director of the International Research Center for Artificial Intelligence (BKAI)
Email: lenp@soict.hust.edu.vn;
Personal Webpage: <https://users.soict.hust.edu.vn/lenp/>
Google Scholar URL: https://scholar.google.com/citations?user=L_NKoQwAAAAJ&hl=en&oi=aoi
- **Huy Hieu Pham, Ph.D.:**
College of Engineering & Computer Science (CECS), VinUniversity,
Associate Director & Research Fellow, VinUni-Illinois Smart Health Center, Vinhomes Ocean Park, Gia Lam District, Hanoi, Vietnam
Personal Webpage: <https://huyhieupham.github.io/>
Google Scholar URL: <https://scholar.google.com/citations?user=mXcFcNkAAAAJ&hl=vi>