Phạm Quốc Bình

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EDUCATION & ACHIEVEMENTS

❖ **Pham Dinh Ho Secondary School** 2019 – 2023

- **Gold Medal** in Mathematics at the 2021 Ho Chi Minh City Open April Olympiad Competition.
- **First prize** in Science and Technology at the City Level, 2021 – 2022.
- **First prize** in Mathematics at the City Level, 2022 – 2023.
- **Second prize** in Handheld Calculator at the City Level, 2022 – 2023.

❖ **VNU-HCM High School for the Gifted** 2023 – 2026

- **Valedictorian** in the Math specialization of the 10th-grade entrance exam, 2023 – 2024.
- **Encouragement Prize** in the AI Challenge of the Olympic competition for Central Highlands and Central Vietnam, 2025.
- **Encouragement Prize** in the IT specialization of the Olympic competition for Central Highlands and Central Vietnam, 2025.
- **Third Prize** in Vietnam Olympiad Artificial Intelligence VOAI, 2025 – 2026.
- **Third Prize** in Vietnam Artificial Intelligence Championship VAIC, 2025 – 2026.
- **First Prize** in Vietnam Math Model Competition VM2C, 2025 – 2026.
- **AI Pixel Perfect Award** in AI Youth Hackathon Steam for Vietnam, 2025 – 2026.

WORK EXPERIENCE

❖ **Automation design and ML for pollution prediction and damage analysis, HCMUT.**
November 2023 – March 2025

- Developed an AI model to predict PM2.5 pollution in Hanoi.
- Published in Journal of Hydrometeorology.
- Gained expertise in machine learning

❖ **Intern – AI & Technology Mentorship Program** July 2025 – Current

- Mentored by UIT expert, building a versatile AI Agent project spanning multiple fields.

RESEARCH EXPERIENCE

❖ **Exploiting the results of running the GEOS-CF model to evaluate PM2.5 concentration in near real-time in Vietnam** December 2023 – June 2024

- Analyzed and processed data from the GEOS-CF model to assess air quality and PM2.5 concentration levels in Vietnam.
- Developed real-time monitoring systems for pollution data using geospatial modeling.
- Presented findings in various environmental science forums and conferences.
- https://doi.org/10.36335/VNJHM.2024(19).79-89

❖ **Developing PM2.5 mitigation solutions based on the analysis of the relationships between PM2.5 concentrations and precursor factors: a case study of Hanoi, Vietnam**
November 2024 – June 2025

- Conducted a comprehensive analysis to identify key precursor factors affecting PM2.5 concentrations in Hanoi.
- Developed strategies for mitigating PM2.5 pollution based on the identified relationships between pollutants and environmental factors.
- Presented research outcomes in environmental science conferences and contributed to policy recommendations.
- https://doi.org/10.1007/s44273-025-00060-5

EXTRACURRICULAR ACTIVITIES

❖ **Collaborator for Student Automation Projects** July 2024 – October 2024

- Supported students in developing automation systems to streamline work processes, enhancing productivity and efficiency.
- Collaborated with peers to implement practical solutions for real-world challenges in system automation.

❖ **Participant in Capture The Flag (CTF) Events**

- Actively participated in CTF competitions to deepen knowledge of cybersecurity, focusing on areas such as reverse engineering, web exploitation, and forensics.
- Gained hands-on experience in identifying and addressing security vulnerabilities, contributing to skill development in ethical hacking and cybersecurity.

TECHNICAL SKILLS

- **Programming Languages**: Python, Java, C++
- **Machine Learning & AI**: TensorFlow, scikit-learn, Keras, PyTorch, OpenCV
- **Data Analysis & Visualization**: Pandas, NumPy, Matplotlib, Seaborn
- **Modeling & Simulation Tools**: GEOS-CF, WRF-Chem, CMAQ, MIKE 11, MIKE 21
- **Web Development**: HTML, CSS, JavaScript (https://binhpham.netlify.app/)