Quoc Huy Pham

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www.linkedin.com/in/harveyphm

Highly skilled engineer with expertise in robotics, cybersecurity, and deep learning. Seeking to leverage technical proficiency and leadership capabilities as a Cyber Capabilities Development Officer (17D) in the U.S. Army. Dedicated to enhancing mission success through innovative software and hardware solutions in cyberspace and electromagnetic spectrum operations. Also a passionate marathoner who thrives on challenges and an enthusiastic participant in red teaming and capture-the-flag events.

Technical Skills

- **Programming:** C/C++, Python, Matlab, TensorFlow, PyTorch, LangChain, ONNX
- **Software & Systems:** Git, Linux (Computer, Raspberry Pi, Jetson Nano), Embedded Systems
- **Hardware:** Sensing Systems (Cameras, LIDAR, GPS, IMUs), Circuit Design

Professional Experience

Research Student

Structures and Artificial Intelligence Lab @ UH *August 2024 – Present*

- Evaluate hallucination tendencies of large language models (LLMs) and retrieval augmented system (RAG) for Army documents.
- Create pipeline to automatically generate domain-specific datasets using Army documents for LLMs and RAG systems development.
- Develop comprehensive metrics to evaluate RAG systems performance on Army datasets.
- Designed RAG systems leveraging graph databases and vector databases for improved retrieval accuracy.

Project Manager

CougarAI Student Organization @ UH *August 2024 – Present*

- Partnered with SeedAI to organize Hack The Future, an event focusing on LLM security and jailbreaking.
- Conducted workshops on developing personal LLMs using LangChain, HuggingFace, Ollama, and Streamlit.

Research Engineer

GMO-z.com Runsystem *Sep 2019 – Jul 2020*

- Designed and optimized deep learning models (YOLO, MobileNet, ResNet) for real-time applications in TensorFlow.
- Integrated advanced network techniques, including pruning and quantization, to enhance real-time system performance.
- Deployed deep learning solutions via secure APIs using Docker, ONNX, and Flask.

Research Student

LIAS Lab @ ENSMA *Jan 2019 – Jul 2020*

- Developed a real-time indoor localization algorithm using Wi-Fi signals, achieving sub-5% error rates
- Improved algorithm performance by 40% through the use of particle filters and real-time scheduling techniques.
- Implemented C-based robotic control algorithms on Linux, enabling robust navigation despite sensor uncertainty.

Research Student

Ho Chi Minh City University of Technology *Aug 2018 – Jan 2019*

- Designed an air data probe and improved IMU accuracy using Mahony filters, achieving <5% error rates.
- Developed optimized control systems for aerial vehicles and manufactured a custom electrical board for minimal redundancy.

Education

University of Houston, Houston, TX
M.S. in Engineering Data Science
GPA: 4.0

- Project Manager at CougarAI
- Member of Tau Beta Pi (Top 20% of graduating class)

Ho Chi Minh City University of Technology, Vietnam
PFIEV Bachelor in Aeromechanical Engineering

Certifications

- CompTIA Security+ (June 2024 - June 2027)
- CompTIA Network+ (June 2024 - June 2027)