

## Personal Statement

Dedicated AI researcher with a strong foundation in computer science and a focus on developing cutting-edge solutions in computer vision, especially efficient object detection. Graduated top of my class, I aim to deepen my expertise in artificial intelligence and computational systems through the Master of Computer Science program at EPFL, contributing to groundbreaking research and technological advancements.

## Education

### Hanoi University of Science and Technology (HUST)

Hanoi, Vietnam

Bachelor of Computer Science, Talented Program.

2019 - 2023

- **CGPA:** 3.90/4.0. Graduated #1 in the program.
- **Thesis:** SPARTA-GEMSTONE: A two-phase approach for efficient node placement in 3D wireless sensor networks under Q-Coverage and Q-Connectivity constraints.

## Experience

### VinAI Research

Hanoi, Vietnam

AI Resident - Supervisor: Prof. Minh Hoai Nguyen

02/2023 - Present

- **Efficiency-preserving Scene-adaptive Object Detection:** Developed a framework for multi-camera video streams, achieving state-of-the-art precision-efficiency trade-offs (4.65 mAP improvement). Accepted for oral presentation at BMVC 2024.
- **Low-Rank Prompt Adaptation for Open-Vocabulary Object Detection:** Pioneered a framework that optimizes textual prompts, achieving state-of-the-art performance across five datasets with minimal annotation requirements.
- **Unidentified License Plate Detection:** Built a detection pipeline for obscured license plates, integrating OCR, and awarded Best Applied Rotation Project in Q2 2024.

### MSO Lab, HUST

Hanoi, Vietnam

Member - Supervisor: Assoc. Prof. Thi Thanh Binh Huynh

10/2020 - Present

- Conducted research on target and area coverage problems in wireless sensor networks (WSNs) and mentored new lab members. Two papers accepted in *Journal of Network and Computer Applications* (Q1, IF 7.7).

### FPT Software

Hanoi, Vietnam

AI Engineer Intern

08/2022 - 02/2023

- Developed a chatbot using Rasa to assist the IT Helpdesk team, automating user inquiries and improving support response times.

## Publications

### Conference Proceedings

1. Z. Zhang, **V. Q. Truong**, and M. Hoai, "Efficiency-preserving scene-adaptive object detection," in *35th British Machine Vision Conference 2024*.

### Journal Articles

1. **Q. T. Vu**, P. T. Nguyen, T. H. Nguyen, T. T. B. Huynh, V. C. Trinh, and M. Gidlund, "Striking the perfect balance: Multi-objective optimization for minimizing deployment cost and maximizing coverage with harmony search," *Journal of Network and Computer Applications*, vol. 232, p. 104 006, 2024.
2. N. T. Hanh, H. T. T. Binh, **V. Q. Truong**, N. P. Tan, and H. C. Phap, "Node placement optimization under q-coverage and q-connectivity constraints in wireless sensor networks," *Journal of Network and Computer Applications*, vol. 212, p. 103 578, 2023.

### Under review

1. **V. Q. Truong**, T. T. Minh, N. T. Hanh, et al., "SPARTA-GEMSTONE: A two-phase approach for efficient node placement in 3D WSNs under Q-Coverage and Q-Connectivity constraints."
2. Z. Zhang\*, **V. Q. Truong\***, and M. Hoai, "Low-rank Prompt adaptation for open-vocabulary object detection."

## Awards and Achievements

<b>Best Applied Rotation Project</b> of Quarter 2, VinAI Research	2024
<b>Third prize</b> , AI Hackathon: Face Analysis Challenge, Pixta Vietnam	2024
2 times <b>Sumitomo Sponsor Scholarship</b> , HUST	2023, 2020
<b>Best Presentation Award</b> for the graduation thesis in the Optimization committee, HUST	2023
<b>First prize</b> , SoICT Hackathon, Tiki Track	2023
<b>Consolation Prize</b> , SoICT Student Research Conference	2022
3 times <b>Study Encouragement Scholarship</b> , HUST	2022, 2021
<b>Top 6 in National High School Exam</b> with Math, Physics, and English combination	2019

## Certifications

<b>IELTS Academic:</b> 7.5 (Reading 9.0, Listening 8.5, Writing 7.0, Speaking 6.0), British Council	2024
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## Skills

**Technical:** Java, Python, C/C++, SQL, LaTeX, MySQL, PostgreSQL, SQLite

**Language:** Proficient in English (reading, writing, speaking)

**AI Expertise:** Computer Vision

**Others:** Academic research, teamwork, presentation skills

## References

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