*To Prof. Gon-Woo Kim,*

*Vice Dean, College of Electrical & Computer Engineering*
*Intelligent Robots Lab. (IRL)*
*Chungbuk National University*

Dear Prof. Gon-Woo Kim,

I am writing to express my strong interest in applying for the combined (MS/PhD) program at Chungbuk National University within your research lab. As a software developer at FPT Software in Vietnam, I have been drawn to pursue a higher degree in Korea and your lab's research topic aligns well with my academic and professional experience.

I have heard about your research lab through my brother who recently obtained his PhD at CBNU. I am particularly impressed by your great reputation in the field and your kindness to students. My brother has inspired and mentored me to pursue a higher degree in Korea, and I am eager to continue my academic journey under your guidance.

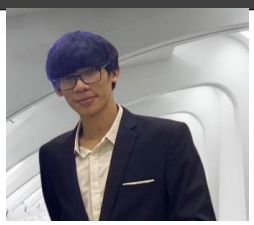
As you can see from my enclosed CV, I obtained my BS degree in Electronics & Telecommunication Engineering from Da Nang University of Technology and Science, a top engineering university in central Vietnam, in 2022. Since 06/2021, I have been working for one of the largest software companies in Vietnam, FPT Software, where I have gained expertise in embedded and autonomous systems. I also have knowledge of image processing and deep learning frameworks. I am proficient in programming languages such as C++ and Python and am constantly seeking to expand my knowledge. In fact, I am currently studying SLAM, which is the main research topic in your lab.

I am confident that I could obtain necessary skills and knowledge to excel in your research lab within 5 months from now. I am a quick learner and can work well under pressure to meet project deadlines. Moreover, I am a responsible, reliable, and hard-working individual who believes in putting in the necessary effort to achieve outstanding results. Additionally, I am fluent in English and have gained a good understanding of Korean culture through my regular attendance at a Korean church for the past three years.

I am eager to learn new knowledge, expand my skills, and collaborate with lab members to make significant contributions to your research. Thank you for considering my application, and I look forward to hearing from you.

Sincerely,

Ngoc-Trieu Phan



# Ngoc-Trieu Phan

***Software Developer***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https://github.com/TrieuPhanNgoc

https://www.linkedin.com/in/phan-trieu-5688b715b/


## About Me

I am a dedicated software developer with a background in electronics engineering.
I am driven by my passion for exploring new knowledge and designing embedded systems, particularly for intelligent and autonomous systems. I am a quick learner, proficient in C++ and Python, and can work well under pressure to meet deadlines.
I am currently seeking an opportunity to pursue a higher degree in Korea and further develop my skills and expertise.

## Career Objectives

Become an expert in the field of intelligent systems, make significant contributions to the field through innovative research and development projects.
I am seeking a challenging and rewarding career in research and development, where I can apply my technical knowledge and problem-solving skills to develop cutting-edge technologies that address real-world problems.

### On-going Courses

- SLAM Course (University of Freiburg)
- Programming for Robotics ROS (ETH)

### Language

English: Professional Working Proficiency

## Experience

**Automotive Software Developer** **06/2021 – Present**
***FPT Software – Da Nang***
*Developed the monitoring and control system for electric cars and tractors, using socket technologies to communicate between different electronic control units (ECUs) and processes, and using various signals to control the tractor's behavior.*

- Designed and Implemented the method for communicating between physical devices by using **CAN bus protocol** with **Boost Asia** in **Linux Kernel (C/C++)**
- Implemented **sorting algorithms** for rearrange the reference lines on car.
- Implemented RPC protocols for communicating between the processes
- Created UI using Projektor/Qt framework on Linux Kernel to interact with tractors

## Education

**B.S in Electronics and Telecommunication** **09/2017 – 06/2022**
***Da Nang University of Science and Technology (DUT)***
**Capstone**: Industrial Zone Environment Monitoring and Controlling System
**Coursework**: Image Processing, C/C++ Programming Languages, Probabilistic, Computer Architecture, Semiconductor Devices, Circuit Analysis
**Projects**:

- Robot Controller (Arduino, ultrasonic sensor, C++)
- Swift Birds Monitoring System (Sensor, MQTT, Node-red, Python, C/C++, ESP8266)
- Water Level Monitoring System (STM32F4, C/C++, ultrasonic sensor)
- Design ALU 8-bit (FPGA, VHDL)

## Skills

**Programming**
- C++
- Python
- Java Script
- VBA

**Technical**
- Image Processing
- Algorithm
- Deep Learning
- Torch
- Linux
- VS Code / Git

**Professional**
- Research
- Self-learning
- Problem solving
- Communication
- Adaptability
- Presentation

## Certificate

- Linux device driver programming (Udemy)
- Data Structure and Algorithm (Udemy)
- Practical OpenGL and GLSL shaders fundamentals with C++ (Udemy)

## Reference

- Nguyen Huu Tuan
  Project Manager, FPT Software
  Email: tuannh9@fsoft.com.vn
- Dr. Linh-An Phan
  Postdoctoral Researcher, University College Cork
  Email: lphan@ucc.ie

# Study and Research Plans

## I. Study Plan (5 months from 04-08/2023)

| Activities | Month | | | | |
|---|---|---|---|---|---|
| | 04/2023 | 05/2023 | 06/2023 | 07/2023 | 082023 |
| Study SLAM video course [1] | | | | | |
| Read “SLAM for Dummies” book [2] | | | | | |
| Study Programming for Robotics course [3]<br>Read article and papers about SLAM | | | | | |
| Study SLAM simulation tools<br>Implement and experiment SLAM algorithms | | | | | |

**Resources**:

[1] SLAM Course, by University of Freiburg

http://ais.informatik.uni-freiburg.de/teaching/ws13/mapping/index_en.php

[2] SLAM for Dummies, Søren Riisgaard and Morten Rufus Blas, MIT.

https://dspace.mit.edu/bitstream/handle/1721.1/119149/16-412j-spring-2005/contents/projects/1aslam_blas_repo.pdf

[3] Programming for Robotics, by ETH Zurich

https://rsl.ethz.ch/education-students/lectures/ros.html

## II. Research Plan

| Activities | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 |
|---|---|---|---|---|---|
| - Study research methodologies<br>- Study project requirements<br>- Study the state of the art<br>- Study algorithms and tools in lab<br>- Contribute to lab’s projects | | | | | |
| - Study applications of deep learning in SLAM<br>- Find the 1st research idea<br>- Implementation and evaluation<br>- 1st manuscript preparation | | | | | |
| - Continue explore research trend<br>- Find the 2nd research idea<br>- Implementation and evaluation<br>- 2nd manuscript preparation | | | | | |
| - Continue explore research trend<br>- Find the 3rd research idea<br>- Implementation and evaluation<br>- 3rd manuscript preparation | | | | | |
| - Find the 4th research idea<br>- Implementation and evaluation<br>- 4th manuscript preparation<br>- Dissertation preparation | | | | | |