Quang Huy BUI

Tel: (+82) 010 2133 0729
E-mail: buiquanghuy2907@gmail.com

EDUCATION

Sejong University
Seoul, Republic of Korea
PhD program from Department of Intelligent Mechatronics Engineering
September 2020 – Present
Cumulative major GPA: 4.44/4.5
Research direction:

- Deep learning-based applications for vehicle perception
- Object detection, landmarking detection and tracking using vehicle-mounted vision systems (camera, lidar)
- Calibration algorithm for vehicle-mounted vision systems (camera-camera calibration, camera-lidar calibration, lidar-lidar calibration)

Ho Chi Minh City University of Technology, Vietnam National University (HCMUT – VNU HCM)
Ho Chi Minh City, Vietnam
PFIEV program (Programme de Formation d'Ingénieurs d'Excellence au Vietnam)[1]
Bachelor of Mechatronics Engineering
September 2014 – July 2019
Academic records:

- Thesis: "Study and Algorithm Development for Orientation from IMU"
- **Top 3** highest mark for final thesis in Department of Mechatronics Engineering: 8.14/10
- **Top 2** highest GPA in Mechatronics Engineering, PFIEV program
- Cumulative major GPA: 8.54/10
- *Remarkable coursework performance:*
  - Control Actuators Intelligently: 8.0/10
  - Linear and Nonlinear Control System: 8.0/10
  - Statistic Methods and Data Analysis: 9.0/10
  - Automation and Optimal Control: 9.0/10

RESEARCH EXPERIENCE

Intelligent Vehicle Perception Group (IVPG), Sejong University
Seoul, Republic of Korea
September 2022 – Present
Position: Researcher
Advisor: Prof. Jae Kyu Suhr
Lab website: https://sites.google.com/view/ivpg/home
Projects:

- Deep learning-based parking slot detection in around view monitor (AVM) images
  - Preprocessing fisheye camera image to produce AMM images
  - Create labeling tool for labeling parking slot detection dataset
  - Improving two-stage general object detector (based on Faster RCNN) for parking slot detection

[1] PFIEV program is the Training Program of Excellent Engineers in Vietnam in 5 years with ~268 credits. This program has been accredited by Commission of French Engineer Diploma (CTI), European Network for Accreditation of Engineering Education (ENAEE), EUR-ACE Label. Ministry of Education and Training confirmed the equivalence of the PFIEV diploma to the Master degree for the Admission to post-graduated education

    - Improving one-stage detectors (based on YOLO) for parking slot detection
    - Applying Transformer architecture for parking slot detection
- Deep learning-based driving-lane detection using single camera
    - Create simulation environment with CARLA
    - Apply deep learning-based technique for detecting the current driving lane of the vehicle using the front camera's images

Control and Automation Lab, Ho Chi Minh City University of Technology
Ho Chi Minh City, Vietnam
August 2018 – July 2019
Position: Student
Advisor: Dr. Cong-Bang Pham
Project: Algorithm Development for Wearable Sensors

- Develop method to calibrate the sensors before collecting data and during run time
- Develop an algorithm to calculate the rotation angles using sensors' readings
- Implement filter to reduce data noise, method for low-cost sensors
- Analyze data and process motion simulation
- Design and develop experimental model for data collecting algorithm testing

PUBLICATIONS

- **Q. H. Bui** and J. K. Suhr, "CNN-based Two-Stage Parking Slot Detection Using Region-Specific Multi-Scale Feature Extraction," *arXiv:2108.06185*, 2021.
- **Q. H. Bui** and J. K. Suhr, "One-stage Parking Slot Detection Using Component Linkage and Progressive Assembly," in processing.
- **Q. H. Bui** and J. K. Suhr, "CNN-based Driving Lane Recognition for Vehicle Localization on Highways," in *한국자동차공학회 춘계학술대회*, pp. 1028-1029, 2022.
- **Q. H. Bui** and J. K. Suhr, "Two-Stage Parking Slot Detection Method Based on Geometric Properties of Parking Slots in AVM images," in *한국자동차공학회 추계학술대회 및 전시회*, pp. 1104-1105, 2021.

CAREER

Robert BOSCH Engineering & Business Solutions Vietnam
Ho Chi Minh City, Vietnam
September 2019 – August 2020
Position: Embedded Software Developer

- Designed and implemented base software of AUTOSAR Architecture for ECUs in automotive domain
- Implement Life Cycle Management for Car Multimedia System
- Applied Google Test framework for implementing tests

SKILLS

Technical skills

- Deep learning framework: TensorFlow
- Data processing: Proficient in analyzing image data, preprocessing images (distortion removing), labeling data
- Modelling: Proficient in utilizing SOTA deep learning models and implementing task-oriented modifications
- Programming language: Python, Matlab, C, Shell Scripts, Java Scripts
- Modelling and simulation software: CARLA, SOLIDWORKS, AUTOCAD
- Embedded software development: Embedded software platform in automotive, AUTOSAR

Language

- Vietnamese (Native)
- English (Intermediate): TOEIC 925
- French (Intermediate): DELF B1

HONORS AND AWARDS

Encouraging study scholarship 2014 – 2019

- A scholarship from Ho Chi Minh City University of Technology for students who achieve good result in study and social activities
- 10 scholarships for 10 semesters studying in PFIEV program

Excellent student awards 2017 – 2018, 2018 – 2019

- Awards from Ho Chi Minh City University of Technology for students who continuously achieve good result in study, research, extracurricular activities