

DUONG TUNG LAM

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Communication Languages: Vietnamese (Native), English (C1)



EDUCATION

Seoul National University (Seoul, South Korea)

Master of Electrical & Computer Engineering

Mar 2020 - Feb 2023

Hanoi University of Science and Technology (Hanoi, Vietnam)

(Advanced Program in cooperation with San Jose University, USA)

Bachelor of Electronics and Telecommunications

Aug 2014 - Jul 2019

EXPERIENCE

Detail project information are available at <https://dtlam26.github.io/projects>

PIDL (SNU Laboratory)

Intelligent System Researcher

Seoul, South Korea

Mar 2020 - Mar 2023

Parking Reservation Management System

Jan 2022 - Dec 2022

Role: *Parking Occupancy Model Design - System Design - Edge Devices Integration* ([Demo](#))

A management system among multi car parking lots in Smart City:

- Detect occupied/available/illegal slots
- Capturing the model uncertainty/error in terms of training error and spatial error to enhance system trustfulness
- Perform reservation management via online traffic information and distances (Leaflet and REST).

Partial of this work is published on [ECCV conference publication](#).

Domain-aware Active Learning for Real-time Object Detection in Smart City

July 2021 - Jan 2022

Role: *Active Learning Integration - Edge Devices Integration*

An active learning method for a general model improvement in Smart City scale under various mutation of environment (lights, camera angles,...). The aim is to provide the most beneficial dataset from realworld dataset to reduce the effort of annotation, exhaustive training and provide insight for model performance

Dynamic Priority Seat Allocation and Bus Interval Management in Smart Public Transport

Mar 2021 - July 2021

Role: *Multimodel Design - Edge Devices Integration - Multicamera Aggregation Protocol Design* ([Demo](#))

A Gwangju's multi-camera system tracks passengers in a top view - fish eye camera and matches them with their appearance attributes. The aim is for autonomously allocating seats for elders, handicapped people and pregnant women; and estimating efficient bus interval in Gwangju province, Korea:

- Top-view human detection
- Mask/non-mask detection for face capture | Attribute classification through a multi-head classifier
- Pose Estimation | Appearance classification
- Message broker for sharing information and aggregating information among edge devices

Edge Management Framework for Data collection and Deployment in Smart City

Nov 2020 - Feb 2021

Role: *Framework Design - Web Design - Edge Devices Integration*

A framework serves for a data life cycle scope through Nvidia Jetson and Google Models with two main functions:

- Auto-aware module for incorrect information suggestion for a single inference for training data pool injection
- Maintaining edge model performance (Distillation and Quantization)

Fake News Detection Plugin

Aug 2020 - Dec 2020

Role: Algorithm Integration

- A plugin will scan the entire website and classify whether the news is fake or not:
- Title & content extraction (OCR and BERT) | Fake content prediction (GNN)
 - Web link classification and Web appearance classification

Smart Driving Assistant Device: Alert close vehicles and Traffic measurement

May 2020 - Dec 2020

Role: Object Detection Design - Distance Estimation Design - Edge Devices Transformer Integration ([Demo](#))

- An edge device assistant: alert drivers when there is close contact and update traffic status along the ride to a global service:
- Vehicle detection was conducted by mimicking Transformer behavior on edge devices.
 - The traffic status would be then used to train a GCN for traffic forecasting.

ASI Co.

Technical Manager

Hanoi, Vietnam

Feb 2022 - Dec 2022

Smart City Traffic Management Project

Feb 2022 - Dec 2022

Role: Solution Design - Testbench Design - Team Management ([Demo](#))

- A governmental management project aim to provide various function capturing traffic information via 100+ cameras in Vietnamese provinces:
- Autonomous illegal driving detection and traffic density estimation (Multi-objects tracking)
 - License plates recognition (OCR and detection)

TinhVan Co.

Computer Vision - AI Engineer

Hanoi, Vietnam

Aug 2019 - Feb 2020

Realtime Facial Status Evaluation from Cameras

Dec 2019 - Feb 2020

Web Service for Employee Recognition Management

Aug 2019 - Dec 2019

Vinsmart - VP9

Computer Vision - AI Engineer

Hanoi, Vietnam

Dec 2018 - Jun 2019

Abnormal Activity Recognition in Public Sector

Apr 2019 - Jun 2019

Employee Tracking & Recognition From High Camera View

Dec 2018 - Apr 2019

AICS Lab

Undergraduate Researcher

Hanoi, Vietnam

Jan 2017 - Jul 2019

Medical signal classification: collaborate with NUS(National University of Singapore), Singapore

Dec 2018 - Apr 2019

Zebra-fish ECG signal classification: collaborate with Hero Lab from UCI (University of California, Irvine), USA

Sept 2018 - Dec 2018

ACHIVEMENTS & PUBLICATION**Department Award: Excellent Master Thesis**

2023

[1 Oral Paper in ECCV Workshop](#)

2022

[1 Oral Paper in RICE Conference](#)

2021

Top 4 Hyundai Motor Chung Mong-Koo Scholarship

2020

Undergraduate: First Prize for Best Project Contest

2016

Hanoi Talented Physics in Highschool: Second Prize

2014

TECHNICAL SKILLS**Language Code:** Advance: Python (3+ years) | Basic: C/C++, Java/TypeScript, Bash**Tools/Platforms, Frameworks:****Database:** SQL Databases, MongoDB, Neo4j, Redis, Spark

Advance: Tensorflow 1&2 (3+ years), Pytorch (3+ years), TensorRT (2+ years), DeepStreamSDK (2+ years)

Model Architecture: CNN models, Residuals, FPN/Bi- FPN, GNN models, Transformer, BERT, Encoder-Decoder, LSTM

Basic: Django/Angular, ClipperAI, Horovod, Ray, Slurm, Docker, Kafka, Airflow/Celery, OpenCV