

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

Samsung R&D Center

Senior Multimedia Engineer (Team Leader)

Hanoi, Vietnam

April 2023 - Present

Multimedia Applications on Mobile for Samsung Apps (Studio Editor/Photo Editor/Gallery)

Role: Multimedia Engine Design & Development - Mentor/Training - Patent/Paper Research

Photo Editor engine development:

- Conduct both (non-AI) traditional image processing and AI approaches for Auto-Tone adjustment.
- Perform extracting image tones as an image palette from an image through EncoderDecoder.
- Fasten applying effect & tone adjustment on 200MP image (speedup performance by 80%)
- Conduct GenerativeAI (Stable Diffusion) for inpainting and outpainting functions.

Studio engine development:

- Conduct mobile solution Audio Eraser & Waveform Visualizer.

Gallery search engine development:

- Google Patent on finding captured landmark images inside phone Gallery by typing its name.
- Conduct Video Classification & Photo Classification for Gallery recommendation system.

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

PIDL (SNU Laboratory)

Intelligent System Researcher

Seoul, South Korea

Mar 2020 - Mar 2023

Parking Reservation Management System

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

Jan 2022 - Dec 2022

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

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

Partial of this work is published in [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 mutations 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 the overall model performance.

Dynamic Priority Seat Allocation and Bus Interval Management in Smart Public Transport 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 corresponding 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: <ul style="list-style-type: none"> - 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 	Mar 2021 - July 2021
Edge Management Framework for Data collection and Deployment in Smart City 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: <ul style="list-style-type: none"> - Auto-aware module for incorrect information suggestion in a single inference - Maintaining edge model performance (Distillation and Quantization) 	Nov 2020 - Feb 2021
Fake News Detection Plugin Role: Algorithm Integration A plugin will scan the entire website and classify whether the news is fake or not: <ul style="list-style-type: none"> - Title & content extraction (BERT) Fake content prediction (GNN) - Web link classification and Web appearance classification 	Aug 2020 - Dec 2020
Smart Driving Assistant Device: Alert close vehicles and Traffic measurement Role: Object Detection Design - Distance Estimation Design - Edge Devices Transformer Integration (Demo) An edge device assistant: alert potential close collision to drivers and real-time update traffic status along the ride to a global server: <ul style="list-style-type: none"> - 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. 	May 2020 - Dec 2020
ASI Co. Senior Computer Vision Engineer (Remote)	Hanoi, Vietnam Feb 2022 - Dec 2022
Smart City Traffic Management Project Role: Solution Design - Testbench Design - Team Management (Demo) A governmental management project aim to provide various function capturing traffic information via 100+ cameras among Vietnamese provinces: <ul style="list-style-type: none"> - Autonomous illegal driving detection and traffic density estimation (Multi-objects tracking) - License plates recognition (OCR and detection) 	Feb 2022 - Dec 2022
Fire Detection CCTV Project Role: Solution Design - Testbench Design - Team Management A non-disclosed project to alert fire through CCTV cameras by multi Spatial Temporal models.	Feb 2022 - April 2022
JUNIOR LEVEL PROJECTS	
TinhVan Co. Computer Vision - AI Engineer	Hanoi, Vietnam Aug 2019 - Feb 2020
Realtime Facial Status Evaluation from Cameras Web Service for Employee Recognition Management	Dec 2019 - Feb 2020 Aug 2019 - Dec 2019
Vinsmart - VP9 Computer Vision - AI Engineer	Hanoi, Vietnam Dec 2018 - Jun 2019
Abnormal Activity Recognition in Public Sector Employee Tracking & Recognition From High Camera View	Apr 2019 - Jun 2019 Dec 2018 - Apr 2019
AICS Lab Undergraduate Researcher	Hanoi, Vietnam Jan 2017 - Jul 2019
Medical signal classification: collaborate with NUS (National University of Singapore) Zebra-fish ECG signal classification: collaborate with UCI (University of California Irvine, USA)	Dec 2018 - Apr 2019 Sept 2018 - Dec 2018

ACHIVEMENTS & PUBLICATION

Submitted Google Patent on Gallery Landmark Search	2024
Department Award: Excellent Master Thesis	2023
1 Oral Paper (ECCV)	2022
1 Oral Paper (RICE)	2021
Top 4 Hyundai Motor Chung Mong-Koo Scholarship	2020
Undergraduate: First Prize for Best Project Contest	2016

TECHNICAL SKILLS

Language Code: Python, C/C++, Java/TypeScript, Bash

Libs/Framework: Tensorflow 1&2, Pytorch, TensorRT, DeepStreamSDK, OpenCV, OpenGL, ClipperAI, Horovod, Slurm

Database: SQL-like Databases, MongoDB, Neo4j, Redis, Spark, Kafka

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

ServiceOps: Django/Angular, Android Studio (JNI), Docker, Kafka, Airflow/Celery