Hsiang-Wei (Eddie) Huang

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Summary

I am a current Ph.D. student in the Department of Electrical Computer Engineering at the University of Washington. I am working with Prof. Jenq-Neng Hwang and the Information Processing Lab. My research interests lie around **Single Camera and Multi Camera Object Tracking**, **Object Re-Identification** and **Action Recognition.**

Education

University of Washington **Mar 2023 – Present | Seattle**
PhD in Electrical and Computer Engineering
Research Interest : Object Detection and Tracking, Re-identification, Action Recognition

University of Washington **Sep 2021 – Mar 2023 | Seattle**
Master of Science in Electrical and Computer Engineering

National Chiao Tung University **Sep 2017 – Dec 2020 | Taiwan**
Bachelor of Science

Skills

Programming Languages : Python, SQL, C, Matlab
Software Tools : Pytorch, Tensorflow, Numpy, Scikit-learn, Pandas, OpenCV, Linux, Git, AWS, Azure, SQLite3, LaTex
Languages : English, Chinese

Work Experience

Computer Vision Research Intern **Feb 2023 – Apr 2023**
Chimei Motor Electronics Tainan, Taiwan
- Developed a real-time multi-class FCWS (Forward Collision Warning System) for trucks and construction vehicles.
- Improve vehicle LDWS (Lane Departure Warning System) accuracy by **30%** under poor visibility condition with auto encoder.
- Provide object tracking and re-identification background knowledge presentation for company's engineering team.

Capstone Project Member **Jan 2022 – Jun 2022**
Wyze Seattle, WA
- Developed an end to end system that can detect and classify dog breeds using the Vision Transformer model.
- Built and maintained a full-stack dog classifier website using AWS EC2 and achieve over **92%** accuracy on the Stanford Dog dataset.
- Built a fine-grained object tracker that can track and classify **91 kinds of different objects** and **120 breeds of dogs.**

Honors & Awards

1st Place of 2023 CVPR AI City Challenge in Multi-Camera People Tracking [URL] **Feb 2023 - Mar 2023**
- Present a robust anchor-guided clustering method for multi-camera people tracking and re-identification.
- Achieved the best performance with an IDF1 of 95.36, in the 2023 AI City Challenge Track 1 on the public testing set which consists of data from real and synthetic multi-camera settings.

3rd Place of ECCV DeeperAction Challenge - SportsMOT Track on Multi-actor Tracking [URL] **Jun 2022 – Sep 2022**
- Ranked **3rd place** in HOTA among over 130 teams on the final leaderboard.
- Achieved over **73.9%** HOTA on sports player tracking in three different sport scenes including basketball, volleyball and football.
- Paper presented at the **ECCV DeeperAction Workshop, 2022.**

5th Place of WACV Maritime Workshop in UAV Multi-Object Tracking [URL] **Aug 2022 – Oct 2022**
- Ranked **5th place** in HOTA on the final leaderboard in UAV Multi-Object Tracking.
- Achieved over **60.8%** HOTA on tracking of small objects including swimmers and boats.

Publications

[1] Enhancing Multi-Camera People Tracking with Anchor-Guided Clustering and Spatio-Temporal Consistency ID Re-Assignment
Hsiang-Wei Huang, Cheng-Yen Yang, Zhongyu Jiang, Jenq-Neng Hwang (Accepted by 2023 CVPR Workshop)

[2] Observation Centric and Central Distance Recovery for Athlete Tracking
Hsiang-Wei Huang, Cheng-Yen Yang, Jenq-Neng Hwang (Accepted by 2022 WACV Workshop for oral presentation)

[3] Multi-Target Multi-Camera Vehicle Tracking Using Transformer-Based Camera Link Model and Spatial-Temporal Information
Hsiang-Wei Huang, Cheng-Yen Yang, Jenq-Neng Hwang (In submission)

[4] Ki-67 Index Measurement in Breast Cancer Using Digital Image Analysis
Hsiang-Wei Huang, Wen-Tsung Huang, Hsun-Heng Tsai