Hsiang-Wei (Eddie) Huang

Email: hsiangwei0903@gmail.com   **Linkedin:** Click here   **Website:** Click here   **Mobile:** (+1) 206-670-7312

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 People and Vehicle Tracking**, **Human Pose Estimation**, **Object Re-Identification** and **Action Recognition.**

EDUCATION

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

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

HONORS & AWARDS

1st Place, 2024 WACV MaCVi Challenge - UAV-based Multi-Object Tracking and Re-Identification [URL]   Sep 2023 - Nov 2023
- Present a meta-data aided re-identification method for long-term multi-object tracking and re-identification.
- Achieved the best performance with an HOTA of 69.5 in the 2024 WACV Maritime Computer Vision Challenge.

1st Place, 2024 WACV MaCVi Challenge - USV-based Multi-Object Tracking [URL]   Sep 2023 - Nov 2023
- Present a strong model ensemble method to conduct tracking on USV-based multi-object tracking.
- Achieved the best performance with an HOTA of 21.5 in the 2024 WACV Maritime Computer Vision Challenge.

1st Place, 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, 2022 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 sports scenes including basketball, volleyball, and football.
- Paper presented at the **ECCV DeeperAction Workshop, 2022.**

PUBLICATIONS

- **Iterative Scale-Up ExpansionIoU and Deep Features Association for Multi-Object Tracking in Sports**
  Hsiang-Wei Huang, Cheng-Yen Yang, Jiacheng Sun, Jenq-Neng Hwang – 2024 WACV Workshop

- **Sea You Later: Metadata-Guided Long-Term Re-Identification for UAV-Based Multi-Object Tracking**
  Cheng-Yen Yang, Hsiang-Wei Huang, Zhongyu Jiang, Heng-Cheng Kuo, Jie Mei, Jenq-Neng Hwang – 2024 WACV Workshop

- **A Density-Guided Temporal Attention Transformer for Indiscernible Object Counting in Underwater Videos**
  Cheng-Yen Yang, Hsiang-Wei Huang, Zhongyu Jiang, Hao Wang, Farron Wallace, Jenq-Neng Hwang – IEEE ICASSP 2024

- **Boosting Online 3D Multi-Object Tracking through Camera-Radar Cross Check**
  Sheng-Yao Kuan, Jen-Hao Cheng, Hsiang-Wei Huang, Jenq-Neng Hwang – In submission to 2024 CVPR

- **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 – 2023 CVPR Workshop

- **Observation Centric and Central Distance Recovery for Athlete Tracking**
  Hsiang-Wei Huang, Cheng-Yen Yang, Jenq-Neng Hwang – 2023 WACV Workshop

- **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 – Preprint

- **Ki-67 Index Measurement in Breast Cancer Using Digital Image Analysis**
  Hsiang-Wei Huang, Wen-Tsung Huang, Hsun-Heng Tsai - 2020 Conference on Biomechatronics and Agricultural Machinery Engineering

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 a fine-grained object tracker that can track and classify **91 kinds of different objects** and **120 breeds of dogs.**