# HSUAN-I HO

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◇ LinkedIn: linkedin.com/in/hohs ◇ Github: github.com/azuxmioy ◇ ORCID: 0000-0001-8683-7538
◇ Research interests: **human-centric computer vision**, **machine learning**, **AR/VR applications**

## EDUCATION

**Eidgenössische Technische Hochschule Zürich (ETH Zurich)** *09/2018 - 09/2021*
*MSc in Computer Science*

· Overall Grade Point Average: 5.67/6.00
· Master thesis title: "**Motion Guided Human Video Synthesis**"
Diploma thesis, Grade: 6.00/6.00

**National Taiwan University (NTU)** *09/2012 - 06/2016*
*BSc in Electrical Engineering*

· Grade Point Average: 4.12/4.30, Ranking: 12/190 (6.3%)

**Tokyo Institute of Technology (Tokyo Tech)** *09/2015 - 03/2016*
*Young Scientist Exchange Program in Department of Computer Science*

· Academic Record: 91.4/100
· Research topic: "**Interactive Projector-Camera System and Augmented Reality**"

## PRACTICAL EXPERIENCE

**Advanced Interactive Technologies Lab, ETH Zurich, Switzerland** *07/2021 - 10/2021*
*Research Assistant (part time)*

· Proposed a new framework of human-centric video synthesis using human motion modeling
· Implemented video super-resolution modules in the FIFA player tracking system
· Published research paper, gave presentations to the institute of visual computing

**Video AI Group, NAVER Corp., South Korea** *09/2019 - 12/2019*
*Research Internship*

· Developed a pose-invariant re-identification model for human tracking and improved stability and accuracy by 30% for online service
· Collected a new benchmark dataset for evaluating human tracking on dance videos
· Applied for human re-identification patents and integrated the methods into online service

**Vision and Learning Lab, National Taiwan University, Taiwan** *03/2017 - 07/2018*
*Research Assistant*

· Proposed a domain adaptation technique for the egocentric video summarization problem
· Resolved the problem of lacking ground-truth video data with a semi-supervised learning pipeline
· Published research results, attended conferences, and reviewed conference papers
· Teaching assistant for deep learning and computer vision courses, supervised undergraduate students conducting semester projects

**Media IC & System Lab, National Taiwan University, Taiwan** *03/2016 - 01/2017*
*Semester Project*

· Proposed a new benchmark dataset for 6DoF object pose tracking in augmented reality applications
· Designed and implemented 6 experiment baselines on the proposed benchmark dataset

## TEACHING EXPERIENCE

**Deep Learning Crash Course for Master Students**, Lecturer, NTU *07/2018*
**Deep Learning for Computer Vision**, Teaching Assistant, NTU *03/2018*

## PUBLICATIONS

Hsuan-I Ho, Xu Chen, Jie Song, Otmar Hilliges, "**Render In-between: Motion Guided Video Synthesis for Action Interpolation**", BMVC, 2021.

Minho Shim, Hsuan-I Ho, Jinhyung Kim, Dongyoon Wee, "**READ: Reciprocal Attention Discriminator for Image-to-Video Re-Identification**", ECCV, 2020.

Hsuan-I Ho, Minho Shim, Dongyoon Wee, "**Learning from Dances: Pose-invariant Re-identification for Multi-Person Tracking**", ICASSP, 2020.

Hsuan-I Ho, Wei-Chen Chiu, Yu-Chiang Frank Wang, "**Summarizing First-Person Videos from Third Persons' Points of Views**", ECCV, 2018.

Po-Chen Wu, Hsuan-I Ho*, Yueh-Ying Lee*, Hung-Yu Tseng*, Ming-Hsuan Yang, and Shao-Yi Chien, "**A Benchmark Dataset for 6DoF Object Pose Tracking**", ISMAR, 2017.

## SELECTED PROJECTS

**Render In-between: Motion Guided Video Synthesis for Action Interpolation** *2021*
[Code: azuxmioy/Render-In-Between ] [PDF]

· Realized a two-stage video synthesis pipeline for an application of human action interpolation
· Implemented two network components of human motion modeling and 2D neural rendering
· Proposed a new high-frame-rate and high-resolution human action dataset for evaluation

**Reciprocal Attention Discriminator for Image-to-Video person Re-ID** *2020*
[Code: minostauros/READ] [PDF]

· Implemented image-to-video re-ID components in the human tracking system

**DanceReID: Pose-Invariant Person Re-Identification for Dance Videos** *2020*
[Code: azuxmioy/DanceReID] [PDF]

· Implemented a new re-ID pipeline for dance videos and improved the baselines by 7.7mAP
· Proposed a new dance video dataset and benchmark evaluation for human tracking and re-ID

**SMNNet: Spatial-temporal Multimodal Network for Gesture Recognition** *2019*
[Code: azuxmioy/SMNet] [PDF]

· Developed an end-to-end multi-modality model for gesture recognition with an accuracy of 91.2%

**FPVSum: First-Person Video Summarization dataset** *2018*
[Code: azuxmioy/fpvsum] [PDF]

· Proposed a benchmark dataset and annotation tools for first-person video summarization

## TECHNICAL SKILLS

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|---|---|
| **Programming** | Python, C/C++, MATLAB |
| **Scientific Libraries** | PyTorch, TensorFlow, OpenCV, NumPy, Scikit-learn, Libigl |
| **Software & Tools** | Linux OS, Git, LaTeX, HTML & CSS, Blender, Docker |
| **Domain Knowledge** | Pose Estimation, Person Re-ID, Neural Rendering, Motion Modeling general computer vision tasks and deep learning models, tricks |

## HONORS

Appier Artificial Intelligence and Information Technology Research Scholarship *2018*
1st Prize of MOST Generative Adversarial Networks Project Competition *2017*
3rd Prize of 2016 Agrithon (Agricultural Hackathon) in Taiwan *2016*