

YIFEI HUANG

Institute of Industrial Science, The University of Tokyo
Ee402, Sato Laboratory ◊ 4-6-1 Komaba, Meguro-ku, Tokyo ◊ 153-8505, Japan
☎ 090-5542-1953 | ✉ hyf@iis.u-tokyo.ac.jp | 🌐 hyf015.github.io

WORK

The University of Tokyo, Japan

April 2021 - now

Project Research Associate

Research interest: computer vision, video analysis, applications using gaze

EDUCATION

The University of Tokyo, Japan

April 2018 - March 2021

Ph.D. in Information Science & Technology

Graduate School of Information Science and Technology

Supervisor: Prof. Yoichi Sato

Research interest: first-person computer vision, action recognition, action segmentation, gaze prediction, saliency prediction

The University of Tokyo, Japan

October 2015 - March 2018

M.Sc. in Information & Computer Engineering

Graduate School of Information Science and Technology

Supervisor: Prof. Yoichi Sato

Research interest: first-person computer vision, action recognition, action segmentation, gaze prediction, saliency prediction

Shanghai Jiao Tong University, China

September 2011 - June 2015

B.Sc. in Automation, IEEE honor class

School of Electronics, Information and Electrical Engineering

Supervisor: Assoc. Prof. Chongyang Zhang

Graduated with postgraduate recommendation.

EXPERIENCE

Sensetime Autonomous Driving

July 2020 - Nov 2020

Internship

Shanghai, China

- Supervisor: Dr. Yikang Li
- Lidar-image fusion for 3D object detection in autonomous driving
Propose a multi-modal Transformer-based method, increased Lidar mAP from 81.4% to 82.9% using images on Kitty.
- Return offer

Omron Sinic X

April 2020 - June 2020

Internship

Tokyo, Japan

- Supervisor: Dr. Ryo Yonetani and Dr. Felix von Drigalski

- Robot in-hand 6D pose estimation using vision and tactile sensors
In charge of the vision based estimation part, developed particle filter based approach to estimate 6D object pose in robot hand
- Publication in ICRA 2021

Carnegie Mellon University
Visiting Scholar

April 2019 - July 2019
Pittsburgh, PA, United States

- Supervisor: Assoc. Prof. Kris Kitani
- Mentor: Nicholas Rhinehart, Ben Newman
- Project: Gaze prediction & forecasting under teleoperation environment
Participate in collecting Human-robot interaction dataset. Develop a fusion network based on novel assimilation modules that integrates vision and robot control signals for gaze prediction.

Huawei Japan Research Center
Internship

June 2017 - March 2018
Tokyo, Japan

- Supervisor: Dr. Bo Zheng
- the 3D face relighting feature in P20 smartphone.
Accelerate the demo by 100% using multi-processing, enabling the demo to pass the internal evaluation and then deployed in the P20 smartphone.
- Return offer

DJI Japan
Internship

December 2017 - January 2018
Tokyo, Japan

- Supervisor: Dr. Ming Shao
- Generating HDR image using multiple images, applied filtering and interpolation to reduce the negative effect caused by the shake of camera.
- Return offer

University of British Columbia
Exchange Student

July 2012 - August 2012
Vancouver, BC, Canada

- English language training

PUBLICATIONS (PAPERS IN SUBMISSION NOT INCLUDED)

- [1] **Yifei Huang**, Yusuke Sugano, and Yoichi Sato. “Improving Action Segmentation via Graph Based Temporal Reasoning”. In: *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)* (2020).
- [2] **Yifei Huang**, Minjie Cai, Zhenqiang Li, and Yoichi Sato. “Mutual Context Network for Jointly Estimating Egocentric Gaze and Actions”. In: *IEEE Transactions on Image Processing* (2020).
- [3] **Yifei Huang**, Minjie Cai, Kera Hiroshi, Ruo Yonetani, Keita Higuchi, and Yoichi Sato. “An Ego-Vision System for Discovering Human Joint Attention”. In: *IEEE Transactions on Human-Machine Systems* (2020).
- [4] **Yifei Huang**, Minjie Cai, Zhenqiang Li, and Yoichi Sato. “Predicting Gaze in Egocentric Video by Learning Task-dependent Attention Transition”. In: *European Conference on Computer Vision (ECCV)* (2018). (**oral presentation, acceptance rate 2%**).
- [5] **Yifei Huang**, Minjie Cai, Hiroshi Kera, Ryo Yonetani, Keita Higuchi, and Yoichi Sato. “Temporal Localization and Spatial Segmentation of Joint Attention in Multiple First-Person Videos”. In: *Computer Vision Workshop (ICCVW), 2017 IEEE International Conference on* (2017). (oral presentation), pp. 2313–2321.

- [6] **Yifei Huang**, Lijin Yang, Lin Gu, Yoichi Sato, and Tatsuya Harada. “Leveraging Human Selective Attention for Medical Image Analysis with Limited Training Data”. In: *British Machine Vision Conference (BMVC)* (2021).
- [7] Lijin Yang, **Yifei Huang**, Yusuke Sugano, and Yoichi Sato. “Interact before Align: Leveraging Cross-Modal Knowledge for Domain Adaptive Action Recognition”. In: *To appear in IEEE Conference on Computer Vision and Pattern Recognition (CVPR)* (2022).
- [8] Hong Chen, **Yifei Huang**, and Hideki Nakayama. “Commonsense Knowledge Aware Concept Selection For Diverse and Informative Visual Storytelling”. In: *AAAI* (2021).
- [9] Lijin Yang, **Yifei Huang**, Sugano Yusuke, and Yoichi Sato. “Stacked Temporal Attention: Improving First-person Action Recognition by Emphasizing Discriminative Clips”. In: *British Machine Vision Conference (BMVC)* (2021).
- [10] Hong Chen, **Yifei Huang**, and Hideki Nakayama. “Semantic Aware Attention Based Deep Object Co-segmentation”. In: *Asian Conference on Computer Vision (ACCV)* (2018).
- [11] Qing Zhang, **Yifei Huang**, George Chernyshov, Juling Li, Yun Suen Pai, and Kai Kunze. “GazeSync: Eye Movement Transfer Using an Optical Eye Tracker and Monochrome Liquid Crystal Displays”. In: *ACM Conference on Intelligent User Interfaces (IUI)* (2022).
- [12] Felix von Drigalski, Kenosuke Hayashi, **Yifei Huang**, Ryo Yonetani, Masashi Hamaya, Kazutoshi Tanaka, and Yoshihisa Ijiri. “Precise Multi-Modal In-Hand Pose Estimation using Low-Precision Sensors for Robotic Assembly”. In: *International Conference on Robotics and Automation (ICRA)* (2021).
- [13] Yang Liu, Lei Zhou, Xiao Bai, **Yifei Huang**, Lin Gu, Jun Zhou, and Tatsuya Harada. “Goal-Oriented Gaze Estimation for Zero-Shot Learning”. In: *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)* (2021).
- [14] Zhenqiang Li, **Yifei Huang**, Minjie Cai, and Yoichi Sato. “Manipulation-skill Assessment from Videos with Spatial Attention Network”. In: *2019 IEEE International Conference on Computer Vision Workshop (ICCVW)* (2019).
- [15] Guangming Wu, Zhiling Guo, Zekun Cai, Xiaodan Shi, Xin Ding, **Yifei Huang**, Yimin Guo, Yinqiang Zheng, and Ryosuke Shibasaki. “Learn to Recover Visible Color for Video Surveillance in a Day”. In: *European Conference on Computer Vision (ECCV)* (2020). (**oral presentation, acceptance rate 3%**).
- [16] Zhenqiang Li, Weimin Wang, Zuoyue Li, **Yifei Huang**, and Yoichi Sato. “Toward Visually Explaining Video Classification Networks by Perturbation-based Method”. In: *IEEE Winter Conference on Applications of Computer Vision (WACV)* (2021).

HONORS

Global Creative Leader (GCL) Fellowship , The University of Tokyo, Japan	2018 – 2021
Outstanding graduation thesis , Shanghai Jiao Tong University, China	2015
National Endeavour Fellowship , Shanghai Jiao Tong University, China	2012 – 2014

LANGUAGES

Chinese	Mother language.
English	TOEFL 105/120 (2018), TOEIC 980/990 (2018)
Japanese	JLPT N2 (2014)

REFERENCES

Prof. Yoichi Sato
 Institute of Industrial Science, the University of Tokyo.
<http://www.hci.iis.u-tokyo.ac.jp/~ysato/>

ysato@iis.u-tokyo.ac.jp

Assoc. Prof. Kris Kitani

Robotics Institute, School of Computer Science, Carnegie Mellon University

<http://www.cs.cmu.edu/~kkitani/>

kkitani@cmu.edu

Assoc. Prof. Yusuke Sugano

Institute of Industrial Science, the University of Tokyo.

<https://www.yusuke-sugano.info/>

sugano@iis.u-tokyo.ac.jp