

Yu-Jhe Li

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Research Interests

Computer Vision and Machine learning, particularly in multi-modal visual representation learning in machine perception and generation, unsupervised domain adaptation, and data/label efficiency learning in generative AI, autonomous systems, and XR applications.

Education

Carnegie Mellon University Ph.D. in Electrical and Computer Engineering (Advisor: Prof. Kris Kitani)	<i>Aug. 2020 - Sep. 2023</i> GPA: 4.0/4.0
National Taiwan University M.S. in Communication Engineering (Advisor: Prof. Yu-Chiang Frank Wang)	<i>Sep. 2017 - Jan. 2019</i> GPA: 4.18/4.3
National Tsing Hua University B.S. in Electrical Engineering and Computer Science	<i>Sep. 2013 - Jan. 2017</i> Major GPA: 4.09/4.3

Work and Research Experience

Adobe <i>Research Scientist at Applied Science, Firefly</i> <ul style="list-style-type: none">• Multiple subject/layer/layout controls for personalized image generation.• Multi-subject zero-shot ID-preserved image generation/personalization.• Multi-concept image generation with multi-modal large language models (MLLM).	<i>April. 2024 - Present</i> <i>San Jose, CA, USA</i>
Microsoft <i>Research Scientist at Responsible and OpenAI Research (ROAR)</i> <ul style="list-style-type: none">• Cross-modality content moderation in generative AI and responsible AI.	<i>Dec. 2023 - April. 2024</i> <i>Redmond, WA, USA</i>
Adobe <i>Research Intern, working with Xinyang Zhang, Xin Lu, and Ajinkya Kale</i> <ul style="list-style-type: none">• Strengthen the generalization of the segmentation model to unseen domains.	<i>May. 2023 - Nov. 2023</i> <i>San Jose, CA, USA</i>
The Robotics Institute, Carnegie Mellon University <i>Ph.D. student and Research Associate, working with Kris Kitani</i> <ul style="list-style-type: none">• 3D human pose estimation with multi-view depth cameras.• Radar azimuth super-resolution for vehicle detection.• Lidar-Radar fusion for vehicle detection.• Domain-specific segmentation model for crack and rust detection.• Multi-camera multi-person tracking for in-the-wild data.• Clothing color invariant representation learning.	<i>Aug. 2019 - Sep. 2023</i> <i>Pittsburgh, PA, USA</i>
Meta <i>Research Intern, working with Tao Xu, Bichen Wu, Albert Pumarola</i> <ul style="list-style-type: none">• GAN inversion of style-based neural radiance fields (NeRFs).• Contrastive latent diffusion for latent-based neural radiance fields (NeRFs).	<i>May. 2022 - Aug. 2022</i> <i>Burlingame, CA, USA</i>
Facebook (now Meta) <i>Research Intern, working with Xiaoliang Dai, Chih-Yao Ma, Kan Chen</i> <ul style="list-style-type: none">• Unsupervised domain adaptation in object detection.	<i>May. 2021 - Aug. 2021</i> <i>Menlo Park, CA, USA</i>

- Unsupervised learning and domain adaptation in re-identification via unsupervised pose disentanglement.
- Learned resolution-invariant representations for cross-resolution tasks.

Selected Publications (full list here)

Conference Papers:

1. Jinyung Park, **Yu-Jhe Li**, Kris Kitani. “Flexible Depth Completion for Sparse and Varying Point Densities.” *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*. Jun 2024.
2. **Yu-Jhe Li**, Shawn Hunt, Jinyung Park, Matthew O’Toole, Kris Kitani. “Azimuth Super-Resolution for Autonomous Driving.” *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*. Jun 2023.
3. **Yu-Jhe Li**, Matthew O’Toole, Kris Kitani. “ST-MVDNet++: Improve Vehicle Detection with Lidar-Radar Geometrical Augmentation via Self-Training.” *IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*. June 2023.
4. Takehiko Ohkawa, **Yu-Jhe Li**, Qichen Fu, Ryosuke Furuta, Kris Kitani, and Yoichi Sato. “Domain Adaptive Hand Keypoint and Pixel Localization in the Wild.” *European Conference on Computer Vision (ECCV)*. Oct 2022.
5. **Yu-Jhe Li**, Jinyung Park, Matthew O’Toole, Kris Kitani. “Modality-Agnostic Learning for Radar-Lidar Fusion in Vehicle Detection.” *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*. Jun 2022.
6. **Yu-Jhe Li**, Xiaoliang Dai, Chih-Yao Ma, Yen-Cheng Liu, Kan Chen, Bichen Wu, Zijian He, Kris Kitani, Peter Vajda. “Cross-Domain Adaptive Teacher for Object Detection.” *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*. Jun 2022.
7. **Yu-Jhe Li**, Xinshuo Weng, Yan Xu, and Kris Kitani. “Visio-Temporal Attention for Multi-Camera Multi-Target Association.” *IEEE International Conference on Computer Vision (ICCV)*. Oct. 2021.
8. Yan Xu, **Yu-Jhe Li**, Xinshuo Weng, and Kris Kitani. “Wide-Baseline Multi-Camera Calibration using Person Re-Identification.” *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*. Jun 2021.
9. **Yu-Jhe Li**, Xinshuo Weng, Kris Kitani. “Learning Shape Representations for Person Re-identification under Clothing Change.” *Winter Conference on Applications of Computer Vision (WACV)*. Jan 2021.
10. Yen-Ting Liu, **Yu-Jhe Li**, and Yu-Chiang Frank Wang. “Transforming Video Concepts into Video Summarization.” *Asian Conference on Computer Vision (ACCV)*. Nov 2020.
11. **Yu-Jhe Li**, Ci-Siang Lin, Yan-Bo Lin, and Yu-Chiang Frank Wang. “Cross-Dataset Person Re-Identification via Unsupervised Pose Disentanglement and Adaptation.” *IEEE International Conference on Computer Vision (ICCV)*. Nov 2019.
12. **Yu-Jhe Li***, Yun-Chun Chen*, Yen-Yu Lin, Xiaofei Du, and Yu-Chiang Frank Wang. “Recover and Identify: Generative Dual Model for Cross-Resolution Person Re-Identification.” *IEEE International Conference on Computer Vision (ICCV)*. Nov 2019. (* indicates equal contribution)
13. Wen-Hsuan Chu, **Yu-Jhe Li**, Jing-Cheng Chang, and Yu-Chiang Frank Wang. “Spot and Learn: A Maximum-Entropy Image Patch Sampler for Few-Shot Classification.” *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*. Jun 2019.
14. Yan-Bo Lin, **Yu-Jhe Li**, and Yu-Chiang Frank Wang. “Dual-modality Seq2seq Network for Audio-Visual Event Localization.” *IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*. May 2019.
15. Yun-Chun Chen*, **Yu-Jhe Li***, XiaoFei Du, and Yu-Chiang Frank Wang. “Learning Resolution-Invariant Deep Representations for Person Re-Identification.” *AAAI Conference on Artificial Intelligence (AAAI)*. Jan 2019. (* indicates equal contribution)
16. **Yu-Jhe Li**, Hsin-Yu Chang, Yu-Jing Lin, Po-Wei Wu, and Yu-Chiang Frank Wang. “Deep Reinforcement Learning for Playing 2.5D Fighting Games.” *IEEE International Conference on Image Processing (ICIP)*. Oct 2018.
17. **Yu-Jhe Li**, Fu-En Yang, Yen-Cheng Liu, Yu-Ying Yeh, Xiao-Fei Du, and Yu-Chiang Frank Wang. “Adaptation and Re-Identification Network: An Unsupervised Deep Transfer Learning Approach to Person Re-Identification.” *IEEE Conference on Computer Vision and Pattern Recognition (CVPR) Workshops*. Jun 2018.

Pre-prints or reports:

- **Yu-Jhe Li**, Xinyang Zhang, Kun Wan, Lantao Yu, Ajinkya Kale, Xin Lu. “Prompt-Guided Mask Proposal for Two-Stage Open-Vocabulary Segmentation.” (*In Arxiv 2024*)
- **Yu-Jhe Li**, Yan Xu, Rawal Khirodkar, Jinyung Park, Kris Kitani. “Multi-Person 3D Pose Estimation from Multi-View Uncalibrated Depth Cameras.” (*In Arxiv 2024*)
- **Yu-Jhe Li**, Tao Xu, Ji Hou, Bichen Wu, Xiaoliang Dai, Albert Pumarola, Peizhao Zhang, Peter Vajda, Kris Kitani. “3D-CLFusion: Fast Text-to-3D Rendering with Contrastive Latent Diffusion.” (*In Arxiv 2023*)
- **Yu-Jhe Li**, Tao Xu, Bichen Wu, Ningyuan Zheng, Xiaoliang Dai, Albert Pumarola, Peizhao Zhang, Peter Vajda, Kris Kitani. “3D-Aware Encoding for Style-based Neural Radiance Fields.” (*In Arxiv 2022*)

Selected Academic Honors

- Qualcomm Innovation Fellowship, 2022. USA
- Best Industrial Impact Paper Award, *IEEE ICIP 2021*. USA

Selected Teaching Experience

Carnegie Mellon University

Course Teaching Assistant

- 18-661: Introduction to Machine Learning for Engineers *Spring 2022*
- 18-793: Image and Video Processing *Fall 2021*

Professional activity

- **Conference Reviewer or Program Committee:**
 - IEEE Conference on Computer Vision and Pattern Recognition (CVPR)
 - IEEE International Conference on Computer Vision (ICCV)
 - International Conference on Learning Representation (ICLR)
 - Neural Information Processing Systems (NeurIPS)
 - International Conference on Machine Learning (ICML)
 - Winter Conference on Applications of Computer Vision (WACV)
 - European Conference on Computer Vision (ECCV)
 - Asian Conference on Computer Vision (ACCV)
- **Journal Reviewer:**
 - Transactions on Pattern Analysis and Machine Intelligence (TPAMI)
 - Transactions on Image Processing (TIP)