

# YU-JHE LI

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## RESEARCH INTERESTS

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Computer Vision and Machine Learning, particularly representation learning, domain adaptation, and 2D multi-object tracking with multiple cameras.

## EDUCATION

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**Carnegie Mellon University, Pittsburgh, PA** *Aug. 2020 - Current*  
Ph.D. in Electrical and Computer Engineering (Advisor: Prof. Kris Kitani)

**National Taiwan University, Taipei, Taiwan** *Sep. 2017 - Jan. 2019*  
M.S. in Communication Engineering (Advisor: Prof. Frank Wang) Major GPA: 4.18/4.3

**National Tsing Hua University, Hsinchu, Taiwan** *Sep. 2013 - Jan. 2017*  
B.S. in Electrical Engineering and Computer Science Major GPA: 4.09/4.3

## RESEARCH EXPERIENCE

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**The Robotics Institute, Carnegie Mellon University** *Sep. 2020 - Current*  
*Ph.D. student working with Prof. Kris Kitani* *Pittsburgh, PA, USA*

- Multi-camera multi-object tracking.
- Designed and applied segmentation model for crack and rust detection.

**Facebook Reality Labs, Facebook Research** *May. 2021 - Current*  
*Research Intern working with Xiaoliang Dai, Chih-Yao Ma, Kan Chen* *Menlo Park, CA, USA*

- Unsupervised domain adaptation in object detection.

**The Robotics Institute, Carnegie Mellon University** *Sep. 2019 - Aug. 2020*  
*Research Associate working with Prof. Kris Kitani* *Pittsburgh, PA, USA*

- Built cross-camera tracking model for workers in construction sites using location, motion, and appearance deep features, followed by action recognition.
- Learned clothing color invariant representations via adversarial learning and body structure disentanglement for person re-identification.

**Vision and Learning Lab, National Taiwan University** *Sep. 2017 - Jul. 2019*  
*Graduate Research Assistant working with Prof. Yu-Chiang Frank Wang* *Taipei, Taiwan*

- Built novel deep framework for unsupervised learning and domain adaptation in re-identification via unsupervised pose disentanglement.
- Learned resolution-invariant representations for cross-resolution tasks via adversarial learning of super-resolution and image generation.

## PUBLICATIONS

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### Pre-prints or reports:

- **Yu-Jhe Li\***, Yun-Chun Chen\*, Yen-Yu Lin, and Yu-Chiang Frank Wang. “Cross-Resolution Adversarial Dual Network for Person Re-Identification and Beyond.” (*In Arxiv 2020*) (\* indicates equal contribution)

## Conference Papers:

1. **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.
2. Jinhyung Park, Yi-Chun Chen, **Yu-Jhe Li**, and Kris Kitani. “Crack Detection and Refinement via Deep Reinforcement Learning.” *IEEE International Conference on Image Processing (ICIP)*. Oct 2021.
3. 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.
4. **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.
5. Jia-Wei Yan, Ci-Siang Lin, Fu-En Yang, **Yu-Jhe Li**, and Yu-Chiang Frank Wang. “Semantics-Guided Representation Learning with Applications to Visual Synthesis.” *International Conference on Pattern Recognition (ICPR)*. Jan 2021.
6. 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.
7. **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.
8. **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)
9. Yen-Ting Liu, **Yu-Jhe Li**, Fu-En Yang, Shang-Fu Chen, and Yu-Chiang Frank Wang. “Learning Hierarchical Self-Attention for Video Summarization.” *IEEE International Conference on Image Processing (ICIP)*. Sep 2019.
10. 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.
11. 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.
12. 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)
13. **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.
14. **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.
15. Yun-Chun Chen, **Yu-Jhe Li**, Aragorn Tseng, and Tsungnan Lin. “Deep Learning for Malicious Flow Detection.” *IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC)*. Oct 2017.

## WORK EXPERIENCE

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### Internships

- Software Engineer at Dragon Cloud AI Inc., Winter 2018. *San Francisco, USA*
- Software Engineer at Trend Micro Inc., Summer 2017. *Taipei, Taiwan*

## ACADEMIC HONORS

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- **Best Master Thesis Award, TAAI 2019.** *Taipei, Taiwan*
- **Best Master Thesis Award, IPPR 2019.** *Taipei, Taiwan*
- **Foxconn Technology Research Award, Foxconn Technology 2019.** *Taipei, Taiwan*
- **NTU Academic Outstanding Award, National Taiwan University 2018.** *Taipei, Taiwan*
- **Student Paper Award, CVGIP 2018.** *Tainan, Taiwan*
- **Second Place, Nvidia GTC 2018 research poster competition.** *Taipei, Taiwan*

## PROFESSIONAL ACTIVITY

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- **Conference Reviewer or Program Committee:**
  - IEEE Conference on Computer Vision and Pattern Recognition (CVPR) (2020, 2021)
  - IEEE International Conference on Computer Vision (ICCV) (2021)
  - Winter Conference on Applications of Computer Vision (WACV) (2021)
  - European Conference on Computer Vision (ECCV) (2020)
  - Asian Conference on Computer Vision (ACCV) (2020)
- **Journal Reviewer:**
  - Transactions on Pattern Analysis and Machine Intelligence (2021)
- **Invited Speaker** at The 3rd Augmented Intelligence and Interaction (AII) Workshop. *Jul. 2019*
- **Invited Teaching Assistant** at AI summer school in Hsinchu. *Aug. 2018*