

Fu-En Yang

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Research Interests

○ **Computer vision** ○ **Deep learning** ○ **Machine learning**.

My research interests include using deep learning to solve computer vision tasks such as image synthesis, video generation, representation learning, cross-dataset transfer learning, meta-learning for few-shot classification, zero-shot learning, and self-supervised learning.

Education

- Sept. 2020 - **PhD Student**, National Taiwan University (NTU), Taipei, Taiwan.
Present Graduate Institute of Communication Engineering (GICE)
Advisor: Prof. Yu-Chiang Frank Wang [📄 link](#)
- Sept. 2018 - **Master Student**, National Taiwan University (NTU), Taipei, Taiwan.
Sept. 2020 Graduate Institute of Communication Engineering (GICE)
Advisor: Prof. Yu-Chiang Frank Wang [📄 link](#)
○ Overall GPA: 4.2/4.3
○ Ranking: 21/110
- Sept. 2014 - **Bachelor of Science**, National Taiwan University (NTU), Taipei, Taiwan.
Jun. 2018 Department of Electrical Engineering (EE)
○ Overall GPA: 4.12/4.3
○ Ranking: 26/184

Research & Industrial Experiences

- Sept. 2017 - **Vision and Learning Lab**, NTU, Taipei, Taiwan.
Present **PhD Student & Master Student & Undergraduate Research Student**
Advisor: Prof. Yu-Chiang Frank Wang [📄 link](#)
- 1. Style Transfer & Domain Adaptation**
○ Published as a journal paper in the IEEE Transactions on Image Processing (TIP) [📄](#).
 - 2. Video Generation and Translation**
○ Accepted as conference papers in CVPR-2020 [📄](#) & ICPR-2020 [📄](#)
 - 3. Few-Shot & Zero-Shot Learning**
○ Accepted as conference papers in WACV-2022 [📄](#), ICIP-2021 [📄](#) & Submitted to IJCV-2021
 - 4. Domain Generalization**
○ Accepted as a conference paper in NeurIPS-2021 as spotlight presentation (top 3%) [📄](#)
 - 5. Federated Learning**
○ In submission, 2022
- Sept. 2020 - **AICS PhD Fellowship**, ASUS Intelligent Cloud Services (AICS), Taipei, Taiwan &
Oct. 2022 Singapore, Singapore [📄 link](#).
Student Researcher for Computer Vision Applications mentored by Prof. Stefan Winkler [📄 link](#)
○ Cross-Domain Medical Image Analysis [📄 Paper](#)
○ Privacy-Preserving Medical Image Analysis

Publications

- WACV 2023 **Self-Supervised Pyramid Representation Learning for Multi-Label Visual Analysis and Beyond.**
Cheng-Yen Hsieh, Chih-Jung Chang, Fu-En Yang, and Yu-Chiang Frank Wang
IEEE Winter Conference on Applications of Computer Vision (WACV), Jan 2023 [📄 Paper](#)

- NeurIPS 2021 Spotlight **Adversarial Teacher-Student Representation Learning for Domain Generalization.**
Fu-En Yang, Yuan-Chia Cheng, Zu-Yun Shiao, and Yu-Chiang Frank Wang
Conference on Neural Information Processing Systems (NeurIPS), December 2021 [i Paper](#)
(top 3% for spotlight presentation)
- CVPR 2021 **LayoutTransformer: Scene Layout Generation with Conceptual and Spatial Diversity.**
Cheng-Fu Yang, Wan-Cyuan Fan, Fu-En Yang, and Yu-Chiang Frank Wang
IEEE Conference on Computer Vision and Pattern Recognition (CVPR), June 2021 [i Paper](#)
- WACV 2022 **A Pixel-Level Meta-Learner for Weakly Supervised Few-Shot Semantic Segmentation.**
Yuan-Hao Lee, Fu-En Yang, and Yu-Chiang Frank Wang
IEEE Winter Conference on Applications of Computer Vision (WACV), Jan 2022 [i Paper](#)
- ICIP 2021 **Few-Shot Classification in Unseen Domains by Episodic Meta-Learning Across Visual Domains.**
Yuan-Chia Cheng, Ci-Siang Lin, Fu-En Yang, and Yu-Chiang Frank Wang
IEEE International Conference on Image Processing (ICIP), September 2021 [i Paper](#)
- CVPR 2020 **Learning Identity-Invariant Motion Representations for Cross-ID Face Reenactment.**
Po-Hsiang Huang, Fu-En Yang, and Yu-Chiang Frank Wang
IEEE Conference on Computer Vision and Pattern Recognition (CVPR), June 2020 [i Paper](#)
- ICPR 2020 **Dual-MTGAN: Stochastic and Deterministic Motion Transfer for Image-to-Video Synthesis.**
Fu-En Yang*, Jing-Cheng Chang*, Yuan-Hao Lee, and Yu-Chiang Frank Wang
(* indicates equal contribution)
IEEE International Conference on Pattern Recognition (ICPR), Jan 2021 [i Paper](#)
- ICPR 2020 **Semantics-Guided Representation Learning with Applications to Visual Synthesis.**
Jia-Wei Yan, Ci-Siang Lin, Fu-En Yang, Yu-Jhe Li, and Yu-Chiang Frank Wang
IEEE International Conference on Pattern Recognition (ICPR), Jan 2021 [i Paper](#)
- TIP 2019 **A Multi-domain and Multi-modal Representation Disentangler for Cross-Domain Image Manipulation and Classification.**
Fu-En Yang*, Jing-Cheng Chang*, Chung-Chi Tsai, and Yu-Chiang Frank Wang
(* indicates equal contribution)
IEEE Transactions on Image Processing (TIP), 2019 [i Paper](#)
- ICIP 2019 **Learning Hierarchical Self-Attention for Video Summarization.**
Yen-Ting Liu, Yu-Jhe Li, Fu-En Yang, Shang-Fu Chen, and Yu-Chiang Frank Wang
IEEE International Conference on Image Processing (ICIP), September 2019 [i Paper](#)
- CVPRW 2018 **Adaptation and Re-Identification Network: An Unsupervised Deep Transfer Learning Approach to Person Re-Identification.**
Yu-Jhe Li, Fu-En Yang, Yen-Cheng Liu, Yu-Yin Yeh, Xiaofei Du, and Yu-Chiang Frank Wang
IEEE Conference on Computer Vision and Pattern Recognition (CVPR) workshop, June 2018
[i Paper](#)

- In submission **Server-Client Mutual Alignment for Unsupervised Cross-Domain Federated Learning.**
Fu-En Yang, Stefan Winkler, and Yu-Chiang Frank Wang
In submission, 2022
- Under review **Semantics-Guided Intra-Category Knowledge Transfer for Generalized Zero-Shot Learning.**
Fu-En Yang, Yuan-Hao Lee, Chia-Ching Lin, and Yu-Chiang Frank Wang
Submitted to International Journal of Computer Vision (IJCV), 2022

Academic Services

- Fall 2022 **Conference Reviewer.**
AAAI Conference on Artificial Intelligence (AAAI) 2023
- Fall 2022 **Conference Reviewer.**
Winter Conference on Applications of Computer Vision (WACV) 2023
- Fall 2022 **Conference Reviewer.**
Asian Conference on Computer Vision (ACCV) 2022
- Fall 2021 **Conference Reviewer.**
IEEE Conference on Computer Vision and Pattern Recognition (CVPR) 2022
- Fall 2021 **Conference Reviewer.**
AAAI Conference on Artificial Intelligence (AAAI) 2022
- Fall 2021 **Conference Reviewer.**
Winter Conference on Applications of Computer Vision (WACV) 2022
- Fall 2020 **Conference Reviewer.**
AAAI Conference on Artificial Intelligence (AAAI) 2021
- Spring 2020 **Conference Reviewer.**
IEEE International Conference on Image Processing (ICIP) 2020
- Fall 2019 **Conference Reviewer.**
AAAI Conference on Artificial Intelligence (AAAI) 2020
- Spring 2019 **Teaching Assistant, NTU GICE, Taipei Taiwan.**
Deep Learning for Computer Vision
 - Instructor: Prof. Yu-Chiang Frank Wang
 - Designed, checked and scored homework assignments.
 - Designed the final project.
- Fall 2018 **Teaching Assistant, NTU GIEE, Taipei Taiwan.**
Computer Vision: from recognition to geometry
 - Instructor: Prof. Shao-Yi Chien & Prof. Yu-Chiang Frank Wang
 - Designed and graded programming assignments of 120+ students.

Skills

- Programming Python, C++, Matlab, \LaTeX
- Libraries/Tools PyTorch, Tensorflow, Keras, OpenCV
- Language Chinese (native), English

Selected Courses

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| Mathematics | Calculus, Engineering Mathematics – Linear Algebra, Probability and Statistics, Discrete Mathematics, Engineering Mathematics – Differential Equation, Engineering Mathematics – Complex Variables, Selected Topics in Engineering Mathematics* |
| Programmings | Computer Programming, Data Structure and Programming |
| Applications | Machine Learning*, Deep Learning for Computer Vision*, Computer Vision: from recognition to geometry*, Advanced Digital Signal Processing*, Time-frequency Analysis and Wavelet Transform*, Introduction to Biomedical Informatics*, Data Science*, Introduction to Computer |

* indicates graduate level courses