

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**
- Sept. 2020 - **AICS PhD Program**, ASUS Intelligent Cloud Services (AICS), Taipei, Taiwan [📄 link](#).
Oct. 2022 Student Researcher for computer vision and medical imaging applications mentored by Prof. Yu-Chiang Frank Wang [📄 link](#) and 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](#)

Academic Services

CVPR **Conference Reviewer.**

IEEE Conference on Computer Vision and Pattern Recognition (CVPR) 2023, 2022

AAAI **Conference Reviewer.**

AAAI Conference on Artificial Intelligence (AAAI) 2023, 2022, 2021, 2020

WACV **Conference Reviewer.**

Winter Conference on Applications of Computer Vision (WACV) 2023, 2022

ACCV **Conference Reviewer.**

Asian Conference on Computer Vision (ACCV) 2022

ICIP **Conference Reviewer.**

IEEE International Conference on Image Processing (ICIP) 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

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