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 - Present
PhD Student, National Taiwan University (NTU), Taipei, Taiwan.
Graduate Institute of Communication Engineering (GICE)
Advisor: Prof. Yu-Chiang Frank Wang ℹ link

Sept. 2018 - Sept. 2020
Master Student, National Taiwan University (NTU), Taipei, Taiwan.
Graduate Institute of Communication Engineering (GICE)
Advisor: Prof. Yu-Chiang Frank Wang ℹ link
○ Overall GPA: 4.2/4.3
○ Ranking: 21/110

Sept. 2014 - Jun. 2018
Bachelor of Science, National Taiwan University (NTU), Taipei, Taiwan.
Department of Electrical Engineering (EE)
○ Overall GPA: 4.12/4.3
○ Ranking: 26/184

Research & Industrial Experiences

Sept. 2017 - Present
Vision and Learning Lab, NTU, Taipei, Taiwan.
PhD Student & Master Student & Undergraduate Research Student
Advisor: Prof. Yu-Chiang Frank Wang ℹ link
1. Style Transfer & Domain Adaptation
○ Published as a journal paper in the IEEE Transactions on Image Processing (TIP) ℹ.
2. Video Generation and Translation
○ Accepted as conference papers in CVPR-2020 ℹ & ICPR-2020 ℹ
3. Few-Shot & Zero-Shot Learning
○ Accepted as conference papers in WACV-2022 ℹ, ICIP-2021 ℹ & Submitted to IJCV-2021
4. Domain Generalization
○ Accepted as a conference paper in NeurIPS-2021 as spotlight presentation (top 3%) ℹ
5. Federated Learning
○ Under review

Sept. 2020 - Oct. 2022
AICS PhD Fellowship, ASUS Intelligent Cloud Services (AICS), Taipei, Taiwan & Singapore, Singapore ℹ link.
Student Researcher for Computer Vision Applications mentored by Prof. Stefan Winkler ℹ link
○ Cross-Domain Medical Image Analysis ℹ 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 ℹ Paper

NeurIPS 2021 Spotlight	**Adversarial Teacher-Student Representation Learning for Domain Generalization**. Fu-En Yang, Yuan-Chia Cheng, Zu-Yun Shiau, and Yu-Chiang Frank Wang Conference on Neural Information Processing Systems (NeurIPS), December 2021 ⓘ 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 ⓘ 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 ⓘ 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 ⓘ 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 ⓘ 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 ⓘ 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 ⓘ 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 ⓘ 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 ⓘ 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 ⓘ Paper

Under submission	**Server-Client Mutual Alignment for Unsupervised Cross-Domain Federated Learning**. Fu-En Yang, Stefan Winkler, and Yu-Chiang Frank Wang Under submission, 2022
Under submission	**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

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