Fu-En Yang

✆ (+886) 932-907-295
✉ f07942077@ntu.edu.tw
🖥 fuenyang1127.github.io/

Research Interests

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

My research interests include using deep learning to solve computer vision tasks such as representation learning, transfer learning, few/zero-shot classification, federated learning, parameter-efficient model tuning, and large-scale vision & language models.

Education

Sept. 2018 - Present
PhD Student, National Taiwan University (NTU), Taipei, Taiwan.
Graduate Institute of Communication Engineering (GICE)
Vision and Learning Laboratory 🛈
Advisor: Prof. Yu-Chiang Frank Wang 🛈 link

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

Feb. 2023 - Present
Research Intern, NVIDIA Research 🛈 link.
Research intern for computer vision and deep learning supervised by
Prof. Yu-Chiang Frank Wang 🛈 link
○ Parameter-efficient model personalization in federated learning
○ Vision-language diffusion models for open-vocabulary and language-driven visual analysis

Sept. 2018 - Present
Ph.D. Research, Vision and Learning Laboratory 🛈, NTU, Taipei, Taiwan.
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, 2023

Sept. 2020 - Oct. 2022
AICS PhD Program, ASUS Intelligent Cloud Services (AICS) 🛈 link.
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

Under review 2023
Efficient Model Personalization in Federated Learning via Client-Specific Prompt Generation.
Fu-En Yang, Chien-Yi Wang, and Yu-Chiang Frank Wang
Under review, 2023

IJCV 2023   **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
International Journal of Computer Vision (IJCV), 2023

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

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

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

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 2020   **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), 2020   ⓘ Paper

ICIP 2019	**Learning Hierarchical Self-Attention for Video Summarization**.
	Yen-Ting Liu, Yu-Jhe Li, <u>Fu-En Yang</u>, 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, <u>Fu-En Yang</u>, 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

Academic Services

NeurIPS	**Conference Reviewer**.
	Conference on Neural Information Processing Systems (NeurIPS) 2023
CVPR	**Conference Reviewer**.
	IEEE Conference on Computer Vision and Pattern Recognition (CVPR) 2023, 2022
ICCV	**Conference Reviewer**.
	International Conference on Computer Vision (ICCV) 2023
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) 2023, 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.

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