Fu-En Yang

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Research Interests

○ **Artificial Intelligence** ○ **Deep Learning** ○ **Computer Vision**.
My research interests lie in multimodal AI, such as transfer learning, large vision-language models (LVLMs), multimodal understanding & reasoning, video modeling, and VLM agents.

Education

Aug. 2018 - Jul. 2023 **Ph.D.**, National Taiwan University (NTU), Taipei, Taiwan.
Graduate Institute of Communication Engineering (GICE)
Vision and Learning Laboratory
Advisor: Prof. Yu-Chiang Frank Wang link
NTU Presidential Award for Graduate Students link

Sept. 2014 - Aug. 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. 2024 - Present **Research Scientist**, NVIDIA Research link.
Manager: Prof. Yu-Chiang Frank Wang link
○ Multimodal Learning and Vision-Language Models

Feb. 2023 - Aug. 2023 **Research Intern**, NVIDIA Research link.
Manager: Prof. Yu-Chiang Frank Wang link
○ Parameter-efficient model personalization in federated learning (ICCV-2023)
○ Vision-language models for open-vocabulary and language-driven visual analysis

Sept. 2018 - Jul. 2023 **Ph.D. Researcher**, 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 IJCV-2023, WACV-2022, & ICIP-2021
4. Domain Generalization
○ Accepted as a conference paper in NeurIPS-2021 as spotlight presentation (top 3%)
5. Federated Learning
○ Accepted as a conference paper in ICCV-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

ICLR 2024 **RAPPER: Reinforced Rationale-Prompted Paradigm for Natural Language Explanation in Visual Question Answering**.
Kai-Po Chang, Chi-Pin Huang, Wei-Yuan Cheng, Fu-En Yang, Chien-Yi Wang, Yung-Hsuan Lai, and Yu-Chiang Frank Wang
International Conference on Learning Representations (ICLR), May 2024 Paper

AAAI 2024 **Language-Guided Transformer for Federated Multi-Label Classification**.
I-Jieh Liu, Ci-Siang Lin, Fu-En Yang, and Yu-Chiang Frank Wang
Thirty-Eighth AAAI Conference on Artificial Intelligence (AAAI), February 2024 Paper

ICCV 2023 **Efficient Model Personalization in Federated Learning via Client-Specific Prompt Generation**.
Fu-En Yang, Chien-Yi Wang, and Yu-Chiang Frank Wang
IEEE International Conference on Computer Vision (ICCV), October 2023 Paper

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 Paper

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, 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

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) 2024, 2023, 2022

ICML **Conference Reviewer**.
International Conference on Machine Learning (ICML) 2024

ECCV **Conference Reviewer**.
European Conference on Computer Vision (ECCV) 2024

ICCV **Conference Reviewer**.
International Conference on Computer Vision (ICCV) 2023

AAAI **Conference Reviewer**.
AAAI Conference on Artificial Intelligence (AAAI) 2024, 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) 2024, 2022

ICIP **Conference Reviewer**.
IEEE International Conference on Image Processing (ICIP) 2024, 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 and the final project.

Awards

Nov. 2023	Honorable Mention at 2023 TAAI Ph.D. Thesis Award
Sep. 2023	NTU Presidential Award for Graduate Students
Aug. 2023	16th IPPR Best Doctoral Thesis Award

Skills

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