Wan-Cyuan (Chris) Fan

🌐 Personal website: `https://davidhalladay.github.io/`

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Introduction

Currently, I'm a research assistant at National Taiwan University (NTU) in Vision and Learning Lab advised by Prof. Yu-Chiang Frank Wang. My research interests span the fields of Deep Learning (DL) and Computer Vision (CV), particularly multi-modal learning, text-to-image synthesis, x-to-video generation, and text-guided image manipulation.

Education

Sep 2020 – Jan 2022
🔖 **M.Sc. Communication Engineering** at National Taiwan University
in Vision and Learning Lab advised by Yu-Chiang Frank Wang
GPA: 4.15 / 4.3 (first year)

Sep 2015 – June 2020
🔖 **B.Sc. Electrical Engineering** at National Taiwan University
GPA: 3.89 / 4.0

Work Experience

Sep 2022 – Present
🔖 **Research Assistant** in Vision and Learning Lab (VLL) at NTU
advised by Prof. Yu-Chiang Frank Wang
- Build a text guided image manipulation network under weakly supervised setting.
- Learning scene layout generation with spatial and conceptual diversity.

Mar. 2022 – Sep. 2022
🔖 **Research Intern** in Azure Computer Vision Research at Microsoft
- working with Yen-Chun Chen, Dong Dong Chen, Yu Cheng, and Lu Yuan
- Exploring a multi-scale diffusion and denoising strategies of the diffusion method for conditional complex scene image generation.

July 2019 – Aug. 2020
🔖 **Student Research Intern** in Institute of Information Science, Academia Sinica
advised by Prof. Tyng-Luh Liu
- Design models for the long-tailed object detection and instance segmentation task.
- Explore the adaptive batch-wise regularization for image classification under long-tailed and fine-grained distribution.

July 2017 - Jan. 2018
🔖 **Student Intern** in Digital Learning Center, National Taiwan University
- Problem-solving using design thinking and Activity planning.

Research Publications

Pre-prints

1. **Wan-Cyuan Fan**, Yen-Chun Chen, Dong Dong Chen, Yu Cheng, Lu Yuan, Yu-Chiang Frank Wang. "Frido: Feature Pyramid Diffusion for Complex Scene Image Synthesis." In submission, 2022.

2. **Wan-Cyuan Fan**, Cheng-Fu Yang, Chiao-An Yang, Yu-Chiang Frank Wang. "Target-free Text-guided Image Manipulation." In submission, 2022.

3. **Wan-Cyuan Fan**, Cheng-Yao Hong, Yen-Chi Hsu, Tyng-Luh Liu. "IOU-Aware Multi-Expert Cascade Network via Dynamic Ensemble for Long-tailed Object Detection." In submission, 2022.

4. Yen-Chi Hsu, Cheng-Yao Hong, **Wan-Cyuan Fan**, Ming-Sui Lee, Davi Geiger, Tyng-Luh Liu. "ACE: Adaptive Confusion Energy for Natural World Data Distribution." In submission (journal), 2022.

5. **Wan-Cyuan Fan**. "Auto-drawer: Generating and Modifying Images Continually byVisual-Relational Knowledge Graph." Arxiv pre-print, 2019.

Conference Proceedings

1. Cheng-Fu Yang, Yao-Hung Hubert Tsai, **Wan-Cyuan Fan**, Yu-Chiang Frank Wang, Louis-Philippe Morency, Ruslan Salakhutdinov. "Learning Visual-Linguistic Adequacy, Fidelity, and Fluency for Novel Object Captioning." In Proceedings of the Conference on Neural Information Processing Systems (NeurIPS), 2022.

2. Chiao-An Yang, Cheng-Yo Tan, **Wan-Cyuan Fan**, Cheng-Fu Yang, Meng-Lin Wu, Yu-Chiang Frank Wang. "Scene Graph Expansion for Semantics-Guided Image Outpainting." In Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2022.

3. Chih-Chun Yang, **Wan-Cyuan Fan**, Cheng-Fu Yang, Yu-Chiang Frank Wang. "Cross-Modal Mutual Learning for Audio-Visual Speech Recognition and Manipulation." In Proceedings of Thirty-Sixth AAAI Conference on Artificial Intelligence (AAAI), 2022.

4. Cheng-Fu Yang*, **Wan-Cyuan Fan***, Fu-En Yang, Yu-Chiang Frank Wang. "LayoutTransformer: Scene Layout Generation With Conceptual and Spatial Diversity." In Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2021.

5. **Wan-Cyuan Fan**, Cheng-Yao Hong, Yen-Chi Hsu, Tynh-Luh Liu. "Multi-expert heads of Long-tailed Instance Segmentation." Tech. Report of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (ECCV) workshop, 2020.

Miscellaneous Experience

Awards and Achievements

2022	🔖	**Honorable Master Thesis Awards**, The Chinese Image Processing and Pattern Recognition Society, Taiwan.
2021	🔖	**Master Student Research Scholarship**, Novatek Foundation, Taiwan.
2020	🔖	**Top 10 Winner** (World Ranking 7), Large Vocabulary Instance Segmentation Challenge, ECCVw.
2018	🔖	**Third prize**, the Contest of Innovation and Entrepreneurship of Biotechnology of Ministry of Education, Taiwan.
2017	🔖	**First prize**, the Final Competition of the Clinical Application of Medical Electronic Device Course, National Taiwan University.
2016	🔖	**First prize**, the Final Competition of the Clinical Observation and Need Investigation Course, National Taiwan University.

Position of Responsibility

2016-2017	🔖	**Vice leader of Public Relations Department** in the Aboriginal Service Club at National Taiwan University. - Manage the Public Relations Department and host the training courses and 2 days camp for almost 80 members.

Professional Activity

2021-2022   🔖 **Conference Reviewer or Program Commitee**.
Thirty-Sixth Annual Conference on Neural Information Processing Systems (NeurIPS), 2022
Thirty-Seventh AAAI Conference on Artificial Intelligence (AAAI), 2022
IEEE Conference on Computer Vision and Pattern Recognition (CVPR) (2020, 2021)
IEEE International Conference on Computer Vision (ICCV) (2021)
Thirty-Sixth AAAI Conference on Artificial Intelligence (AAAI), 2021

🔖 **Teaching Assistant of the Course for the graduate students**.
Deep Learning for Computer Vision, National Taiwan University (NTU), 2020
Deep Learning for Computer Vision, National Taiwan University (NTU), 2021