

Wan-Cyuan (Chris) Fan



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Education

- Jan. 2022 **Masters of Science**, National Taiwan University (NTU), Taiwan
Data Science and Intelligent Networking, Grad. Institute of Communication Engineering
GPA: 4.11 / 4.3 | **Thesis:** cManiGAN [2], **IPPR 2022 Honorable Master Thesis Award**
Advisor: Prof. Yu-Chiang Frank Wang link
- Sep. 2020 **Bachelor of Science**, National Taiwan University, Taiwan
Department of Electrical Engineering
GPA: 3.98 / 4.3 | **Undergraduate thesis:** LayoutTransformer [8], **CVPR 2021**
Advisor: Prof. Yu-Chiang Frank Wang link


Research and Work Experience

- Sep. 2022 – Present **Research Assistant**, Vision and Learning Lab (VLL) at NTU
advised by Prof. Yu-Chiang Frank Wang
- Building cManiGAN [2], the **pioneering work** for *weakly supervised text guided image manipulation*, co-advised by Dr. Yun-hsuan Sung and Da-Cheng Juan, Google Research
- Proposing LayoutTransformer [8] for *scene layout generation* with spatial and conceptual diversity, **SOTA** on COCO and Visual Genome
- Mar. 2022 – Present **Research Intern**, Azure Computer Vision Research at Microsoft | Bellevue, WA
- Working with Yen-Chun Chen, DongDong Chen, Yu Cheng, and Lu Yuan
- Proposing Frido [1], a multi-scale diffusion model for *conditional complex scene image generation*, achieving **SOTA** on 4 benchmarks
- Fall 2020 and Fall 2021 **Teaching Assistant**, Deep Learning for Computer Vision, NTU
- The most popular graduate-level DL course in NTU (**150+** students each semester).
- Hosting *project seminars* sponsored by **Microsoft Taiwan**, **Deepoi**, and **Inventec**.
- July 2019 – Aug. 2020 **Research Assistant**, Institute of Information Science, Academia Sinica, Taiwan, advised by Prof. Tyng-Luh Liu
- Proposing MEC [3] for the *long-tailed object detection and instance segmentation*, achieving world ranking **7th** in LVIS challenge [9] (**+7** mAP over baseline), ECCV'20
- July 2017 – Jan. 2018 **UI/UX Design Intern**, Digital Learning Center, NTU





Publications (Google scholar profile)

arXiv Pre-prints



- 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." 2022. (paper)
- Wan-Cyuan Fan**, Cheng-Fu Yang, Chiao-An Yang, Yu-Chiang Frank Wang. "Target-free Text-guided Image Manipulation." In submission, 2022. [TODO link]

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." 2022. [TODO link]
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." 2019. ( paper)

Conference Papers

5. Cheng-Fu Yang, Yao-Hung Hubert Tsai, **Wan-Cyuan Fan**, Yu-Chiang Frank Wang, Louis-Philippe Morency, Ruslan Salakhutdinov. "Paraphrasing Is All You Need for Novel Object Captioning." In Proceedings of the Conference on Neural Information Processing Systems (NeurIPS), 2022. ( paper)
6. 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. ( paper)
7. 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. ( paper)
8. 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. ( paper)

Workshop and Miscellaneous


9. **Wan-Cyuan Fan**, Cheng-Yao Hong, Yen-Chi Hsu, Tyng-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. ( paper)
10. **Wan-Cyuan Fan**. "Auto-drawer: Generating and Modifying Images Continually by Visual-Relational Knowledge Graph." Technical report, 2019. ( paper)

Awards and Achievements


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| 2022 |  Honorable Master Thesis Award , The Chinese Image Processing and Pattern Recognition Society, Taiwan. (only 11 recipients in Taiwan)  link |
| 2021 |  Novatek Research Scholarship , 3 recipients in NTU EECS (500+ students)  link |
| 2020 |  7th place , Large Vocabulary Instance Segmentation Challenge, ECCV workshop. (Top 1 among non-industrial teams)  LVIS leaderboard (team: Argus)  Eval.AI  paper |
| 2018 |  Third prize , Innovation and Entrepreneurship in Biotechnology Contest, Ministry of Education, Taiwan.  link  link |

Miscellaneous

Professional Service

- 2020-2022  **Conference Reviewer**. NeurIPS'22, AAAI'22, CVPR'21, ICCV'21, AAAI'21, and CVPR'20

Volunteering

- 2016-2017  **Vice Lead of Public Relations**, Aboriginal Service Club at NTU
 - Teaching science at under-resourced elementary schools in Taitung (1 month each year).