

# Wan-Cyuan (Chris) Fan



Personal website

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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 [4], **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 [4], 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 [3], 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 [1] 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

1. **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]
2. 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 (\* denotes equal contribution.)

3. **Wan-Cyuan Fan**, Yen-Chun Chen, Dongdong Chen, Yu Cheng, Lu Yuan, Yu-Chiang Frank Wang. "Frido: Feature Pyramid Diffusion for Complex Scene Image Synthesis." AAAI, 2023. (  paper)
4. **Wan-Cyuan Fan**, Cheng-Fu Yang, Chiao-An Yang, Yu-Chiang Frank Wang. "Target-free Text-guided Image Manipulation." AAAI, 2023. [TODO link]
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." 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." 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." AAAI (Oral), 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." CVPR, 2021. (  paper)

## Workshop and Miscellaneous


9. **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. (  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 |  <b>Honorable Master Thesis Award</b> , The Chinese Image Processing and Pattern Recognition Society, Taiwan. (only 11 recipients in Taiwan)  link   |
| 2021 |  <b>Novatek Research Scholarship</b> , 3 recipients in NTU EECS (500+ students)  link  |
| 2020 |  <b>7th place</b> , Large Vocabulary Instance Segmentation Challenge, ECCV workshop. (Top 1 among non-industrial teams)  LVIS leaderboard (team: Argus)  EvalAI  paper |
| 2018 |  <b>Third prize</b> , 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).