

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 by Visual-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. "Paraphrasing Is All You Need 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, 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.

Miscellaneous Experience

Awards and Achievements

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| 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

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| 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. |
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Miscellaneous Experience (continued)

Professional Activity

- 2021-2022 ■ **Conference Reviewer or Program Committee.**
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