JIAFENG MAO

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EXPERIENCE

06/2024 - Present
Tokyo, Japan

Research Scientist
CyberAgent AI Lab
- Research on Controllable Image Generation
- Frontier Technology Application for Game, Anime and Advertisement

04/2024 - 03/2025
Tokyo, Japan

Project Researcher
The University of Tokyo
- Mentoring research on image generation & visual understanding

09/2022 - 03/2024
Tokyo, Japan

Internship
CyberAgent AI Lab
- Research on visual content generation

EDUCATION

04/2021 - 03/2024
Japan

Ph.D of Information Science
The University of Tokyo
- Graduate School of Information Science and Technology

04/2019 - 03/2021
Japan

Master of Information Science
The University of Tokyo
- Graduate School of Information Science and Technology

09/2013 - 06/2017
China

Bachelor of Engineering
Huazhong University of Science and Technology
- Automation Engineering, School of Automation

RESEARCH DIRECTIONS

Internal Mechanism Investigation of Generative Models

📅 10/2022 - Present

Keywords: Diffusion models, MM-DiT and inference dynamics
- Training-free Location-aware Text-to-Image Generation (ICIP 23 Oral)
- Guided Image Synthesis via Initial Image Editing in Diffusion Model (ACMMM 23)
- The Lottery Ticket Hypothesis in Denoising: Towards Semantic-Driven Initialization (ECCV 24)
- Ongoing projects on MM-DiT investigation

Mechanism Application for Controllable Image Generation

📅 10/2023 - Present

Keyword: Training Free Image Conditioning and Editing
- Sketch Guided Image Generation (CVPRW 24)
- MangaDiT: Reference Guided Line Art Colorization (to be submitted)
- LORE: Latent Optimization for Precise Semantic Control in Image Editing (to be submitted)
- Ongoing projects applying token injection, attention manipulation and in-context LORA for certain tasks

Learning with Noisy Data, Lack of Data and Synthetic Data

📅 04/2019 - Present

Keywords: Noisy Label Learning, Semi-supervised Learning and Continual Learning
- Noisy Label Learning (ICIP 20 Oral, BMVC 21, ICIP 23, ICIP 25)
- Semi-supervised Learning and Synthetic Data Contamination (ECCV 24, AAAI 26)
- Difficulty Guided Data Generation and Dataset Distillation (ICIP 25, ICCVW 25, AAAI 26)
- Continual Learning with Synthetic Data Contamination (NeruIPS 25)
- Ongoing projects on unsupervised manga understanding

Future Directions and Interests

Philosophy of Image Generation and Editing in Era of Large-Scale Models
- DiT Dynamic for Quality Improvement, Inference Acceleration
- Foundation Unified Multimodal Models
- Agentic Image Generation and Editing

PUBLICATIONS

Exploring Palette based Color Guidance in Diffusion Models

Qianru Qiu, Jiafeng Mao, Xueting Wang. ACM MM 2025

LORE: Latent Optimization for Precise Semantic Control in Rectified Flow-based Image Editing

Liangyang Ouyang, Jiafeng Mao. arXiv 2025

MangaDiT: Reference-Guided Line Art Colorization with Hierarchical Attention in Diffusion Transformers

Qianru Qiu, Jiafeng Mao, Kento Masui, Xueting Wang. arXiv 2025

Training Data Synthesis with Difficulty Controlled Diffusion Model

Zerun Wang, Jiafeng Mao, Xueting Wang, Toshihiko Yamasaki. arXiv 2025

Task-Specific Generative Dataset Distillation with Difficulty-Guided Sampling

Mingzhuo Li, Guang Li, Jiafeng Mao, Linfeng Ye, Takahiro Ogawa, Miki Haseyama. ICCV 2025 Workshop CDEL

Diversity-Driven Generative Dataset Distillation based on Diffusion Model with Self-Adaptive Memory

Mingzhuo Li, Guang Li, Jiafeng Mao, Takahiro Ogawa, Miki Haseyama. ICIP 2025

Noisy Label Refinement with Semantically Reliable Synthetic Images

Yingxuan Li, Jiafeng Mao, Yusuke Matsui. ICIP 2025

Training-Free Sketch-Guided Diffusion with Latent Optimization

Sandra Zhang Ding, Jiafeng Mao, Kiyoharu Aizawa. CVPR Workshop 2025

From Obstacles to Resources: Semi-supervised Learning Faces Synthetic Data Contamination

Zerun Wang, Jiafeng Mao, Liuyu Xiang, Toshihiko Yamasaki. arXiv 2024

Reward Incremental Learning in Text-to-Image Generation

Maorong Wang, Jiafeng Mao, Xueting Wang, Toshihiko Yamasaki. arXiv 2024

Dealing with Synthetic Data Contamination in Online Continual Learning

Maorong Wang, Nicolas Michel, Jiafeng Mao and Toshihiko Yamasaki. NeurIPS 2024

The Lottery Ticket Hypothesis in Denoising: Towards Semantic-Driven Initialization

Jiafeng Mao, Xueting Wang, Kiyoharu Aizawa. ECCV 2024

SCOMatch: Alleviating Overtrusting in Open-set Semi-supervised Learning

Zerun Wang, Liuyu Xiang, Lang Huang, Jiafeng Mao, Ling Xiao and Toshihiko Yamasaki. ECCV 2024

Guided Image Synthesis via Initial Image Editing in Diffusion Model

Jiafeng Mao, Xueting Wang, Kiyoharu Aizawa. ACM MM 2023

Noise-Avoidance Sampling for Annotation Missing Object Detection

Jiafeng Mao, Qing Yu, Irie Go and Kiyoharu Aizawa. ICIP 2023

Training-Free Location-Aware Text-to-Image Synthesis

Jiafeng Mao, Xueting Wang.ICIP 2023(Oral)

Noisy Annotation Refinement for Object Detection

Jiafeng Mao, Qing Yu, Yoko Yamakata and Kiyoharu Aizawa. BMVC 2021

Noisy Localization Annotation Refinement for Object Detection

Jiafeng Mao, Qing Yu and Kiyoharu Aizawa. ICIP2020(Oral)

Refer to my homepage for more details
Domestic publication 20+