Zhiwei Tang

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EDUCATION

The Chinese University of Hong Kong, Shenzhen, China   Sep 2020 – Mar 2025
 PhD in Computer Science

Sun Yat-sen University, Guangzhou, China   Aug 2016 – Jul 2020
 BS in Statistic

RESEARCH INTEREST

- Mathematical Optimization
- Diffusion Models
- Multi-Modal LLMs
- RLHF and Post-Training Techniques

PUBLICATIONS AND PREPRINTS

1. **Zhiwei Tang**, Tsung-Hui Chang, Xiaojing Ye, Hongyuan Zha, "Low-rank Matrix Recovery With Unknown Correspondence" (**UAI 2023**) – *Solved a discrete optimization problem for matrix recovery via optimal transport*

2. Hao Wang, **Zhiwei Tang**, Shutao Zhang, Chao Shen, Tsung-Hui Chang, "Embracing Uncertainty: A Diffusion Generative Model of Spectrum Efficiency in 5G Networks" 2023 International Conference on Wireless Communications and Signal Processing – *Application of Diffusion Models in Wireless Communication*

3. **Zhiwei Tang**, Tsung-Hui Chang, "FedLion: Faster Adaptive Federated Optimization with Fewer Communication" (**ICASSP 2024**) – *Distributed optimization for training neural networks*

4. **Zhiwei Tang**, Yanmeng Wang, Tsung-Hui Chang, "z-SignFedAvg: A Unified Stochastic Sign-based Compression for Federated Learning" (**AAAI 2024**) – *Distributed optimization for training neural networks*

5. **Zhiwei Tang**, Dmitry Rybin, Tsung-Hui Chang, "Zeroth-Order Optimization Meets Human Feedback: Provable Learning via Ranking Oracles" (**ICLR 2024**) – *RLHF for Diffusion Models*

6. **Zhiwei Tang**, Jiasheng Tang, Hao Luo, Fan Wang, Tsung-Hui Chang, "Accelerating Parallel Sampling of Diffusion Models" (**ICML 2024**)– *Inference Acceleration for Diffusion Models*

7. **Zhiwei Tang**, Jiangweizhi Peng, Jiasheng Tang, Mingyi Hong, Fan Wang, Tsung-Hui Chang, "Inference-Time Alignment of Diffusion Models with Direct Noise Optimization" **Short Version in ICML Workshop** – *A tuning-free approach for aligning diffusion generative models with downstream objectives such as improving human preference.*

INTERN EXPERIENCES

1. **Research Intern, Autonomous Driving Team, SenseTime Group, CN**   Oct 2019 – Jul 2020
   - Research on reinforcement learning for autonomous driving.
2. **Research Intern, Damo Academy, Alibaba Group, CN**   Oct 2023 – Jun 2024
   - Research on accelerated sampling of diffusion models.
   - Research on RLHF for text-to-image diffusion models.
3. **Applied Scientist Intern, AGI Foundations Team, Amazon, USA**   Jul 2024 – Nov 2024
   - Research on RLHF with Multi-Modal LLMs.

VISITNG EXPERIENCES

University of Minnesota Twin Cities, USA.   **Advisor:** Prof. Mingyi Hong   Jul 2023 – Oct 2023

OPEN SOURCE PROJECT

- Optimizing Diffusion Models with Human Feedback
  https://github.com/TZW1998/Taming-Stable-Diffusion-with-Human-Ranking-Feedback   **GitHub Stars: 196**