JIAMIAN WANG

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jiamian-profile | Jiamian-Wang

Rochester, New York - 14623, USA

EDUCATION

- **Rochester Institute of Technology** *Aug 2022 - Aug 2026*
  Ph.D. in Golisano College of Computing and Information Sciences Rochester, NY, USA
  - Ph.D. Advisor: Zhiqiang Tao

- **Santa Clara University** *Mar 2021 - Aug 2022*
  Ph.D. in Computer Science and Engineering Department (Transfer to RIT along with my advisor) Santa Clara, CA, USA
  - Ph.D. Advisor: Zhiqiang Tao

- **University of Southern California** *Jan 2019 - Dec 2020*
  M.S. in Electrical and Electronics Engineering Los Angeles, CA, USA

- **Tianjin University** *Sep 2014 - Jul 2018*
  Bachelor of Engineering Tianjin, China

RESEARCH INTERESTS

My research focuses on visual understanding and reasoning. My initial works in *computational imaging* and *image super-resolution* develop more interpretable, robust, and efficient methods to enhance the visual data compression and reconstruction. My recent research studys vision and language semantics gap modeling and alignment upon encoder/decoder-based VLM (*e.g.*, *text-video retrieval*). My ongoing research develops agents for multi-turn and multimodal tool calling. My ultimate goal is to develop intelligence systems that can (1) explore visual uncertainty (knowing the unknown), (2) address visual uncertainty (acting on the unknown), and (3) exploit visual uncertainty (benefiting from the unknown) for improved performance, trustworthiness, and reduced hallucination. I expect to graduate in Fall 2026 and am actively seeking full-time and student researcher opportunities. Feel free to reach out if there's a potential match!

INTERNSHIP

- **NVIDIA** *May 2026 - Aug 2026*
  Deep Learning Intern 2788 San Tomas Expressway, Santa Clara, CA 95050
  - Developing on OPD-based solutions for the VLA-based autonomous-driving model post-training.

- **Adobe Research (Document Intelligence Lab)** *May 2025 - Mar 2026*
  Research Scientist Intern 345 Park Avenue San Jose, California 95110
  - Mentors: Ruiyi Zhang & Tong Sun
  - Developed agent for multi-turn multimodal document retrieval and question-answering: (1) Delivered an automated, customized, and scalable data curation pipeline. (2) Built a complete search agent training and deployment infrastructure. (3) Provided a search agent for upon the curated data and infrastructure.

- **Bosch Center for Artificial Intelligence** *May 2024 - November 2024*
  Machine Learning Research Intern 2555 Smallman St, Pittsburgh, PA 15222, USA
  - Mentors: Chen Qiu & Mummadi Chaithanya Kumar
  - Developed visual autoregressive models for low-level vision tasks. Our work studies the error accumulation issue inherent in next-token prediction and proposes a post-processing solution for better visual quality and coherence.

- **SenseBrain Technology Limited LLC** *Jun 2022 - Aug 2022*
  Research Intern 2550 N 1st Street, Suite 300, San Jose, CA 95131
  - Developed a one-shot over-exposure pixel calibration method compatible with the quad Bayer sensor (Sony).

Publications

[1] **Jiamian Wang**, Ruiyi Zhang, Tong Yu, Jing Shi, Samyadeep Basu, Rajiv Jain, Zhiqiang Tao, Tong Sun. "DocArena: Turning Raw Documents into Controllable Training Environments for Document Search Agents" [**PDF**]

[2] **Jiamian Wang**, Ziqi Zhou, Chaithanya Kumar Mummadi, Sohail Dianat, MAJID RABBANI, Raghuveer Rao, Chen Qiu, Zhiqiang Tao. "Visual Self-Refinement for Autoregressive Models." In EMNLP Findings, 2025. [**PDF**]

[3] Prasanna Reddy Pulakurthi, **Jiamian Wang**, MAJID RABBANI, Sohail Dianat, Raghuveer Rao, Zhiqiang Tao. "X-CoT: Explainable Text-to-Video Retrieval via LLM-based Chain-of-Thought Reasoning." In EMNLP Main Conference, 2025. [**PDF**][**Demo**]

[4] **Wang, Jiamian**, Pichao WANG, Dongfang Liu, Qiang Guan, Sohail Dianat, MAJID RABBANI, Raghuveer Rao, and Zhiqiang Tao. "Diffusion-Inspired Truncated Sampler for Text-Video Retrieval." In NeurIPS, 2024. (**NeurIPS 2024 Scholar Award**) [**PDF**] [**Poster**]

[5] **Wang, Jiamian**, Zongliang Wu, Yulun Zhang, Xin Yuan, Tao Lin, and Zhiqiang Tao. "Cooperative Hardware-Prompt Learning for Snapshot Compressive Imaging." In NeurIPS, 2024. [**PDF**] [**Poster**]

[6] **Wang, Jiamian**, Guohao Sun, Pichao Wang, Dongfang Liu, Sohail Dianat, Majid Rabbani, Raghuveer Rao, and Zhiqiang Tao. "Text is MASS: Modeling as Stochastic Embedding for Text-Video Retrieval." In CVPR, 2024. (**Highlight Award, 2.8%, 324 out of 11532**) [**PDF**] [**Poster**] [**Supplementary**] [**Video**]

[7] Sun, Guohao, Can Qin, **Jiamian Wang**, Zeyuan Chen, Ran Xu, and Zhiqiang Tao. "SQ-LLaVA: Self-Questioning for Large Vision-Language Assistant." In ECCV, 2024. [**PDF**] [**Poster**] [**Supplementary**]

[8] **Wang, Jiamian**, Huan Wang, Yulun Zhang, Yun Fu, and Zhiqiang Tao. "Iterative Soft Shrinkage Learning for Efficient Image Super-Resolution." In ICCV, 2023. [**PDF**] [**Poster**][**Supplementary**]

[9] **Wang Jiamian**, Yulun Zhang, Xin Yuan, Ziyi Meng, and Zhiqiang Tao. "Modeling mask uncertainty in hyperspectral image reconstruction." In ECCV, 2022. (**Oral Award, 2.7%, 158 out of 5807**) [**PDF**] [**Poster**] [**Video**] [**Supplementary**]

[10] **Wang, Jiamian**, Kunpeng Li, Yulun Zhang, Xin Yuan, and Zhiqiang Tao. "S^2-Transformer for Mask-Aware Hyperspectral Image Reconstruction." IEEE Transactions on Pattern Analysis and Machine Intelligence (2025). [**PDF**]

[11] Yang, Xueying, **Jiamian Wang**, Xujiang Zhao, Sheng Li, and Zhiqiang Tao. "Calibrate Automated Graph Neural Network via Hyperparameter Uncertainty." In CIKM, 2022. [**PDF**]

[12] **Wang, Jiamian**, Yulun Zhang, Xin Yuan, Yun Fu, and Zhiqiang Tao. "A Simple and Efficient Reconstruction Backbone for Snapshot Compressive Imaging." arXiv preprint arXiv:2108.07739 (2021). [**PDF**]

[13] Papadopoulos, Aristotelis-Angelos, Mohammad Reza Rajati, Nazim Shaikh, and **Jiamian Wang**. "Outlier exposure with confidence control for out-of-distribution detection." In Neurocomputing, 2021. [**PDF**]

[14] Meibo Hu, **Jiamian Wang**, Pichao Wang, and Zhiqiang Tao. "Latent-Centroid Steering: Single-Pass Classifier-Free Guidance for Command-Aligned Autonomous Driving." In IROS, 2026. (Contributed Paper)

[15] Ziqi Zhou, **Jiamian Wang**, Chen Qiu, Chaithanya Kumar Mummadi, Qi Yu, and Zhiqiang Tao. "Visual Autoregressive Modeling Through Online Multi-Scale Preference Optimization for Low-Level Image Perception." In IROS, 2026. (Contributed Paper)

Honors and Awards

- **NeurIPS 2024 Scholar Award (Travel Award)** *Oct 2024*
  Neural Information Processing Systems Foundation
- **The Second Prize Academic Scholarship of Tianjin University** *2018*
  Tianjin University, Tianjin, China

Invited Talks

- **Recent Advances in Text-Video Retrieval** *San Francisco, CA*
  Invited by: Twelve Labs Oct 2024
- **Snapshot-based Hyperspectral Imaging Meets with Deep Learning** *Santa Clara, CA*
  Invited by: Department of Computer Science and Engineering, Santa Clara University Apr 2022

Professional Services

- **Conference Reviewer:**
  - **International Conference on Learning Representations (ICLR)** (2024 - 2026)
  - **IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)** (2024 - 2026)
  - **Conference on Neural Information Processing Systems (NeurIPS)** (2024 - 2026)
  - **Association for the Advancement of Artificial Intelligence (AAAI)** (2023 - 2025)
  - **European Conference on Computer Vision (ECCV)** (2024, 2026)
  - **International Conference on Machine Learning (ICML)** (2024 - 2026)
  - **ACM International Conference on Information and Knowledge Management (CIKM)** (2021 - 2023)
  - **ACM SIGKDD Conference on Knowledge Discovery and Data Mining (ACM SIGKDD)** (2022 - 2023)
- **Journal Reviewer:**
  - **IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)**
  - **International Journal of Computer Vision (IJCV)**
  - **IEEE Transactions on Image Processing (TIP)**
  - **IEEE Transactions on Neural Networks and Learning Systems (TNNLS)**
  - **IEEE Transactions on Multimedia (TMM)**
  - **IEEE Transactions on Circuits and Systems for Video Technology (TCSVT)**
  - **Pattern Recognition**
  - **IEEE Transactions on Emerging Topics in Computational Intelligence (TETCI)**

References

1. **Pichao Wang**
   Principal Machine Learning Engineer, Nvidia, Santa Clara, United States
   Relationship: Mentor, Collaborator.

2. **Ruiyi Zhang**
   Staff Research Scientist at Apple AI/ML, California, United States
   Relationship: Mentor, Collaborator.

3. **Yulun Zhang**
   Associate Professor, AI Institute, Shanghai Jiao Tong University, Shanghai, China
   Relationship: Mentor, Collaborator.

4. **Xin Yuan**
   Associate Professor, Westlake University, Hangzhou, Zhejiang, China
   Relationship: Mentor, Collaborator.

5. **Majid Rabbani**
   Professor of Practice, Department of Electrical and Microelectronic Engineering, Kate Gleason College of Engineering, Rochester Institute of Technology, Rochester, New York, United States
   Relationship: Ph.D. Co-advisor.