

## SUMMARY

Liu Daqing is a Ph.D. from the University of Science and Technology of China, currently working as a research scientist at JD Explore Academy. His research interests include Multimodal Learning, Self-Supervised Learning, and Image Generation. He has published 8 papers in CCF-A conferences, of which 4 were selected as oral presentations, and 2 papers in the top-tier AI journal IEEE TPAMI, of which 1 paper was selected as an ESI highly cited paper.

## RESEARCH INTERESTS

Multimodal Learning, Self-supervised Learning, Image Generation

## WORK EXPERIENCE

### JD Explore Academy, JD.com

Research Scientist

Beijing, China  
2021.8 – Present

- Leader: Prof. [Dacheng Tao](#) (Fellow of the Australian Academy of Science)
- Research Topic: Multimodal Learning and Image Generation
- Member of the Doctoral Management Trainee (a top-tier talent program in JD.com)

### Nanyang Technological University

Research Assistant

Singapore  
2018.05 – 2019.05

- Advisor: Associate Prof. [Hanwang Zhang](#)
- Research Topic: Visual Reasoning

## EDUCATION

### University of Science and Technology of China

Ph.D in Control Science and Engineering

Hefei, China  
2016.09 – 2021.06

- Supervisor: Prof. [Zheng-Jun Zha](#) (The National Science Fund for Distinguished Young Scholars)
- Area of Study: Vision and Language

## RESEARCH OUTCOME

Full list in [Google Scholar](#). \*: co-first authors, #: supervised students, ✉: corresponding author

### Representative Publications:

- [1] **Context-Aware Visual Policy Network for Fine-Grained Image Captioning**  
Zheng-Jun Zha, [Daqing Liu](#)<sup>✉</sup>, Hanwang Zhang, Yongdong Zhang, Feng Wu  
*IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)*, 2021.  
**Impact Factor: 24.314, ESI Highly Cited Paper**
- [2] **Learning to Compose and Reason with Language Tree Structures for Visual Grounding**  
Richang Hong, [Daqing Liu](#)<sup>✉</sup>, Xiaoyu Mo, Xiangnan He, Hanwang Zhang  
*IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)*, 2021.  
**Impact Factor: 24.314**
- [3] **Learning to Assemble Neural Module Tree Networks for Visual Grounding**  
[Daqing Liu](#), Hanwang Zhang, Zheng-Jun Zha, Feng Wu  
*IEEE/CVF International Conference on Computer Vision (ICCV)*, 2019.  
**Oral Presentation, Acceptance Rate: 4.3%**
- [4] **Modeling Video as Stochastic Processes for Fine-Grained Video Representation Learning**  
Heng Zhang<sup>#</sup>, [Daqing Liu](#)<sup>\*</sup>, Qi Zheng<sup>#</sup>, Bing Su  
*IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, 2023.  
**Highlight Presentation, Acceptance Rate: 2.5%**
- [5] **Modeling Image Composition for Complex Scene Generation**  
Zuopeng Yang<sup>#</sup>, [Daqing Liu](#)<sup>\*</sup>, Chaoyue Wang, Jie Yang, Dacheng Tao  
*IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, 2022.

**Peer Reviewed Publications:**

- [6] **SemMAE: Semantic-Guided Masking for Learning Masked Autoencoders**  
Gang Li, Heliang Zheng, **Daqing Liu**, Bing Su, Changwen Zheng  
*Neural Information Processing Systems (NeurIPS), 2022.*
- [7] **Semantically-Consistent Dynamic Blurry Image Generation for Image Deblurring**  
Zhaohui Jing, Youjian Zhang, Chaoyue Wang, **Daqing Liu**, Yong Xia  
*ACM International Conference on Multimedia (MM), 2022.*
- [8] **More Grounded Image Captioning by Distilling Image-Text Matching Model**  
Yuanen Zhou<sup>#</sup>, Meng Wang, **Daqing Liu**, Zhenzhen Hu, Hanwang Zhang  
*IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2020.*
- [9] **Learning to Discretely Compose Reasoning Module Networks for Video Captioning**  
Ganchao Tan<sup>#</sup>, **Daqing Liu**<sup>\*</sup>, Meng Wang, Zheng-Jun Zha  
*International Joint Conference on Artificial Intelligence (IJCAI), 2020.*  
**Oral Presentation, Acceptance Rate: 12.6%**
- [10] **Context-Aware Visual Policy Network for Sequence-Level Image Captioning**  
**Daqing Liu**, Zheng-Jun Zha, Hanwang Zhang, Yongdong Zhang, Feng Wu  
*ACM International Conference on Multimedia (MM), 2018.*  
**Oral Presentation, Acceptance Rate: 8.5%**

**Under Review Manuscripts:**

- [11] **Tackling the Cross-Modal Retrieval Trilemma with Cross-Modal Indexing**  
Heng Zhang<sup>#</sup>, **Daqing Liu**, Heliang Zheng, Chaoyue Wang, Bing Su  
*Submitted to ICML 2023, Rating: WA, BA, BR*
- [12] **EScene: Vision-and-Language Navigation with Episodic Scene Memory**  
Qi Zheng<sup>#</sup>, **Daqing Liu**, Chaoyue Wang, Jing Zhang, Dadong Wang, Dacheng Tao  
*Submitted to ICCV 2023*
- [13] **Decomposing Semantic Shifts for Composed Image Retrieval**  
Xingyu Yang<sup>#</sup>, **Daqing Liu**, Heng Zhang, Chaoyue Wang, Yong Luo, Bo Du  
*Submitted to ICCV 2023*
- [14] **Exploring Temporal Concurrency for Video-Language Representation Learning**  
Heng Zhang<sup>#</sup>, **Daqing Liu**, Zezhong Lv, Bing Su, Dacheng Tao  
*Submitted to ICCV 2023*
- [15] **TransVG++: End-to-End Visual Grounding with Language Conditioned Vision Transformer**  
Jiajun Deng, Zhengyuan Yang, **Daqing Liu**, Tianlang Chen, Wengang Zhou, Yanyong Zhang, Houqiang Li, Wanli Ouyang  
*Submitted to T-PAMI, under Major Revision*
- [16] **Eliminating Prior Bias for Semantic Image Editing via Dual-Cycle Diffusion**  
Zuopeng Yang<sup>#</sup>, Tianshu Chu, Xin Lin, Erdun Gao, **Daqing Liu**, Jie Yang, Chaoyue Wang  
*Submitted to TCSVT, under Major Revision*
- [17] **Cross-Modal Contrastive Learning for Robust Reasoning in VQA**  
Qi Zheng<sup>#</sup>, Chaoyue Wang, **Daqing Liu**, Dadong Wang, Dacheng Tao  
*Submitted to TIP*

**SUPERVISORY EXPERIENCE**

Qi Zheng (PhD from The University of Sydney)	Heng Zhang (PhD from Renmin University of China)
Zuopeng Yang (PhD from Shanghai Jiao Tong University)	Jianbin Zheng (PhD from South China University of Technology)
Minghui Hu (PhD from Nanyang Technological University)	Yuanen Zhou (PhD from Hefei University of Technology)
Ganchao Tan (PhD from University of Science and Technology of China)	
Xingyu Yang (Master from Wuhan University)	Chao Chen (Master from Wuhan University)
Zhongyi Fan (Master from Beijing Institute of Technology)	Zhiyu Wang (Master from Hunan University)