

Mengshi QI

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Professional Experience

Beijing University of Posts and Telecommunications ***Beijing, China, Nov. 2021-present***

Professor

Beijing Key Laboratory of Intelligent Telecommunications Software and Multimedia

EPFL CVLab

Lausanne, Switzerland, Nov. 2019-Nov. 2021

Postdoc Researcher

Collaborators: Prof. Pascal Fua & Dr. Mathieu Salzmann

Baidu Research

Beijing, China, Aug. 2019-Nov. 2019

Visiting Researcher

Collaborator: Prof. Yi Yang

Education

Beihang University, Beijing, China (09/2014-06/2019)

Ph. D. in Computer Application Technology

Lab: Laboratory of intelligent recognition and image processing in School of CSE

Supervisor: Prof. Yunhong Wang

University of Rochester, Rochester, NY, USA (11/2017-12/2018)

Visiting Ph. D.

Lab: Visual Intelligence & Social Multimedia Analytic Research Group (VISTa)

Supervisor: Prof. Jiebo Luo

Beihang University, Beijing, China (09/2012-06/2014)

Master of Engineering in Computer Science

Lab: Sino-German Joint Software Institute in School of CSE

Beijing University of Posts and Telecommunications, Beijing, China (09/2008-06/2012)

Bachelor of Engineering in Intelligence Science and Technology

Research Interests

Computer Vision: scene understanding, visual reasoning, action/activity recognition

Multimedia: image/video retrieval, cross-modal hashing, sports video analysis

Machine Learning: generative models, zero/few-shot learning, self-supervised learning

Publications

Journal:

1. Peilun Du, Xiaolong Zheng, **Mengshi Qi**, Huadong Ma, “*GaitReload: A Reloading Framework for Defending Against On-Manifold Adversarial Gait Sequences*”, IEEE Transactions on Information Forensics and Security (TIFS), 2023
2. **Mengshi Qi**, Jie Qin, Yi Yang, Yunhong Wang, and Jiebo Luo, “*Semantics-Aware Spatial-Temporal Binaries for Cross-Modal Video Retrieval*”, IEEE Transactions on Image Processing (TIP), 2021
3. **Mengshi Qi**, Yunhong Wang, Annan Li, and Jiebo Luo, “*STC-GAN: Spatial-Temporally Coupled Generative Adversarial Networks for Predictive Scene Parsing*”, IEEE Transactions on Image Processing (TIP), 2020
4. **Mengshi Qi**, Yunhong Wang, Jie Qin, Annan Li, Jiebo Luo, and Luc Van Gool, “*stagNet: An Attentive Semantic RNN for Group Activity and Individual Action Recognition*”, IEEE Transactions on Circuits and Systems for Video Technology (TCSVT), 2020
5. **Mengshi Qi**, Yunhong Wang, Annan Li, and Jiebo Luo, “*Sports Video Captioning via Attentive Motion Representation and Group Relationship Modeling*”, IEEE Transactions on Circuits and Systems for Video Technology (TCSVT), 2020

Conference: (* denotes corresponding author.)

1. An Qi, **Mengshi Qi***, Huadong Ma, “Multi-Stage Contrastive Regression For Action Quality Assessment”, IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP 2024), Seoul Korean, April 2024.
2. Changsheng Lv, **Mengshi Qi***, Xia Li, Zhengyuan Yang, Huadong Ma, “*SGFormer: Semantic Graph Transformer for Point Cloud-based 3D Scene Graph Generation*”, Thirty-Eighth AAAI Conference on Artificial Intelligence (AAAI’ 24), Vancouver, Canada, February 2024
3. Wulian Yun, **Mengshi Qi***, Chuanming Wang, Huadong Ma, “*Weakly-Supervised Temporal Action Localization by Inferring Salient Snippet-Feature*”, Thirty-Eighth AAAI Conference on Artificial Intelligence (AAAI’ 24), Vancouver, Canada, February 2024
4. Changsheng Lv, Shuai Zhang, Yapeng Tian, **Mengshi Qi***, Huadong Ma, “*Disentangled Counterfactual Learning for Physical Audiovisual Commonsense Reasoning*”, Thirty-seventh Conference on Neural Information Processing Systems (NeurIPS’ 23), New Orleans, USA, December 2023
5. Pengfei Zhu, **Mengshi Qi***, Xia Li, Weijian Li, Huadong Ma, “*Unsupervised Self-Driving Attention Prediction via Uncertainty Mining and Knowledge Embedding*”, IEEE/CVF International Conference on Computer Vision (ICCV’ 23), Paris, France, October 2023
6. Haowen Wang, Mingyuan Wang, Zhenping Che, Zhiyuan Xu, Xiuquan Qiao, **Mengshi Qi**, Feifei Feng, Jian Tang, “*RGB-Depth Fusion GAN for Indoor Depth Completion*”, IEEE Conference on Computer Vision and Pattern Recognition (CVPR’ 22), New Orleans, USA, June 2022
7. Peilun Du, Xiaolong Zheng, **Mengshi Qi**, Liang Liu, Huadong Ma, “*Towards Adversarial Robust Representation through Adversarial Contrastive Decoupling*”, IEEE International Conference on Multimedia and Expo (ICME’ 22), Taipei, China, July 2022

8. Qi An, Kuilong Cui, Rongshuai Liu, Chuanming Wang, **Mengshi Qi***, Huadong Ma, “*Attention-Aware Multiple Granularities Network for Player Re-Identification*”, The 3rd International Workshop on Multimedia Content Analysis in Sports @ACM Multimedia (MMSports’ 22), Lisboa, Portugal, October 2022
9. **Mengshi Qi**, Jie Qin, Di Huang, Zhiqiang Shen, Yi Yang, and Jiebo Luo, “*Latent Memory-augmented Graph Transformer for Visual Storytelling*”, ACM on Multimedia Conference (MM’ 21), Chengdu, China, October 2021 (oral presentation)
10. **Mengshi Qi**, Jie Qin, Yu Wu, and Yi Yang, “*Imitative Non-Autoregressive Modeling for Trajectory Forecasting and Imputation*”, IEEE Conference on Computer Vision and Pattern Recognition (CVPR’ 20), Seattle, USA, June 2020
11. **Mengshi Qi**, Jie Qin, Xiantong Zhen, Di Huang, Yi Yang and Jiebo Luo, “*Few-shot Ensemble Learning for Video Classification with SlowFast Memory Networks*”, ACM on Multimedia Conference (MM’ 20), Seattle, USA, October 2020
12. **Mengshi Qi**, Weijian Li, Zhengyuan Yang, Yunhong Wang, and Jiebo Luo, “*Attentive Relational Networks for Mapping Images to Scene Graphs*”, IEEE Conference on Computer Vision and Pattern Recognition (CVPR’ 19), Long Beach, USA, June 2019
13. **Mengshi Qi**, Yunhong Wang, Jie Qin, and Annan Li, “*KE-GAN: Knowledge Embedded Generative Adversarial Networks for Semi-Supervised Scene Parsing*”, IEEE Conference on Computer Vision and Pattern Recognition (CVPR’ 19), Long Beach, USA, June 2019
14. **Mengshi Qi**, Jie Qin, Annan Li, Yunhong Wang, Jiebo Luo, and Luc Van Gool, “*stagNet: An Attentive Semantic RNN for Group Activity Recognition*”, European Conference on Computer Vision (ECCV’ 18), Munich, Germany, September 2018
15. **Mengshi Qi**, Yunhong Wang, Annan Li, and Jiebo Luo, “*Sports Video Captioning by Attentive Motion Representation based Hierarchical Recurrent Neural Networks*”, The 1st International Workshop on Multimedia Content Analysis in Sports @ACM Multimedia (MMSports’ 18), Seoul, Korea, October 2018 (oral presentation)
16. **Mengshi Qi**, Yunhong Wang, and Annan Li, “*Online Cross-modal Scene Retrieval by Binary Representation and Semantic Graph*”, ACM on Multimedia Conference (MM’ 17), Mountainview, USA, October 2017
17. **Mengshi Qi**, Yunhong Wang, “*DEEP-CSSR: Scene Classification using Category-specific Salient Region with Deep Features*”, IEEE International Conference on Image Processing (ICIP’ 16), Phoenix, Arizona, USA, September 2016 (oral presentation)

Pre-Print

1. Yaoyao Zhong, **Mengshi Qi***, Rui Wang, Yuhao Qiu, Yang Zhang, Huadong Ma, “*VioTGPT: Learning to Schedule Vision Tools towards Intelligent Video Internet of Things*”, arxiv, 2023
2. Wulian Yun, **Mengshi Qi***, Chuanming Wang, Huiyuan Fu, Huadong Ma, “*Coarse-to-Fine Video Denoising with Dual-Stage Spatial-Channel Transformer*”, arxiv, 2022
3. **Mengshi Qi**, Edoardo Remelli, Mathieu Salzmann, Pascal Fua, “*Unsupervised Domain Adaptation with Temporal-Consistent Self-Training for 3D Hand-Object Joint Reconstruction*”, arxiv, 2020

Research Projects

- 1) Microsoft JRC (Swiss Joint Research Center) Project, Hands in Contact for Augmented Reality (11/2019-11/2022)
PIs: Dr. Mengshi Qi & Prof. Pascal Fua & Dr. Mathieu Salzmann
- 2) Baidu Research Project, Trajectory Prediction and Imputation in Sports and Traffic Videos (08/2019-11/2019)
PIs: Dr. Mengshi Qi & Prof. Yi Yang
- 3) Key Technology for Thorough Perception of Individual Visual Big Data, The Major Research Plan of the Natural Science Foundation of China (Grant No.2016YFB1001002) (01/2016-06/2019)
Supervisor: Prof. Yunhong Wang
- 4) Small-Scale Group Activity Analysis in Sports Videos, The Natural Science Foundation of China (Grant No.61573045) (01/2016-06/2019)
Supervisor: Prof. Yunhong Wang
- 5) Multi-level Human-Being Centered Visual Understanding, The Hong Kong, Macao, and Taiwan Science and Technology Cooperation Program of China (Grant No.L2015TGA9004) (09/2015-09/2017)
Supervisor: Prof. Yunhong Wang
- 6) Face Aging Simulation and Estimation Research based on Massive Internet Media Data, The Natural Science Foundation of China (Grant No.F030403) (09/2014-09/2016)
Supervisor: Prof. Yunhong Wang & Dr. Di Huang
- 7) Hierarchical Computation Theory and Model of Media Cognition, The National Basic Research Program (Grant No.2010CB327902) (“973 program”) (01/2010-01/2014)
Supervisor: Prof. Yunhong Wang
- 8) Research and Implementation of Distributed Anomaly Detection System for Data Center (cooperation with Tencent Inc.), The National High-tech Research & Development Program (“863 program”) (08/2013-08/2014)
Supervisor: Prof. Depei Qian & Prof. Zhongzhi Luan
- 9) Research and Implementation of Graduate Employment Information Public Service Platform, The National Key Technology Research & Development Program (06/2012-06/2013)
Supervisor: Prof. Depei Qian & Prof. Zhongzhi Luan
- 10) Development and Optimization of Chinese Search Engine (cooperation with Sogou.com), Undergraduate Graduation Project (06/2007-06/2008)
Supervisor: Prof. Xiaojie Wang

Honors & Awards

Academic Awards

Young Elite Scientists Sponsorship Program, China Association for Science and Technology (2021-2024)

Outstanding Research Papers Award of Graduate Student, Beihang University (2020)

Outstanding Graduate Award of Beijing, Beihang University (2019)

Technological Innovation Award in School of Computer, Beijing University of Posts and Telecommunications (2010-2011)

Twice recipient of Outstanding Student Award, Beijing University of Posts and Telecommunications (2010-2012)

Academic Scholarships

National Scholarship for Graduate Students, Beihang University (2017)

Grant Scholarship of China Scholarship Council, CSC (2017-2018)

Two times recipient of First Prize Scholarship (Top 10%), Beihang University (2012-2014)

Two times recipient of First Prize Scholarship (Top 10%), Beijing University of Posts and Telecommunications (2010-2012)

Professional Service

Conference Reviewer

CVPR 2024/2023/2022/2021/2020, ICCV 2023/2021/2019, ECCV 2022/2020

ICML 2023/2022/2021, ICLR 2024/2023/2022/2021, NeurIPS 2023/2022/2021/2020

ACM MM 2023/2022/2021

Journal Reviewer

International Journal of Computer Vision (IJCV)

IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)

IEEE Transactions on Image Processing (TIP)

IEEE Transactions on Multimedia (TMM)

IEEE Transactions on Circuits Systems for Video Technology (TCSVT)

Pattern Recognition (PR)

ACM Computing Surveys

Senior PC Member

IJCAI 2021/2023/2024, AAAI 2023/2024

PC Member

AAAI 2022/2021/2020, IJCAI 2020

IEEE Member and ACM Member

CCF/CAAI/CSIG Member