Qi Zhang

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Education

Northwestern Polytechnical University (NWPU), Shaanxi, China 2015.09 – 2021.04

PhD candidate in Computer Science (CS), expected April 2021

♦ Advisor: Qing Wang

The Australian National University (ANU), Canberra, Australia 2019.07 – 2020.08

Research Assistant

♦ Advisor: Hongdong Li

Northwestern Polytechnical University (NWPU), Shaanxi, China 2013.09 – 2016.03

Master of Science in Electronics Engineering (EE)

Xi'an University of Architecture and Technology (XAUAT), Shaanxi, China 2008.09 – 2013.06

Bachelor of Science in Electronics Engineering (EE)

Research Interests

Computational Photography & 3D Vision: Camera Calibration · 3D Reconstruction · Light Field Imaging · Content-aware Rectification · Novel View Synthesis

Publications

1. **Qi Zhang**, Qing Wang, Hongdong Li, Jingyi Yu. Ray-Space Epipolar Geometry for Light Field Cameras[J]. *IEEE Transactions on Pattern Analysis and Machine Intelligence* (**TPAMI**), 2020. (IF: 17.861, JCR Q1, the **No.1** journal in Computer Vision and Artificial Intelligence)

2. **Qi Zhang**, Chunping Zhang, Jinbo Ling, Qing Wang, Jingyi Yu. A Generic Multi-Projection-Center Model and Calibration Method for Light Field Cameras[J]. *IEEE Transactions on Pattern Analysis and Machine Intelligence* (**TPAMI**), 2019, 41(11): 2539-2552. (IF: 17.861, JCR Q1, the **No.1** journal in Computer Vision and Artificial Intelligence)

3. **Qi Zhang**, Hongdong Li, Qing Wang. 3D Scene Reconstruction with an Un-Calibrated Light Field Camera[J]. *International Journal of Computer Vision* (**IJCV**), 2021, 129(11): 3006 – 3026. (IF: 7.410, JCR Q1)

4. **Qi Zhang**, Jinbo Ling, Qing Wang, Jingyi Yu. Ray-Space Projection Model for Light Field Camera[C]. *IEEE Conference on Computer Vision and Pattern Recognition* (**CVPR**), 2019: 10121-10129. (CCF A)

5. Hao Zhu, **Qi Zhang**, Qing Wang. 4D Light Field Superpixel and Segmentation[C]. *IEEE Conference on Computer Vision and Pattern Recognition* (**CVPR**), 2017: 6709-6717. (CCF A)

6. Hao Zhu, **Qi Zhang**, Qing Wang, Hongdong Li. 4D Light Field Superpixel and Segmentation[J]. *IEEE Transactions on Image Processing* (**TIP**), 2020, (29): 85-99. (IF: 9.34, JCR Q1)

7. **Qi Zhang**, Qing Wang. Common Self-Polar Triangle of Concentric Conics for Light Field Camera Calibration[C]. *Asian Conference on Computer Vision* (**ACCV**), 2018: 18-33. (CCF C)

8. Ren Zhao, **Qi Zhang**, Hao Zhu, Qing Wang. Extending the FOV from Disparity and Color Consistencies in Multiview Light Fields[C], *IEEE International Conference on Image Processing* (**ICIP**) 2017: 1157-1161. (Oral, CCF C)

9. **Qi Zhang**, Xin Huang, Xue Wang, Hongdong Li, Qing Wang. MHI: Scene-Centric Representation for View Synthesis[C]. *IEEE International Conference on Computer Vision* (**ICCV**), 2021, under review.

10. **Qi Zhang**, Xue Wang, Qing Wang. Light Field Planar Homography and Its Application[C]. SPIE Photonics Asia, 2019, 11187: 111870S. (Oral)

11. Yaning Li, **Qi Zhang**, Xue Wang, Qing Wang. Light Field SLAM based on Ray-Space Projection Model[C]. SPIE Photonics Asia, 2019, 11187: 1118706. (Oral)

12. Hao Zhu, Xiaoming Sun, **Qi Zhang**, Qing Wang, Antonio Robles-Kelly, Hongdong Li, Shaodi You. Full view optical flow estimation leveraged from light field superpixel. *IEEE Transactions on Computational Imaging* (**TCI**), 2019, (6): 12-23. (IF=4.015, JCR Q2)

13. Xue Wang, Yingying Dong, **Qi Zhang**, Qing Wang. Region-based Depth Feature Descriptor for Saliency Detection on Light Field[J]. Multimedia Tools and Applications, 2020. (IF=2.313, JCR Q3)

PATENTS

1. **Qi Zhang**, Qing Wang, Yaning Li, Guoqing Zhou, Xue Wang. Light Field Camera Calibration based on Multi-Projection-Center Model[P]. China Patent (CN110310338A), 2019-10-08.

2. **Qi Zhang**, Qing Wang, Yaning Li, Guoqing Zhou, Xue Wang. Relative Pose Estimation for Light Field Camera based on Multi-Projection-Center Model[P]. China Patent (CN110322514A), 2019-10-11.

3. **Qi Zhang**, Qing Wang, Yaning Li, Guoqing Zhou, Xue Wang. Semi-Calibration for Light Field Camera based on Light Field Fundamental Matrix[P]. China Patent (CN110310337A), 2019-10-08.

4. **Qi Zhang**, Qing Wang, Yaning Li, Guoqing Zhou, Xue Wang. Light Field Camera Calibration using Plücker Coordinates[P]. China Patent (CN110298890A), 2019-10-01.

PROJECTS

★ Ray-Ray Corresponding Model for Multi-view Light Fields 2018.12 – 2020.12

Innovation Foundation for Doctor Dissertation of NWPU (Key Project)

Principal Investigator

★ Theory and Key Technologies of Multi-view Light Field Computing 2015.12 – 2020.12

Key Program of the National Natural Science Foundation of China

Key personnel for theory, calibration and reconstruction of multi-view light fields

★ Acquisition and Computing of High Resolution Dynamic Light Field 2019.5 – Present

Key Program of the National Natural Science Foundation of China

Key personnel for alignment and computing of multi-model camera system

★ Light Field Acquirement and Novel View Synthesis for 4K VR 2018.09 – 2018.12

Huawei

Key personnel for registration of light field cameras and panorama view synthesis

★ Multi-Model Imaging under Strong Scattering Medium Condition 2017.01 – 2018.12

National Science and Technology Major Project of the Ministry of Science and Technology of China

Key personnel for multi-model camera system

★ 3D Reconstruction of Explosion Field using Light Field Imaging 2017.12–2019.12

Pre-Research Foundation

Key personnel for light field camera calibration and 3D reconstruction

★ Study of Magnetic Tracking System 2014.12 – 2015.12

Seed Foundation of Innovation and Creation for Graduate Students in NWPU

Principal Investigator

♡ Honors and Service

- **Honors**
  - CCF Outstanding Doctoral Dissertation Award Nominee 2021
  - ACM Xi'an Doctoral Dissertation Award 2021
  - First-Class Graduate Scholarship, NWPU (Top 5%) 2013, 2015, 2018
  - Second-Class Graduate Scholarship, NWPU (Top 20%) 2014, 2016, 2017
  - First-Class Scholarship, XAUAT (Rank: 1/33) 2010, 2011
  - Innovation Foundation for Doctor Dissertation of NWPU (**Key Project**) 2018
  - **Excellence** in mid-term of Innovation Foundation for Doctor Dissertation 2019
  - Seed Foundation of Innovation and Creation for Graduate Students in NWPU 2014
  - Third-Class of Electronics Design Competition in NWPU 2014
- **Service**
  - Reviewing for Journals, *e.g* **TPAMI**, Optics Express, Applied Optics, *etc*
  - Reviewing for Conferences, *e.g* **CVPR**, **ICCV**, **ECCV**, WACV, BMVC, *etc*