Rui Li

PH.D. STUDENT IN KAUST · VISUAL COMPUTING CENTER

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Education

Xidian University   *Xian, China*

B.ENG. IN INFORMATION AND COMMUNICATION ENGINEERING,   *Aug. 2009 - Aug. 2013*

University of Science and Technology of China   *Hefei, China*

M.SC. IN INFORMATION AND COMMUNICATION ENGINEERING,   *Sep. 2013 - June. 2016*

King Abdullah University of Science and Technology   *Thuwal, Saudi Arabia*

PH.D. IN ELECTRICAL AND COMPUTER ENGINEERING (GPA: 3.56/4.0), SUPERVISOR: **PROF. WOLFGANG HEIDRICH**   *Aug. 2016 - Apr. 2022 (expected)*

Summary

Research: Computational photography, 3D scene reconstruction, neural & differentiable rendering, visual tracking, image segmentation.
Skills: I have many years coding experience with C, C++, CUDA, Python for machine learning, low-level computer vision, robotics tasks, especially low-cost system programming (UAVs, sonic, infrared, camera sensors, etc), and deep learning for large-scale 3D neural reconstruction.

Selected Publications

Rui Li, Wolfgang Heidrich. Photo-realistic Neural Reconstruction for Large-scale Scene. Ongoing project. 2021.

Rui Li, Guangming Zang, Miao Qi, Wolfgang Heidrich. Shape and Reflectance Reconstruction in Uncontrolled Environments by Differentiable Rendering. https://arxiv.org/abs/2110.12975. 2021.

Guangming Zang, Ramzi Idoughi, **Rui Li**, Peter Wonka, Wolfgang Heidrich. *Learning based Tomography via Sinogram Synthesis and Prediction*. In ICCV, 2021.

Rui Li, *The 7th KAUST-NVIDIA Workshop AI competition, Geospatial Data Analytics (Competition I)*. Rank 1st Winner.

Rui Li*, S. Qiu*, G. Zang, Wolfgang Heidrich. *Reflection Separation via Multi-bounce Polarization State Tracing*. In ECCV, 2020.

Rui Li, Wolfgang Heidrich. *Hierarchical and View-invariant Light Field Segmentation by Maximizing Entropy Rate on 4D Ray Graphs*. In ACM Transactions on Graphics (Proc. SIGGRAPH Asia), 2019.

Rui Li, M. Pang, C. Zhao, G. Zhou, L. Fang. *Monocular Long-Term Target Following on UAVs*. In CVPR Workshops, 2016.

Rui Li, Lu Fang. *Cluster Sensing Superpixel and Grouping*. In CVPR Workshops, 2016.

Work Experience

Sony   *Tokyo, Japan*

R&D INTERN   *Jun. 2021*

- Algorithm research & development in the area of computational photography, including polarization, hyper-spectral, light field and compressive sensing etc

Sadeem (Startup Company in Saudi Arabia)   *Saudi Arabia*

INTERN DEVELOPER   *Mar. 2017 - Sep. 2017*

- Hardware: designed C++ driver and API for sonic, camera, infrared light sensors on a hardware motherboard, deployed first generation system.
- Code Refactoring: re-designed software architecture for sensor data communication, vehicle detection and emergency event detection.

HKUST Robotics Institute   *Hong Kong, China*

RESEARCH ASSISTANT   *Jan. 2016 - Aug. 2016*

- Working on research project for various vision (image processing, tracking, segmentation) algorithm on low-cost UAVs and home robot system.

DJI   *ShenZhen, China*

RESEARCH INTERN   *Sep. 2014 - Sep. 2015*

- Developed robust visual tracking algorithm for Phantom 4 UAV in long term tracking situation and complex environment.
- Supported product-level design for deploying algorithms to low cost UAV system and design the I/O interface for GPS and sensor.

Academic Activities

REVIEWERS FOR PAMI(2020), CVPR(2019), ICRA(2015, 2016)