

Ruoxiang Li | Curriculum Vitae

Kaifu District, Changsha, Hunan, China – 410073

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RESEARCH INTEREST

Visual SLAM, Event-based Vision, Computer Vision, Robotics

EDUCATION

National University of Defense Technology (Non-military student)

Master of Engineering in Computer Science and Technology

Advisor: Prof. Dr. Dianxi Shi

Changsha, China

Sept. 2017 - June 2020

Northeastern University

Bachelor of Engineering in Internet of Things

GPA: 3.8085/5 (Ranking: 6/59)

Shenyang, China

Sept. 2013 - June 2017

PUBLICATIONS

- **Ruoxiang Li**, Dianxi Shi, Yongjun Zhang, Kaiyue Li and Ruihao Li, "FA-Harris: A Fast and Asynchronous Corner Detector for Event Cameras," Accepted by *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2019.
- **Ruoxiang Li**, Dianxi Shi, Yongjun Zhang and Ruihao Li, "Asynchronous Event Feature Generation and Tracking based on Gradient Descriptor for Event Cameras." In submission.
- Kaiyue Li, Dianxi Shi, Yongjun Zhang, **Ruoxiang Li** and Ruihao Li, "Feature Tracking Based on Line Segments with the Dynamic and Active-pixel Vision Sensor (DAVIS)," *IEEE Access* 7 (2019): 110874-110883.
- Mingkun Wang, Dianxi Shi, Naiyang Guan, Tao Zhang, Liuqing Wang and **Ruoxiang Li**, "Unsupervised pedestrian trajectory prediction with graph neural networks," *The IEEE International Conference on Tools with Artificial Intelligence (ICTAI)*, 2019.
- Zhuoyue Yang, Dianxi Shi, Yongjun Zhang, Shaowu Yang, Fu Li and **Ruoxiang Li**, "Multi-UAV Collaborative Monocular SLAM Focusing on Data Sharing," *International Conference on Neural Information Processing*. Springer, Cham, 2018.

COMPETITION EXPERIENCE

ABU Robocon (Third Award, Best Design Award)

June 2015

- **Team Task:** Independently design two robots cooperating to play badminton doubles.
- **Duties included:** Coordinate conversion, data acquisition and processing procedures based on Kinect for Windows v2 using C language, test the effect of illumination on Kinect depth camera.
- **Development Tools:** Halcon, Microsoft Visual Studio

Robot Competition for Undergraduates in Liaoning Province (First Award)

Oct. 2014

- **Team Task:** Independently design two robots cooperating to collect the golf balls in the designated area and transport the collected balls to the starting position.
- **Duties included:** Robot control program design, control the robot to collect the golf balls by fixed route based on LPC1700 series Cortex-M3 micro-controller and μ C/OSII system (using C language).
- **Skills & devices:** CAN communication, Gyroscope, Encoder

RESEARCH EXPERIENCE

Event-based Asynchronous Feature Detection and Tracking 2018 - 2019

- Work for asynchronous event feature detection and tracking based on event cameras.
- Proposed a fast and asynchronous event-based corner detection method achieving $8\times$ speed-up.
- Presented an asynchronous event feature generation and tracking method.

Intelligent Unmanned Cluster System 2017 - 2018

- Aim to construct operational support platform for the intelligent unmanned cluster system.
- Participated in the research about multi-UAV collaborative mapping based on multiple monocular cameras, which is part of the Incremental Global View Extension Technology.

CORE COURSES

Master 2017 - 2018

- Machine Learning (A)
- Matrix Analysis and Calculation (B)
- Principle of Artificial Intelligence (B)
- Computational Complexity (B)
- Computational Geometry (B)
- Parallel Computing (B)

Bachelor 2013 - 2017

- Object-Oriented Programming (C++) (A)
- Algorithm Design and Analysis (A)
- Probability Theory and Mathematical Statistics (B)
- Data Structures (B)
- Linear Algebra (B)

HONORS AND AWARDS

National University of Defense Technology 2017 - Present

- Postgraduate Admission Scholarship (Nov. 2018)
- Outstanding Postgraduate (June 2019)

Northeastern University 2013 - 2017

- Second-class Scholarship (Apr. 2014)
- Second-class Scholarship (Oct. 2014)
- Outstanding Student Leader (Oct. 2014)
- Third-class Scholarship (Nov. 2015)
- Outstanding Student Leader (Nov. 2015)
- First-class Scholarship (Oct. 2016)
- Zhongtian Iron and Steel Scholarship (Second-class) (Oct. 2016)
- Second-class Scholarship (Oct. 2017)
- Outstanding Graduate of Liaoning Province (Mar. 2017)