

Yan DONG

Ph.D. Applicant (Master's Student)

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Research video: <https://youtu.be/E4BnncS8GMO>

Education

Tsinghua University (THU) *Master of Engineering* Sep 2018 - Expected, Jun 2021

- ◆ Major: Automation (GPA: 3.7/4.0)
- ◆ Key courses: Pattern Recognition, Matrix Analysis and Applications, Convex Optimization, Applied Stochastic Processes, Flight Control System

Beijing Institute of Technology (BIT) *Bachelor of Science* Sep 2014 - Jun 2018

- ◆ Major: Automation (GPA: 4.0/4.0)
 - ◆ Key courses: Automatic Control Theory, Computer Science and Programming, Signals and Systems, Sensing and Testing Technology, Computer Controlled System.
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Publications & Conference Presentation

- ◆ *Standard and Event Cameras Fusion for Feature Tracking.* **Yan Dong** and Tao Zhang. The 4th International Conference on Machine Vision and Applications (Accepted)
 - ◆ *A Real-Time Algorithm for Multiple Data Matrix Codes Localization.* **Yan Dong** and Tao Zhang. Advances in Guidance, Navigation and Control, Proceedings of 2020 International Conference on Guidance, Navigation and Control (ICGNC 2020), Tianjin, China, October 23–25, 2020
 - ◆ The 12th IFAC Conference on Control Applications in Marine Systems, Robotics, and Vehicles, in Daejeon Korea, Sep 2019
 - Topic: *A Novel Cane with Camera to Locate Tactile Paving.*
 - Made a 15-minute oral presentation in English.
 - **Honorable Mention** as a finalist paper for the Young Author Award.
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Research Experience

Project I: The Barcode Scanner Design for AGV Navigation Sep 2018 - Sep 2020

Project cooperated with Huayun-Smart Technology Co., Ltd

Role: Core Member

- ◆ Proposed a novel algorithm to detect and localize multiple datamatrix code labels to provide position and rotation information for AGVs.
- ◆ The algorithm achieved real-time computing on embedded systems: 30 fps on Raspberry Pi.
- ◆ The scanner module is now used in different applications including car conveyors in underground garages and cargo carriers in factories.

Project II: Underground 3D Mapping for Coal Mining Jul 2020 - Present

Project cooperated with Zhengzhou Coal Mining Machinery Group Co., Ltd

Role: Core Member

- ◆ Objective: Reconstruct the whole tunnel and localize powered roof supports.
- ◆ Used two LiDARs for localization and mapping. One was installed on the top of the AGV to calculate the AGV's trace, and the other one scanned the cross section of the miner and mapped.

Teaching Experience

Department of Automation, Tsinghua University

Sep 2019 - Jan 2020

Position: Teaching Assistant

- ◆ Tutored postgraduates (around 150) in the course of *Matrix Analysis and Applications*.
- ◆ Helped the professor assign and grade the homework, monitored class tests, and designed the final project for students.

International Class of Automation, Beijing Institute of Technology

Apr 2018 - Jun 2019

Position: Tutor

- ◆ Tutored about 15 international students in the course of *Engineering Mechanics*.
- ◆ Instructed students in basic mathematics, offered help for them to understand the course materials given by the professor, and taught them key points at the end of the semester.

Teamwork Experience

RoboMaster Robotics Competition

Aug 2016 - May 2018

Role: Core Member (2016-2017) / Team Leader (2017-2018)

- ◆ About the competition: Design different kinds of robots to compete with other teams.
- ◆ Coded for the controller of robots, including chassis and shooting modules.
- ◆ Led the team to design mechanical structures and controllers, and assigned tasks to teammates.
- ◆ Set up the Robotics Club in Beijing Institute of Technology, and organized the first campus robotic competition which was participated by around 80 students.

National University Students Intelligent Car Race

Sep 2017 - Apr 2018

Role: Team Leader

- ◆ Designed and soldered circuit boards, and coded for the car controller on MCU.
- ◆ Won the 2nd Prize in the NXP Cup National University Students Intelligent Car Race.

Honors & Awards

Postgraduate

- ◆ Honorable Mention as a finalist paper for the Young Author Award, IFAC WROCO. (2019)
- ◆ Second-Class Scholarship, Tsinghua University. (2019)
- ◆ 3rd Prize, "Challenge Cup" Tsinghua University Curricular Academic Science and Technology Works Competition. (2019 and 2020)

Undergraduate

- ◆ The Excellent Graduate Thesis, Beijing Institute of Technology. (2018)
- ◆ Enterprise scholarship, sponsored by DWIN Technology (45 recipients in BIT). (2017 and 2018)
- ◆ First-Class Scholarship (4 times), Beijing Institute of Technology. (2014 - 2018)
- ◆ 2nd Prize Innovation and Entrepreneurship Scholarship, the MIIT of Chinese Government. (2017)
- ◆ Enterprise scholarship, sponsored by China Century Group (50 recipients in BIT). (2016)

Skills

- ◆ Computer skills: C/C++, MATLAB, OpenCV, ROS, Git
- ◆ Languages: Chinese (native), English (fluent, IELTS 7.5)
- ◆ Hobbies: Badminton, Ping-pong