

# XIE Yusen

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## Education

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Sep 2023 - Present

Hong Kong University of Science & Technology (GZ)

ROAS (Doctorate)

Research Area: Computer Vision, Deep Learning CV, Multi-sensor Fusion SLAM, End-to-End Autonomous Driving

Sep 2020 - Jun 2023

Beijing Information S & T University

IntelliSense Engineering (Master)

Research Area: Computer Vision, Deep Learning CV, Multi-sensor Fusion SLAM, Robot Localization and Navigation

Sep 2016 - Jun 2020

Wuhan University of Technology

Geographic Information System (Bachelor)

Courses: Introduction to Geographic Information Systems, GIS Mapping and Information Extraction, Remote Sensing Principles and Image Processing, and accumulated rich programming experience

## Publications

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Y. Xie, Z. Huang, K. Chen, L. Zhu, and J. Ma\*, "MCGMapper: Light-Weight Incremental Structure from Motion and Visual Localization With Planar Markers and Camera Groups," *2024 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2024,

Y. Xie, L. Deng, T. Sun\* and B. Chen, "A4LidarTag: Depth-Based Fiducial Marker for Extrinsic Calibration of Solid-State Lidar and Camera," in *IEEE Robotics and Automation Letters (RAL)*, vol. 7, no. 3, pp. 6487-6494, July 2022.

Y. Xie, T. Sun\*, L. Deng and B. Chen, "Fast-robust book information extraction system for automated intelligence library," *2021 IEEE International Conference on Artificial Intelligence and Industrial Design (AIID)*, 2021.

## Projects

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Aug 2021 - Present

Fully automatic aircraft jet bridge docking guidance system

Algorithm Leader

Role: Achiever and leader of camera-LiDAR fusion navigation algorithm

Objective: Utilize the stereo camera and solid-state LiDAR carried by the jet bridge, and through the principle of multi-sensor fusion, real-time estimate the door pose and complete the jet bridge navigation docking procedure

Completion: Successfully completed first fully automatic aircraft jet bridge guidance system in Asia. It has been developed in major airports nationwide with significant results.

Jun 2022 - Present

### Fully autonomous navigation of a warehouse inventory robot

Algorithm Leader

**Role:** Map localization algorithm leader, navigation & control leader

**Objective:** Place multiple markers in the indoor warehouse, achieve global localization and real-time pose tracking of the car. Then controlling the autonomous movement of the robot to complete the unmanned inventory of the warehouse

**Completion:** Through the Road Network path management and pure pursuit path tracking algorithm, along with the robot control module, the inspection robot's functions can be independently completed, achieving the intelligent and flexible transformation of the warehouse. It has been developed in several warehouses nationwide

Nov 2020 - Present

### Perception of library book information

Algorithm Leader

Establish an automated book information collection system composed of multiple cameras and photoelectric triggers, utilizing deep learning computer vision (e.g. detection, segmentation) to extract information from image data. The project has been running stably to date.

## Honors & Awards

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National Scholarship for Graduate Students (0.2% Top)

Outstanding Graduates in Beijing (1% Top)

Excellent Master's Degree Thesis (1% Top)

First-class Academic Scholarship for the 2021-2022 academic year (10% Top)

Second-class Academic Scholarship for the 2020-2021 academic year (40% Top)

## Skills

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**Professional Skills:** CET-6, proficient in reading and writing academic papers, familiar with Linux environment,

**Basic Knowledge:** Mastery of basic principles and methods of image processing, computer vision, and SLAM, proficient in using deep learning for image processing

**Teamwork:** Abundant experience in algorithm development and programming practice, enthusiastic about using various technologies for algorithm design, practical experience in product implementation

Good at

SLAM

Good at

Programming

Good at

Teamwork

Good at

Opensource

Good at

Communication

80%

Autonomous Driving

## Self-evaluation

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Algorithm Enthusiast

Programming Enthusiast

Brainstorming Enthusiast

Hardworking

Interesting

Team Coordinator

Energetic

Self-Driven