

# Yudi (Mike) Qin

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## EDUCATION

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### University of Illinois at Urbana-Champaign

Aug. 2022 - Dec. 2024

*M.S. in Computer Science* | Advisor: Nancy M. Amato

*Thesis: A Hybrid Framework for Multi-Robot Kinodynamic Planning*

### University of Illinois at Urbana-Champaign

Aug. 2018 - May 2022

*B.S. in Computer Science + Geography & GIS* | GPA: 3.95/4.0

## RESEARCH INTERESTS

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Task and Motion Planning, Trajectory Optimization, Multi-Robot Systems, Learning for Planning and Control

## PUBLICATIONS

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### Peer Reviewed Journal

- **Mike Qin**, Irving Solis, James D. Motes, Marco Morales, and Nancy M. Amato. K-ARC: Adaptive Robot Coordination for Multi-Robot Kinodynamic Planning. *IEEE Robotics and Automation Letters*, 10(10): 10562–10569, 2025.
- Irving Solis, James Motes, **Mike Qin**, Marco Morales, and Nancy M. Amato. Experience-based Subproblem Planning for Multi-Robot Motion Planning. *arXiv preprint arXiv:2411.08851*, 2024.
- Irving Solis, James Motes, **Mike Qin**, Marco Morales, and Nancy M. Amato. Adaptive Robot Coordination: A Subproblem-Based Approach for Hybrid Multi-Robot Motion Planning. *IEEE Robotics and Automation Letters*, 9(8):7238–7245. Presented at ICRA@40, Rotterdam, Netherlands, September, 2024

## EXPERIENCE

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### Ubtech Robotics Inc.

Feb. 2025 - Present

*Robotics Algorithm Engineer, Autonomous Navigation (Full-Time)*

Beijing, China

- Designed and implemented the autonomous parking module within the existing navigation stack.
- Implemented planning algorithms from state-of-the-art research papers in the free-space planning module, focusing on improving the overall accuracy and success rate in autonomous parking scenarios.
- Developed an Isaac Sim simulation framework alongside the existing Webots simulation framework, which supports data collections and algorithm testing for various modules in perception, planning, and control.
- Exploring 3D humanoid whole-body navigation methods on uneven indoor terrain, focusing on stair traversal.

### Parasol Lab

Aug. 2022 - Dec. 2024

*Graduate Research Assistant*

Champaign, IL

- Contributed to the development of the multi-robot system components for PPL(Parasol Planning Library), an open-source C++ robotics task and motion planning library
- Developed an algorithm for solving multi-robot motion planning problems, achieving an overall 20% speed-up over existing solutions across various test scenarios.
- Extending the algorithm to incorporate trajectory optimizations for real-time controls of the robots.

### Foxconn Interconnect Technology

May 2023 - Aug. 2023

*Software Development Engineering Intern*

Remote

- Developed a software package in ROS for motion planning for multiple AGV (Automated Guided Vehicle) robots.
- Worked closely with my mentor to put this package into real usage for the company's factory automation.
- Recognized as "Excellent Intern" for consistent contributions and performance during the internship.

**Parasol Lab***Research Experience for Undergraduate (REU) Student*May 2021 - Aug. 2021  
Champaign, IL

- Assisted in developing and implementing multi-robot motion planning algorithms in C++.
- Contributed to developing and open-sourcing PPL. Specifically, added testing suites for existing codes, refactored existing codes, and added new components to the library.

**CyberGIS Center***Student Intern*Jun. 2020 - Mar. 2022  
Champaign, IL

- Developed Python codes for processing large-scale geo-located data, gathered using Twitter's data collection API.
- Contributed to developing a web-based GIS application that is able to visualize and predict spatiotemporal patterns of infectious diseases.
- Implemented a spatial analytic tool known as MGWR (multi-scale geographically weighted regression) in Python and explored its application on disease data analysis.

**TEACHING EXPERIENCE**

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**University of Illinois at Urbana-Champaign***Graduate Teaching Assistant*Aug. 2022 - Dec. 2024  
Champaign, IL

- CS 441, Applied Machine Learning (Fall 2022)
- CS 421, Programming Languages and Compilers (Spring and Summer 2023)
- CS 440, Intro to Artificial Intelligence (Spring 2024)

**REVIEWING**

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Robotics and Automation Letters (RA-L)

2023, 2024

International Conference on Robotics and Automation (ICRA)

2025

**HONORS AND AWARDS**

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UIUC College of Liberal Arts and Science, Dean's List

Fall 2018 - Spring 2022

The Howard and Ruth Roepke Undergraduate Scholarship

Spring 2019