Ruiqi Ni

2400 Northwestern Ave, West Lafayette, IN, USA
ni117@purdue.edu • +1 (850)755 3166

EDUCATION

Purdue University, West Lafayette, IN, USA
Ph.D. in Computer Science — Jan 2022 – Present

Florida State University, Tallahassee, FL, USA
Graduate Student in Computer Science — Aug 2019 – Dec 2021

University of Science and Technology of China, Hefei, Anhui, China
B.S. in Information and Computing Science — Sep 2014 – Jun 2018

RESEARCH INTEREST

Motion Planning and Control, Trajectory Optimization, Physics-based Simulation, Geometry Processing

PUBLICATION

"Physics-informed Temporal Difference Metric Learning for Robot Motion Planning ",
Ruiqi Ni, Zherong Pan, Ahmed H. Qureshi,
International Conference on Representation Learning (ICLR), 2025

"Physics-informed Neural Mapping and Motion Planning in Unknown Environments",
Yuchen Liu*, **Ruiqi Ni***, Ahmed H. Qureshi,
IEEE Transactions on Robotics (T-RO), 2025

"Physics-informed Neural Motion Planning on Constraint Manifolds",
Ruiqi Ni, Ahmed H. Qureshi,
IEEE International Conference on Robotics and Automation (ICRA), 2024.

"Progressive Learning for Physics-informed Neural Motion Planning ",
Ruiqi Ni, Ahmed H. Qureshi,
Robotics: Science and Systems (RSS), 2023.
RSS 2023 Symmetries in Robot Learning Workshop. Oral.

"NTFields: Neural Time Fields for Physics-Informed Robot Motion Planning ",
Ruiqi Ni, Ahmed H. Qureshi,
International Conference on Representation Learning (ICLR), 2023. Spotlight.
ICLR 2023 Neural Fields Workshop. Best paper.

"Multi-Robot Path Planning in Complex Environments via Graph Embedding ",
Xifeng Gao, Zherong Pan, **Ruiqi Ni**,
IEEE Robotics and Automation Letters (RA-L), 2022.

"Robust Multi-Robot Trajectory Optimization Using Alternating Direction Method of Multiplier ",
Ruiqi Ni, Zherong Pan, Xifeng Gao,
IEEE Robotics and Automation Letters (RA-L), 2022.

"Robust & Asymptotically Locally Optimal UAV-Trajectory Generation Based on Spline Subdivision",
Ruiqi Ni, Teseo Schneider, Daniele Panozzo, Zherong Pan, Xifeng Gao,
IEEE International Conference on Robotics and Automation (ICRA), 2021.

"Progressive Parameterizations",
Ligang Liu, Chunyang Ye, **Ruiqi Ni**, Xiaoming Fu,
ACM Transactions on Graphics (SIGGRAPH), 2018.

RESEARCH EXPERIENCE

Purdue University
Research Assistant — Jan 2022 – Present
Advisors: Prof. Ahmed H. Qureshi

- Project: Physics-informed Neural Motion Planning

Florida State University

Research Assistant — Aug 2019 – Dec 2021

Advisors: Prof. Xifeng Gao and Dr. Zherong Pan

- Project: ADMM in Multi-Agent Trajectory Optimization
- Project: Continuous Collision Detection in Trajectory Optimization

University of Science and Technology of China

Undergraduate Research Assistant — Sep 2017 – Jun 2018

Advisors: Prof. Ligang Liu and Dr. Xiaoming Fu

- Project: Progressive Parameterizations

TEACHING EXPERIENCE

Purdue University

Teaching Assistant

CS 251 Data Structures And Algorithms (Fall 2022, Spring 2023)

WORK EXPERIENCE

Lightspeed Studio, Tencent America

Research Intern — May 2024 – Aug 2024

Advisor: Dr. Zherong Pan

- Project: Temporal Difference Learning for Motion Planning

Adobe Research

Research Intern — May 2021 – Aug 2021

Advisor: Dr. Kevin Wampler

- Project: Constrained Vector Graphics Editing

SERVICES

Reviewer

Journal: IEEE T-RO, IEEE RA-L, TASE, The Visual Computer

Conference: CoRL, SIGGRAPH, SIGGRAPH Asia, ICRA, IROS, ICLR