

Yixuan Wang

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EDUCATION

University of Michigan, Ann Arbor.

B.S. in Computer Science

GPA: 4.00/4.00

Ann Arbor, MI

09/2019 - 05/2021 (expected)

University of Michigan - Shanghai Jiao Tong University Joint Institute

B.E. in Mechanical Engineering

GPA: 3.81/4.00

Shanghai, China

09/2017 - 08/2021 (expected)

PUBLICATION

Wang, Y., McConachie, D., Berenson, D., "Tracking Partially-Occluded Deformable Objects while Enforcing Geometric Constraints", *The 2021 International Conference on Robotics and Automation (ICRA 2021)*. [Under review]

ACADEMIC EXPERIENCE

Tracking Partially-Occluded Deformable Objects while Enforcing Geometric Constraints

Ann Arbor, MI

Research Assistant, Supervisor: Dr. Dale McConachie, UM Autonomous Robotic Manipulation Lab

05/2020 - Present

- Improved posterior constraints of GMM EM algorithm to preserve geometric correctness during obstacle interaction and self-intersection
- Incorporated prediction model of deformable object into objective function of GMM EM algorithm to obtain more robust results to the occlusion
- Validated ideas in simulation environment and real experiments and wrote the research paper targeting at ICRA 2021

Model-free Control over Soft Robots' Shape based on Visual Information

Ann Arbor, MI

Research Assistant, Supervisor: Dr. Audrey Sedal, UM Compliant Systems Design Laboratory

09/2019 - 05/2020

- Segmented soft robots in real time based on texture segmentation using Gabor filter and k-means clustering
- Kept track of the shape based on Bezier curve fitting and Ceres solver
- Applied Deep Q-Learning to control soft robots' shape

Vehicle based on Transformable Wheels and Caterpillar Bands

Shanghai, China

Project Leader, Instructor: Prof. Jaehyung Ju, Design and Manufacturing II

05/2019 - 08/2019

- Designed the structure of transformable wheels and the whole vehicle
- Wrote the code for controlling and auto turning based on Arduino

Robot Arm with a Soft Gripper

Shanghai, China

Project Leader, Advisor: Prof. Jaehyung Ju, Design and Manufacturing I

02/2019 - 05/2019

- Designed the mechanical structure of the robot arm and soft gripper
- Wrote the code for teleoperating and controlling of the vehicle

EXTRA-CURRICULAR ACTIVITIES

Teaching Assistant of Honor Physics I, UM-SJTU Joint Institute

09/2018 - 12/2018

Teaching Assistant of Honor Calculus II, UM-SJTU Joint Institute

05/2019 - 08/2019

- Organized recitation class and office hour to promote students' understanding of course
- Graded the assignment and examination to judge level of students fairly

Student Advisor, UM-SJTU Joint Institute Advising Center

09/2018 - 08/2019

- Solved problems of freshmen students about study problems and major choice
- Organized workshop about research opportunities, internship and program application for students

SKILLS

Programming: C++, MATLAB, C, Python, ARM

Application: CATIA, Origin, SolidWorks, Arduino, LabVIEW, OpenCV, SmartFusion, PyTorch, Qt, ROS, Blender

HONORS & AWARDS

Jackson and Muriel Lum Scholarship

09/2019

Undergraduate Merit Scholarship (Top 10%)

08/2019

Undergraduate Merit Scholarship (Top 10%)

08/2018

National Encouragement Scholarship

09/2018

John Wu & Jane Sun Sunshine Scholarship

09/2018

SJTU Outstanding Student

09/2018

Yu Liming Scholarship

09/2017