Yixuan Wang

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EDUCATION

University of Michigan, Ann Arbor (UM) Ann Arbor, MI
B.S. in Computer Science (**GPA:** 4.0/4.0) 09/2019 - 05/2021(Expected)
Courses: Data Structure& Algorithm; Introduction to Machine Learning; Autonomous Robotics; Introduction to Computer Vision; Deep Learning for Computer Vision; Introduction to Embedded System Design

University of Michigan - Shanghai Jiao Tong University Joint Institute Shanghai, China
B.E. in Mechanical Engineering (**GPA:** 3.82/4.0 **Rank:** 1/56) 09/2017 - 08/2021 (Expected)
Courses: Dynamics& Vibrations; Thermodynamics; Solid Mechanics; Fluid Mechanics; Design and Manufacturing

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
- Improve posterior constraints of GMM EM algorithm to handle obstacle interaction and self-intersection of deformable objects
- Incorporate prediction model of deformable object to handle severe occlusion during the tracking
- Validate ideas in simulation environment and real experiments
- Wrote the research paper targeting at International Conference on Robotics and Automation

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 - Present
- Segment soft robots in real time based on texture segmentation using Gabor filter and k-means clustering
- Keep track of the shape based on Bezier curve fitting and Ceres solver
- Apply 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

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]**

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