

Qianjun Xia

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Education

Columbia University , MS in Mechanical Engineering	Sept 2024 – Present
• GPA: 4.12/4.0	
• Concentration: Robotics and Control	
Shanghai Jiao Tong University , BS in Mechanical Engineering	Sept 2020 – Jun 2024
• GPA: 82.76/100	
• Double Major: Mathematics and Applied Mathematics	

Internship

Shanghai ABB Engineering Co., Ltd , Vision Algorithm Intern	Jun 2023 – Sept 2023
• Assisted algorithm engineers with vision algorithm development and experiment.	
• Completed a demo of a binocular vision system with Halcon used for completing the work of auto tire assembly; achieved a positioning accuracy of 1mm.	

Research Experience

Video-Based Parameter Estimation , Creative Machine Lab	Mar 2025 – Present
<i>Supervisor: Jiong Lin, Hod Lipson</i>	
• Designed and implemented simulation environments to model the motion of elastic objects under gravity and actuator forces.	
• Generated large-scale datasets from simulation, incorporating varied object geometries, actuation patterns.	
• Applied the TimeSformer video understanding model to predict object physical parameters from multi-frame visual data.	
Magnetic Wire-Guiding Robot , – Shanghai Jiao Tong University	May 2023 – Aug 2024
<i>Supervisor: Dong Wang</i>	
• Led a team of three members to design a magnetic wire-guiding device to help doctors in interventional surgeries. The guide wire's is made up of magnetic material and soft material. A robotic arm is used to control the magnet and drive the rotation of the guide wire's head to guide the direction	
• Used SolidWorks to design and model the wire-guiding device; coded with Python to control the robot arm and two motors with a Xbox controller	
• Used PNP algorithm to calibrate the the tip of the wire with a monocular camera; achieved a position accuracy less than 1mm.	
• Based on the Cosserat Rod Theory, developed a Finite Element Algorithm to anticipate the Deformation of an elastic rod under a certain magnetic field.	

Extracurricular Activity

Shanghai Jiao Tong University Racing Car Team , Car body Group	Sept 2021 – Dec 2022
• Took charge of the manufacture of the monocoque shell and the rest of the body-related components, such as seat belts and seat fixtures.	
• Drew machining drawings; participated in car body making and assembly; conducted car maintenance and repairing.	

Technologies

Languages: Python, C++, MATLAB, R

Technologies: Solidworks, Fusion360, UG, Catia, Adams, Ansys