YIZHOU CHEN

Office 1020, 2505 Hayward St, Ann Arbor, MI 48109
720-257-1842 ◇ yizhouch@umich.edu ◇ Google Scholar ◇ Personal Website

EDUCATION

University of Michigan - Ann Arbor, MI *Aug 2023 - May 2027 (expected)*
Ph.D. Student, Robotics *GPA: 3.72/4.00*

University of Michigan - Ann Arbor, MI *Aug 2020 - May 2023*
M.S.E., Mechanical Engineering *GPA: 3.97/4.00*

University of Colorado - Boulder, CO *Aug 2015 - May 2020*
B. Eng., Mechanical Engineering; Minor in Applied Math, Electrical Engineering *GPA: 3.87/4.00*

TECHNICAL SKILLS

Programming Languages: Python, MATLAB, C++
Tools: PyTorch, Numpy, Theseus, IPOPT, Scipy, PyBullet, Isaac Sim, Simulink

RESEARCH INTERESTS

Robotics Perception, Modeling, and Planning in Deformable Object Manipulation, Robot Learning
Computer Graphics Differentiable Simulation, Deformable Object Modeling, FEM

SELECTED PUBLICATIONS

DEFT: Differentiable Branched Discrete Elastic Rods for Modeling Furcated DLOs in Real-Time
Yizhou Chen, Xiaoyue Wu, Yeheng Zong, Anran Li, Yuzhen Chen, Julie Wu, Bohao Zhang, Ram Vasudevan.
In Submission.

Differentiable Discrete Elastic Rods for Real-Time Modeling of Deformable Linear Objects
Yizhou Chen, Yiting Zhang, Zachary Brei, Tiancheng Zhang, Yuzhen Chen, Julie Wu, Ram Vasudevan.
CoRL 2024.

Visuo-Tactile Transformers for Manipulation
Yizhou Chen, Andrea Sipos, Mark Van der Merwe, Nima Fazeli.
CoRL 2022.

RESEARCH EXPERIENCE

Deformable Object Modeling Jul 2022 - Present
Advisor: Ram Vasudevan

Develop a novel framework that integrates a differentiable physics-based model with a learning algorithm to accurately model deformable linear objects (DLOs) and branched DLOs in real time, outperforming current state-of-the-art methods.

Deformable Object Perception Jan 2023 - Present
Advisor: Ram Vasudevan *Mentees: Yuzhen Chen, Anran Li, Tiancheng Zhang, Yeheng Zong*

Integrate modeling with perception to robustly track DLOs under heavy occlusion, and develop a real-time perception pipeline that detects branched DLOs while accurately tracking the orientation of connectors and sockets for robust plug-in tasks.

Deformable Object Manipulation Sep 2024 - Present
Advisor: Ram Vasudevan *Mentee: Xiaoyue Wu*

Integrating modeling with safety guaranteed planners enables real-world manipulation tasks, e.g., shape matching and thread insertion, and progressing toward real-time planning capabilities.

Visuo-Tactile Representation Learning Mar 2021 - Jun 2022
Advisor: Nima Fazeli

Developed a novel multimodal representation learning approach that integrates visuo-tactile feedback to enhance model-based reinforcement learning and planning.

WORK EXPERIENCE

Incoming Applied Scientist Intern, Amazon Robotics June 2025 - Sept 2025
Mentor: Tianjian Chen, Manager: Patrick Hammer

Will work with the Manipulation Robotics and Science team on an open-source physics simulation project.

TEACHING EXPERIENCE

ROB 101: Computational Linear Algebra Sep 2024 - Dec 2024
Graduate Student Instructor

Designed a PCA project for students, and addressed students' questions about course materials.

ME 360: Modeling, Analysis and Control of Dynamic Systems Jan 2021 - May 2021
Graduate Student Instructor

Graded students' homework and exams, and addressed students' questions about course materials.

ACTIVITIES AND HONORS

Reviewer: RSS, CoRL		2024 - Present
Graduate Research Assistant: Smart Manufacturing	*Advisor: Kira Barton*	2021
Department Service: MEGC Workshop Co-Chair		2020–2021
Research Assistant: Mechatronics System Design	*Advisor: Robert MacCurdy*	2019–2020
Research Assistant: Material Science	*Advisor: Xiaobo Yin, Yao Zhai*	2016–2019
CAD Engineer: Engineering for Social Innovation	*Advisor: Dan Riffell*	*2019–2020*
Dean's Honor List		2015–2019

Last updated: May 2025.