

# YIZHOU CHEN

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

## EDUCATION

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<b>University of Michigan - Ann Arbor, MI</b> Ph.D. Student, Robotics	<i>Aug 2023 - May 2027 (expected)</i> <i>GPA: 3.72/4.00</i>
<b>University of Michigan - Ann Arbor, MI</b> M.S.E., Mechanical Engineering	<i>Aug 2020 - May 2023</i> <i>GPA: 3.97/4.00</i>
<b>University of Colorado - Boulder, CO</b> B. Eng., Mechanical Engineering; Minor in Applied Math, Electrical Engineering	<i>Aug 2015 - May 2020</i> <i>GPA: 3.87/4.00</i>

## TECHNICAL SKILLS

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

## RESEARCH INTERESTS

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<b>Robotics</b>	Perception, Modeling, and Planning for Wireharness Autonomy, Robot Learning
<b>Computer Graphics</b>	Differentiable Simulation, Deformable Objects Modeling

## SELECTED PUBLICATIONS

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<b>DEFT: Differentiable Branched Discrete Elastic Rods for Modeling Furcated DLOs in Real-Time</b> <b>Yizhou Chen</b> , Xiaoyue Wu, Yeheng Zong, Anran Li, Yuzhen Chen, Julie Wu, Bohao Zhang, Ram Vasudevan. In Submission.
<b>Differentiable Discrete Elastic Rods for Real-Time Modeling of Deformable Linear Objects</b> <b>Yizhou Chen</b> , Yiting Zhang, Zachary Brei, Tiancheng Zhang, Yuzhen Chen, Julie Wu, Ram Vasudevan. CoRL 2024.
<b>Visuo-Tactile Transformers for Manipulation</b> <b>Yizhou Chen</b> , Andrea Sipos, Mark Van der Merwe, Nima Fazeli. CoRL 2022.

## RESEARCH EXPERIENCE

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<b>Wireharness Modeling</b> <i>Advisor: Ram Vasudevan</i>	Jul 2022 - Present
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.	
<b>Wireharness Perception</b> <i>Advisor: Ram Vasudevan</i>	Jan 2023 - Present
<i>Mentees: Yuzhen Chen, Anran Li, Tiancheng Zhang, Yeheng Zong</i>	
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.	

Wireharness Planning

Advisor: Ram Vasudevan

Sep 2024 - Present

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

Advisor: Nima Fazeli

Mar 2021 - Jun 2022

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

TEACHING EXPERIENCE

ROB 101: Computational Linear Algebra

Graduate Student Instructor

Sep 2024 - Dec 2024

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

ME 360: Modeling, Analysis and Control of Dynamic Systems

Graduate Student Instructor

Jan 2021 - May 2021

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

ACTIVITIES AND HONORS

Reviewer: RSS, CoRL

Graduate Research Assistant: Smart Manufacturing

Department Service: MEGC Workshop Co-Chair

Research Assistant: Mechatronics System Design

Research Assistant: Material Science

Dean's Honor List

2024 - Present

2021

2020–2021

2019–2020

2016–2019

2015–2019

Advisor: Kira Barton

Advisor: Robert MacCurdy

Advisor: Xiaobo Yin, Yao Zhai