

# Yuanshao Yang

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Last updated: August 16, 2024

## EDUCATION

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***Aug 2023 - Present***

**University of Michigan - Ann Arbor**

College of Engineering

Mechanical Engineering BSE / Concentration in Robotics

GPA: 4.00/4.00

***Sept 2021 - July 2023***

**Sichuan University, Chengdu**

Sichuan University - Pittsburgh Institute

Bachelor of Engineering - Mechanical Engineering

GPA: 3.84/4.00

## HONORS & AWARDS

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Aug 2024, University of Michigan

College of Engineering Scholarship (\$2,000)

Dec 2023 / May 2024, University of Michigan

University Honors

Dec 2023 / June 2024, University of Michigan - College of Engineering

Dean's List

Oct 2023, Sichuan University

Dean's List (10 % Annual Tuition, 30/230)

Oct 2022, Sichuan University

Academic Star Scholarship (20 % Annual Tuition, 3/230)

Oct 2022, Sichuan University

Comprehensive Academic Scholarship, 2nd Prize (TOP 4 %)

Oct 2022, Sichuan University

Outstanding Student Leader of the Year

## PROJECTS

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**Series Spring Design & Evaluation for [Open-Source Leg](#)**

July 2024 - Present

**Instructor: Prof. Elliott Rouse, Zachary Bons**

[Neurobionics Lab](#), Robotics, University of Michigan

- Literature review of torsional spring design
- CAD design to link design series-spring sets
- Testing the performance of the series-spring design and backlash model

**Software Library Generalization for [Open-Source Leg](#)**

Mar 2024 - Present

**Instructor: Prof. Elliott Rouse, Senthur Ayyappan**

[Neurobionics Lab](#), Robotics, University of Michigan

[GitHub Repository Posted](#)

- Literature review on structure of prosthetic legs and 3-Phase Brushless DC Motors
- Redesign the Python Library for compatibility with alternative hardware
- Add support to alternative actuator controllers to broaden hardware choices
- Evaluate actuator performance through test of Step Response and Time-Domain Specifications

**Development & Motion Analysis of Robot Swimmer**

Dec 2023 - Present

**Instructor: Prof. Alex K. Shorter**

Mechanical Engineering, University of Michigan

[GitHub Repository Posted](#)

- Develop an E. coli-based robot swimmer model with a sphere head and quad flagella
- Design & optimize the CAD model for robots' smooth 2-D motion in uniform, viscous flow

- Validate the mechanical design by CFD analysis
- Use correlation analysis towards design parameters to optimize mechanical design
- Develop a path-planning algorithm for obstacle avoidance
- Design the feedback control model to perform reference tracking

## WORK EXPERIENCE

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### Instructional Aid (IA) of ME360 - **System Dynamics**

August 2024 - Present

**Full Name:** *Modeling, Analysis and Control of Dynamic Systems*

**Instructor:** Prof. Uduak Inyang-Udoh

Mechanical Engineering, University of Michigan

- Hold office hours and answer questions in-person / remote
- Take trial exams and offer suggestions on exam question set-ups
- Assist Graduate Student Instructor (GSI) with homework solutions

## SKILLS

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- Programming
  - C/C++, Python (PyTorch, Scikit-Learn, etc)
- Tools
  - Keil MDK, MATLAB & Simulink Toolbox, LaTeX, SolidWorks, AutoCAD, MSC Adams