

# Haoyang Wu

Email: [haoyangw@umich.edu](mailto:haoyangw@umich.edu)

## Education

---

University of Michigan

Aug 2025 ~ May 2027 (Expected)

BSE in Computer Science

Shanghai Jiao Tong University

Aug 2023 ~ Aug 2027 (Expected)

BE in Mechanical Engineering

Overall GPA: 3.97/4.0 (rank 1/336) ; Major GPA: 4.0/4.0 (rank 1/336)

## Publications

---

**Holistic Surgical Phase Recognition with Hierarchical Input Dependent State Space Models**

**Haoyang Wu**, Tsun-Hsuan Wang, Mathias Lechner, Ramin Hasani, Jennifer A. Eckhof, Ozanan R. Meireles, Guy Rosman, Yutong Ban, Daniela Rus

In submission to *IEEE Transactions on Medical Imaging (TMI)*

## Research Experience

---

Research Intern at University of Michigan [ARM LAB](#)

Sep 2025~

Ongoing Project: *Uncertainty-Aware 3D Geometry and Physical Completion from Multimodal Sensor Data*

Advisor: Prof. Dmitry Berenson

Research Intern at Shanghai Jiao Tong University [SIRIUS Lab](#)

Jan 2024~

Project: *Surgical Phase Recognition with State Space Models*

- Analyzed spatial-temporal and local-global dynamics for long video understanding.
- Developed a temporally consistent feature extractor to enhance focus on salient temporal features.
- Developed HID-SSM, a model that captures both local and global temporal patterns for video-level decision making.
- Established new state-of-the-art with HID-SSM on surgical phase recognition: +2.8% (Cholec80), +4.3% (MICCAI2016), +12.9% (Heichole).
- Analyzed and visualized HID-SSM's temporal selectivity and long-term dependency awareness.
- Composed a draft journal paper and created most accompanying figures.

Advisor: Prof. Yutong Ban

## Internship Experience

---

Assistant Project Manager at Alibaba Group

Jul 2023~Aug 2023

Project: *Automated Navigation System*

- Organized group meetings and drafted progress reports; gained experience in project coordination.
- Developed software test plans and test cases to ensure quality control.
- Composed test reports and quality analysis.

Mentor: Lingbo Zhu

## Honors & Awards

---

- **Tang Jun Yuan Scholarship** *Jul 2025*
- **Shanghai Jiao Tong University first class Scholarship** *Dec 2024*
- **John Wu and Jane Sun Sunshine Scholarship** *Nov 2024*
- **2023-2024 National Undergraduate Scholarship** *Sep 2024*
- **UM-SJTU JI Excellent Freshman Scholarship** *Nov 2023*

## Exchanges

---

- **University of Oxford** *Jan 2025*  
Course taken: Artificial Intelligence and Machine Learning  
Grade: A, with 2025 Oxford Winter School Scholarship Award
- **Technical University Berlin** *Jan 2024~Feb 2024*  
Course taken: German Language (Level A1)  
Grade: 1.0 according to the German grading system

## Skills

---

- **Languages**  
C, C++, Python (Specialty in Pytorch, Jax, Triton), Matlab, Wolfram, Latex, HTML
- **Framework**  
Git, Linux
- **Speaks**  
Mandarin, English (TOEFL 113)

## Services

---

- **Reviewer of MICCAI 2025** *Jul 2025*  
- Reviewed two papers in COLAS workshop
- **Teaching Assistant of Course ECE2810J** *Sep 2025~Dec 2025*  
- Lecturer: Prof. Yutong Ban
- **Teaching Assistant of Course ECE2800J** *Feb 2025~Apr 2025*  
- Lecturer: Prof. Zhongqiang Ren
- **Teaching Assistant of Course ENGL1000** *Aug 2024~Dec 2024*  
- Lecturer: Prof. Christopher David Linforth
- **Student Advisor in UMJI Advising Center** *Mar 2024~*  
- Contribution to Piazza discussions among top 3 advisors in AC history; Organizer of the Freshman Course Selection Workshop, 2024 Fall semester
- **Assistant Admission Officer (Representative of UM-SJTU JI in Beijing)** *Mar 2024~*  
- Attended 5 college fairs in Beijing as the sole official representative of JI, connecting with and providing consultation to over 120 families  
- Participated in refining JI's transfer policy