

Zhuonan Hao

Ph.D. Student in Mechanical Engineering

CONTACT

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EDUCATION

University of California, Los Angeles **United States**
Doctor of Philosophy, Mechanical and Aerospace Engineering Jul. 2021 - Now
Advisor: M. Khalid Jawed GPA: 3.75/4.00

University of California, San Diego **United States**
Master of Science, Mechanical and Aerospace Engineering Sep. 2019 - Jun. 2021
Thesis: Design principles for locomotion synchronization in undulatory robot groups
Advisor: Nicholas Gravish GPA: 3.97/4.00

University of Wollongong **Australia**
Exchange, Mechatronics and Materials Engineering Jul. 2018 - Jul. 2019
Thesis: A novel semi-active vehicle suspension with a stiffness variable self-powered MR damper
Advisor: Weihua Li GPA: 3.25/4.00

Beijing Institute of Technology **People's Republic of China**
Bachelor of Science, Vehicle Engineering Sep. 2015 - Jul. 2019
Supervisor: Xueyuan Li GPA: 3.71/4.00

TEACHING

Teaching Assistant, UC Los Angeles Jan. - Mar. 2022
Subject: MAE M20 - Introduction to Computer Programming with MATLAB

Tutor, UC Los Angeles Aug. - Sep. 2021, 2022
Subject: MAE 101 - Statics and Strength of Materials

Teaching Assistant, UC San Diego Sep. - Dec. 2020
Subject: MAE 150 - Computer-Aided Design

RESEARCH

Structures-Computer Interaction Lab, UC Los Angeles Jul. 2021 - Now
Graduate Student Researcher
Area: soft robot design, modeling and control

Gravish Lab, UC San Diego Mar.2020 - Jun.2021
Graduate Research Assistant
Area: collective robotics, nonlinear control

Dynamics and Vibration Control Lab, UOW Dec. 2018 - Jul. 2019
Undergraduate Research Assistant
Area: vibration isolation, magnetorheological suspension

PUBLICATION

6. W. Zhou, JD Peralta, **Z. Hao**, N. Gravish. Lateral contact yields longitudinal cohesion in active undulatory systems. *Physics Review E*. 2022.
5. **Z. Hao**, W. Zhou, N. Gravish. Proprioceptive feedback design for gait synchronization in collective undulatory robots. *Advanced Robotics*. 2022.
4. **Z. Hao**. Design principles for locomotion synchronization in undulatory robot groups. *UC San Diego Electronic Theses and Dissertations*. 2021.
3. W. Zhou, **Z. Hao**, N. Gravish. Collective synchronization of undulatory movement through contact. *Physics Review X*. 2021.
2. X. Zhu, D. Ning, **Z. Hao**, W. Li, et al. Modelling and experimental evaluation of a variable stiffness MR suspension with self-powering capability. *Journal of Intelligent Material Systems and Structures*. 2020.
1. L.L. Ren, **Z. Hao**. A Simple Fix for Convolutional Neural Network via Coordinate Embedding. *arXiv, pp.arXiv-2003*. 2020.

- CONFERENCE**
3. Khalid Jawed, **Z. Hao**, S. Lim. Bacteria-inspired Bi-flagellated Soft Robot with Bundling and Tumbling Behavior. *Bulletin of the American Physical Society*. 2022.
 2. **Z. Hao**, W. Zhou, N. Gravish. Synchronized swimming: adaptive gait synchronization through mechanical interactions instead of communication. *Adaptive Motion in Animals and Machines*. 2021.
 1. W. Zhou, JD Peralta, **Z. Hao**, N. Gravish. Synchronized swimming: collisions drive gait compatibility in undulatory robots. *Bulletin of the American Physical Society*. 2021.

- HONOR & AWARD**
- Honorable Mention for Outstanding Poster in AMAM 2021** 2021
Virtual poster competition winner, AMAM2021 Virtual Organizing Committee
 - Outstanding Undergraduate** 2019
Awarded for the exemplary student, Beijing Institute of Technology
 - China Scholarship Council Scholarships (AUD \$20,000)** 2018-2019
National scholarship for studying abroad, China Scholarship Council
 - Honorable Mention of Mathematical Contest in Modeling** 2018
Top 25% team, COMAP
 - National Scholarship (CNY ¥8,000)** 2017
Top 1 student in School of Mechanical Engineering, Ministry of Education of P.R.China
 - National College Students' innovation and entrepreneurship training program (CNY ¥10,000)** 2017
Undergraduate research funds, Ministry of Industry and Information Technology
 - Annual Merit Undergraduate** 2016, 2017
Best undergraduate student, Beijing Institute of Technology
 - First Prize of the People's Scholarship (CNY ¥1,100)** 2016, 2017, 2018
Top 5% in School of Mechanical Engineering, Beijing Institute of Technology
 - Grand Prize of Capital College Students' Summer Holiday Social Practices Collections (Selected as an editors suggestion)** 2016
Coauthor to the best student paper, Beijing Municipal Education Commission

- LEADERSHIP**
- Conference Organizer, UC Los Angeles** Sep. 2022
Southern California Robotics Symposium (SCR 2022)
 - Workshop Organizer, UC San Diego** Oct. 2020
Robotics-Inspired Biology (IROS 2020)

- MEMBERSHIP** **American Physical Society** 2022 - Now

- REFERENCES**
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Mechanical and Aerospace Engineering
University of California, San Diego
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