

JIEFENG SUN

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Department of Mechanical Engineering, Colorado State University

EDUCATION

Ph.D.	Robotics and Control Colorado State University, USA	2017 - 2022 (expected)
M.S.	Mechanical Engineering Dalian University of Technology, China	2014 - 2017
B.S.	Mechanical Engineering Lanzhou University of Technology, China	2010 - 2014

PROFESSIONAL ACTIVITIES

Reviewer	Journal: IEEE/ASME Transactions on Mechatronics (TMECH) Bioinspiration & Biomimetics (B&B) Smart Materials and Structures IEEE Access IEEE/RSJ Robotics and Automation Letters (RA-L) Conference: IEEE/RSJ International Conference on Robotics and Automation (ICRA) IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS) IEEE/ASME International Conference on Advanced Intelligent Mechatronics(AIM) American Control Conference (ACC)
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TEACHING EXPERIENCE

Teaching Assistant	MECH 564: Fundamentals of Robot Mechanics and Controls
Guest Lecturer	MECH 568: Bio-inspired Robotics

HONOR AND AWARD

2017	Scott Inaugural Graduate Fellowship of CSU Mechanical Engineering
2018	Best Student Paper Award Finalist in International Conference on Intelligent Robots and Systems (IROS)

PUBLICATIONS

Journal Articles

1. H. Hsiao, **J. Sun**, H. Zhang, and J. Zhao, "A mechanically intelligent and passive gripper for aerial perching and grasping," *IEEE/ASME Transactions on Mechatronics*, Under Revision

2. **J. Sun** and J. Zhao, “Physics-based modeling of twisted-and-coiled actuators using cosserat rod theory,” *IEEE Transactions on Robotics*, 2021
3. Y. Tang, Y. Chi, **J. Sun**, T.-H. Huang, O. H. Maghsoudi, A. Spence, J. Zhao, H. Su, and J. Yin, “Leveraging elastic instabilities for amplified performance: Spine-inspired high-speed and high-force soft robots,” *Science advances*, vol. 6, no. 19, p. eaaz6912, 2020
4. **J. Sun**, B. Tighe, Y. Liu, and J. Zhao, “Twisted-and-coiled actuators with free strokes enable soft robots with programmable motions,” *Soft robotics*, vol. 8, no. 2, pp. 213–225, 2021
5. **J. Sun** and J. Zhao, “An adaptive walking robot with reconfigurable mechanisms using shape morphing joints,” *IEEE Robotics and Automation Letters (RAL)*, vol. 4, no. 2, pp. 724–731, 2019
6. B. Pawlowski, **J. Sun**, J. Xu, Y. Liu, and J. Zhao, “Modeling of soft robots actuated by twisted-and-coiled actuators,” *IEEE/ASME Transactions on Mechatronics*, vol. 24, no. 1, pp. 5–15, 2018

Conference Proceedings and Presentations

1. **J. Sun** and J. Zhao, “Modeling and simulation of soft robots driven by artificial muscles: an example using twisted-and-coiled actuators,” in *2022 American Control Conference (ACC)*. IEEE, Under Review, Invited Paper
2. **J. Sun**, B. Tighe, and J. Zhao, “Tuning the energy landscape of soft robots for fast and strong motion,” in *2020 IEEE International Conference on Robotics and Automation (ICRA)*. IEEE, 2020, pp. 10 082–10 088
3. **J. Sun** and J. Zhao, “Integrated actuation and self-sensing for twisted-and-coiled actuators with applications to innervated soft robots,” in *2020 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*. IEEE, 2020, pp. 8795–8800
4. H. Zhang, **J. Sun**, and J. Zhao, “Compliant bistable gripper for aerial perching and grasping,” in *2019 International Conference on Robotics and Automation (ICRA)*. IEEE, 2019, pp. 1248–1253
5. **J. Sun**, B. Pawlowski, and J. Zhao, “Soft manipulators with programmable motion using twisted-and-coiled actuators (conference presentation),” in *Electroactive Polymer Actuators and Devices (EAPAD) XXI*, vol. 10966. International Society for Optics and Photonics, 2019, p. 109660Q
6. B. Pawlowski, **J. Sun**, and J. Zhao, “Dynamic modeling of soft manipulators actuated by twisted-and-coiled actuators,” in *2018 IEEE Conference on Decision and Control (CDC)*. IEEE, 2018, pp. 409–414
7. **J. Sun**, B. Pawlowski, and J. Zhao, “Embedded and controllable shape morphing with twisted-and-coiled actuators,” in *2018 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*. IEEE, 2018, pp. 5912–5917

Patent

1. H. Zhang, J. Zhao, and **S. Jiefeng**, “Compliant bistable gripper for aerial perching and grasping,” Sep. 29 2020, **US Patent** 10,787,259
2. F. Qu, T. Sun, and **S. Jiefeng**, “An experimental crane for college labs,” Sep. 2017, issued by National Intellectual Property Administration, PRC. CN ZL201510528289.9

PROFESSIONAL DEVELOPMENT

- Best Practices in Teaching at CSU - Classroom Climate Experience and Reflection (a professional development program that prepares students for an academic career and teaching. Jan 2022.)

MENTORED STUDENTS

- **Undergraduate:** Jeff Larchar, Sydney Spiegel, Clint Middlemist
- **Graduate:** Long Chen, Ajai Singh, Brandon Tighe

Updated 11/12/2021