

Runze Zuo

runzezuo.com
zuorunze@umich.edu

Education

University of Michigan – Ann Arbor

PhD. Student in Mechanical Engineering

Aug. 2023 – Present

Ann Arbor, MI

University of Toronto – St. George Campus

Bachelor's Degree in Computer Engineering

Aug. 2019 – Jun. 2023

Toronto, ON

Experience

Ph.D. Student

Soft robotics research

- Regulator-embedded soft actuator design
- Variable compliance soft arm design

Aug. 2023 – Present

Ann Arbor, MI

Undergraduate Researcher

Soft robotics research

- Soft manipulator and soft sensor
- Untethered underwater soft robot system
- Portable electrochemical workstation

May 2019 – Jun. 2023

Ann Arbor, MI

Publications

Embedded Valves for Distributed Control of Soft Pneumatic Actuators

Runze Zuo, M Mayank, DH Han, D Bruder

IROS 2024

A soft robotic gripper with anti-freezing ionic hydrogel-based sensors for learning-based object recognition

Runze Zuo, Z Zhou, B Ying, X Liu

2021 IEEE International Conference on Robotics and Automation (ICRA)

An anti-freezing, ambient-stable and highly stretchable ionic skin with strong surface adhesion for wearable sensing and soft robotics

B Ying, RZ Chen, Runze Zuo, J Li, X Liu

Advanced Functional Materials 2021

An ionic hydrogel-based antifreezing triboelectric nanogenerator

B Ying, Runze Zuo, Y Wan, X Liu

ACS Applied Electronic Materials 2022

A sensory soft robotic gripper capable of learning-based object recognition and force-controlled grasping

Z Zhou, Runze Zuo, B Ying, J Zhu, Y Wang, X Wang, X Liu

IEEE Transactions on Automation Science and Engineering 2022

A nitrocellulose paper-based multi-well plate for point-of-care ELISA

Z Qin, Z Huang, P Pan, Y Pan, Runze Zuo, Y Sun, X Liu

Micromachines 2022

Robotic microinjection enables large-scale transgenic studies of *Caenorhabditis elegans*

Peng Pan, Michael Zoberman, Pengsong Zhang, Sharanja Premachandran, Sanjana Bhatnagar, Pallavi P Pilaka-Akella, William Sun, Chengyin Li, Charlotte Martin, Pengfei Xu, Zefang Zhang, Ryan Li, Wesley Hung, Hua Tang, Kailynn MacGillivray, Bin Yu, Runze Zuo, Karinna Pe, Zhen Qin, Shaojia Wang, Ang Li, W Brent Derry, Mei Zhen, Arneet L Saltzman, John A Calarco, Xinyu Liu

Nature Communications, 2024

Technical Skills

Programming Languages: C/C++/Python/MATLAB/Verilog/SQL/Mathematica

Electrical Skills: PCB Design/Soldering/Mechatronic-system-design

Manufacturing and CAD: Milling/Lathing/Silicone-Molding/Solidworks/AutoCAD/3D-Printing/Laser-Cutting

Visual: Photography/Photoshop/Illustrator/Premiere