

# Baiyu Shi

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## RESEARCH INTERESTS

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**Robotics:** Chemical and Haptics Sensing, Human-robot Interaction, Medical Robotics, Robot Learning and Manipulation.

**Wellness Monitoring:** Biosensors, BioMEMS, Wearables.

## EDUCATION

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**Stanford University**

**Stanford, CA**

*1<sup>st</sup> year PhD. In Mechanical Engineering*

*September 2023 - Present*

- GPA: 4.187/4.3.
- Advisor: Professor Zhenan Bao

**University of California, Berkeley**

**Berkeley, CA**

*B.S. Bioengineering, Electrical Engineering and Computer Science (High Honors)*

*September 2019 - May 2023*

- GPA: 3.965/4.00.
- Advisors: Professor Robert J. Full, Professor Ken Goldberg, and Professor Gerard Marriott.
- Awards: UC Berkeley **Departmental Citation** in Bioengineering, 2023 Outstanding Graduate Student Instructor.

## PUBLICATION

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[4] **Bagging by Learning to Singulate Layers Using Interactive Perception.**

Lawrence Yunliang Chen, **Baiyu Shi**, Roy Lin, Daniel Seita, Ayah Ahmad, Richard Cheng, Thomas Kollar, David Held, Ken Goldberg. *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, October 2023, Detroit, USA.

[3] **A Trimodal Framework for Robot-Assisted Vascular Shunt Insertion When a Supervising Surgeon is Local, Remote, or Unavailable.**

Karthik Dharmarajan\*, Will Panitch\*, **Baiyu Shi**, Huang Huang, Lawrence Yunliang Chen, Thomas Low, Danyal Fer, Ken Goldberg. *IEEE International Symposium on Medical Robotics (ISMR)*, April 2023, Atlanta, USA.

[2] **AutoBag: Learning to Open Plastic Bags and Insert Objects.**

Lawrence Yunliang Chen, **Baiyu Shi**, Daniel Seita, Richard Cheng, Thomas Kollar, David Held, Ken Goldberg. *IEEE International Conference on Robotics and Automation (ICRA)*, May 2023, London, UK.

[1] **Automating Vascular Shunt Insertion with the dVRK Surgical Robot.**

Karthik Dharmarajan\*, Will Panitch\*, Muyan Jiang, Kishore Srinivas, **Baiyu Shi**, Yahav Avigal, Huang Huang, Thomas Low, Danyal Fer, Ken Goldberg. *IEEE International Conference on Robotics and Automation (ICRA)*, May 2023, London, UK.

## WORK & TEACHING EXPERIENCE

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**Shanghai View Precision Machinery Co.**

**Shanghai, China**

*Role: Mechanical Engineer Intern in Mold Design and Quality Control*

*Jan 2021- Mar 2021*

- Designed molds via AutoCAD for cold forging presses and coded Mazak CNC machines to manufacture gears in electrical tools.
- Conducted metallographic analysis to examine the quality of heat treatment.

**BioE 163 & BioE 163L Principles of Molecular and Cellular Biophotonics**

**Berkeley, CA**

*Role: Graduate Student Instructor (GSI)*

*Aug 2022 – May 2023*

- Led weekly discussions of 30 students covering lecture contents, worksheets, and relevant publications.
- Helped design lab procedures, prepare chemicals, and introduced wet lab experiments on biosensor development.
- Drafted and graded assignments on Gradescope.

## PROFESSIONAL SERVICE

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Conference Reviewer for *IEEE International Conference on Robotics and Automation (ICRA)*, 2023 and *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2023

## SKILLS

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- **Programming Languages (descending proficiency):** Python, MATLAB, ROS, C++, Java, HTML & CSS, R.
- **Software:** AutoCAD, COMSOL, ImageJ, LaTeX, SolidWorks.
- **Skills:** BioMEMS Design and Fabrication, Circuit Design, CNC Fabrication, ELISA, Fluorescence Microscopy, Metallographic Analysis, PCR, Western Blots, 3D printing.

## ACTIVITIES

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**Berkeley Showcase Volunteer**

**Berkeley, CA, Oct. 8<sup>th</sup>**

- Conducted robotics demos for Bay Area/Northern California students who are underrepresented, first generation, or attending an under-resourced school.