Anxing Xiao

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RESEARCH INTERESTS

My current research topics cover motion planning, assistive robotics, and autonomous system design. My long-term research goal is to develop intelligent robots that can infer and interact with the dynamic and open world in long-horizon tasks.

EDUCATION

National University of Singapore   *Jan 2023 - present*
Ph.D. student in Computer Science, GPA: 5.0/5.0
Advisors: [Prof. David Hsu](#)

Harbin Institute of Technology, Shenzhen   *Aug 2017 - Jun 2021*
B.Eng. in Automation (Robotics Track), GPA: 93.08/100 (Ranking 1/70)

University of California, Berkeley   *Aug 2019 - Sep 2020*
Visiting Student, GPA: 3.93/4.0
Advisor: [Prof. Koushil Sreenath](#); ICRA Best Paper Award Finalist for Service Robotics

EXPERIENCE

Robotic Perception and Intelligence Lab, SUSTech & CUHK   *Aug 2021 – Jun 2022*
Research Assistant with [Prof. Max Q.-H. Meng](#)   Shenzhen, China
Worked on autonomous trolley collection robots and fast Generalized Voronoi Diagrams generation.

Noah's Ark Lab, Huawei   *Jan 2021 – Jul 2021*
Research intern with [Prof. Jianzhuang Liu](#)   Shenzhen, China
Worked on image denoising algorithm based on Vector Quantized Variational Autoencoder and Swin Transformer.

Hybrid Robotics Lab, UC Berkeley   *Mar 2020 – Mar 2021*
Research intern with [Prof. Koushil Sreenath](#)   Berkeley, California
Worked on robotic guide dog and quadrupedal autonomous navigation with optimized jumping.

PUBLICATIONS

[1] B. Xia, H. Luan, Z. Zhao, X. Gao, P. Xie, **A. Xiao***, J. Wang*, and M. Q.-H. Meng, "Collaborative Trolley Transportation System with Autonomous Nonholonomic Robots" *Accepted by International Conference on Intelligent Robots and Systems (**IROS**)*, 2023.
[Paper] [Video]

[2] Y. Chen, Z. Xu, Z. Jian, G. Tang, Y. Yangli, **A. Xiao***, X. Wang*, and B. Liang, "Quadruped Guidance Robot for the Visually Impaired: A Comfort-Based Approach" *International Conference on Robotics and Automation (**ICRA**)*, 2023.
[Paper] [Video]

[3] Z. Jian, Z. Lu, X. Zhou, B. Lan, **A. Xiao***, X. Wang*, and B. Liang, "PUTN: A Plane-fitting based Uneven Terrain Navigation Framework" *International Conference on Intelligent Robots and Systems (**IROS**)*, 2022.
[Paper] [Video] [Code]

[4] **A. Xiao***, H. Luan*, Z. Zhao*, Y. Hong, J. Zhao, J. Wang, and M. Q-H Meng, "Robotic Autonomous Trolley Collection with Progressive Perception and Nonlinear Model Predictive Control" *International Conference on Robotics and Automation (**ICRA**)*, 2022.
[Paper] [Video]

[5] S. Gilroy, D. Lau, L. Yang, E. Izaguirre, K. Biermayer, **A. Xiao**, M. Sun, A. Agrawal, J. Zeng, Z. Li, and K. Sreenath, "Autonomous Navigation with Optimized Jumping through Constrained Obstacles on Quadrupeds" *International Conference on Automation Science and Engineering (**CASE**)*, 2021.
[Paper] [Video] Media coverage [Video Friday]

[6] **A. Xiao***, W. Tong*, L. Yang*, J. Zeng, Z. Li, and K. Sreenath, "Robotic Guide Dog: Leading a Human with Leash-Guided Hybrid Physical Interactions" *International Conference on Robotics and Automation (**ICRA**)*, 2021.
Best Service Robot Paper Finalist. [Paper] [Video] Media coverage: [Daily Mail] [New Scientist] [Tech Xplore] [Daily Californian] [Independent] [Futurism] [China Daily] [DeepTech (Chinese)]

[7] Y. Wu, **A. Xiao**, H. Chen, S. Zhang, Y. Liu, "Amphibious Robot's Trajectory Tracking with DNN-Based Nonlinear Model Predictive Control", *International Conference on Advanced Intelligent Mechatronics (**AIM**)*, 2020
[Paper]

Selected Awards and Honors

- NUS Research Scholarship *2023*
- Best Paper Award Finalist for Service Robotics at **ICRA '21** *2021*
- Dean's Award. *2021*
- First-class Undergraduate Academic Scholarship *2018-2021*
- Provincial-Level Merit Student. *2019*
- National Scholarship. *2018*

Professional Responsibilities

- *Journal Reviewing:* IEEE T-RO, IEEE RA-L, Biomimetic Intelligence and Robotics
- *Conference Reviewing:* ICRA '22 '23, IROS '22, ROBIO '21.
- *Mentorship*
  - Students
    - Bingyi Xia [P.1], MS @ SUSTech *2022 - 2023*
    - Xuheng Gao [P.1], MS @ SUSTech *2022 - 2023*
    - Yanbo Chen [C.6], Undergrad @ HITsz → MS @ Tsinghua Univ. *2021 - 2022*
    - Zhengzhe Xu [C.6], Undergrad @ HITsz *2021 - 2022*
    - Xiao Zhou [C.5], Undergrad @ HITsz *2021 - 2022*

Skills

- **Programming:** Python, C/C++, MATLAB, HTML
- **Softwares & Tools:** ROS, PyTorch, OpenCV, CasADi, LCM, Solidworks, Gazebo, Isaac Sim, Git, LaTeX
- **Hardware:** Multiple Motors and Sensors, Arduino, Raspberry Pi, Basic Mechanical Design
- **Sports:** Table Tennis, Basketball, Soccer