Anxing Xiao

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EDUCATION

University of British Columbia *Sep 2022 – Jul 2026 (expected)*

- Incoming Ph.D. in Electrical and Computer Engineering, Advisor: *Prof. Renjie Liao, Prof. Lele Wang*
- Four Year Doctoral Fellowship

Harbin Institute of Technology *Sep 2017 – Jul 2021*

- B.Eng. in Automation, Shenzhen Campus, GPA: 93.08/100 (Rank 1/70), Advisor: *Prof. Haoyao Chen*
- National Scholarship (top 0.2%); Dean's Award (Highest Undergraduate Award); First-class Undergraduate Academic Scholarship (top 5%); Provincial-Level Merit Student (top 1%).

University of California, Berkeley *Aug 2019 - Sep 2020*

- Visiting Student, GPA: 3.93/4.0, Advisor: *Prof. Koushil Sreenath*
- Selected Courses (all grad level): Advanced Control System, State Estimation, Robotic Manipulation, 3D Vision, Hybrid System, Mathematical Methods in Engineering

RESEARCH EXPERIENCE

Robot Perception & Intelligence Lab, Southern University of Science and Technology *Aug 2021 – Jun 2022*

Research and Teaching Assistant, *Advisor: Prof. Max Q.-H. Meng, Prof. Hong Zhang*

- Designed a robotic trolley collection system that can collect trolleys. Proposed a progressive perception system to locate the target trolley, and implement the planning system for safe navigation and accurate docking.
- Proposed a method to compute Generalized Voronoi Diagram (GVD) using Networks without training. Using the heuristic information provided by GVD, improved the performance of RRT*.

Noah's Ark Lab, Huawei Technologies *Jan 2021 – Jul 2021*

Research Intern, *Advisor: Prof. Jianzhuang Liu*

- Designed and implemented image denoising algorithm based on Vector Quantized Variational Autoencoder.
- Implemented image denoising algorithm based on Swin Transformer.

Hybrid Robotics Lab, UC Berkeley *Mar 2020 – Oct 2020*

Undergraduate Researcher, *Advisor: Prof. Koushil Sreenath*

- Added high-level computer and multiple sensors on the quadrupedal robot Mini-Cheetah. Deployed planning, perception, and communication for Mini-Cheetah based on ROS and LCM.
- Designed and implemented the robotic guide dog that automatically led the blind human to navigate in the narrow space without any collisions.

Networked Robotics and Systems Lab, Harbin Institute of Technology *Feb 2019-Jul 2019*

Undergraduate Researcher, *Advisor: Prof. Haoyao Chen*

- Designed and implemented a DNN-based nonlinear model predictive controller that achieves amphibious robot trajectory tracking on uneven terrain. Built simulation environment for data collecting based on Gazebo.

PUBLICATION

Google Scholar

- Yanbo Chen, Zhengzhe Xu, Zhuozhu Jian, Gengpan Tang, Yunong Yangli, **Anxing Xiao**, Xueqian Wang, Bin Liang, "Quadruped Guidance Robot for the Visually Impaired: A Comfort-Based Approach", *Submitted to IEEE International Conference on Robotics and Automation (ICRA) 2023*.
- Zhuozhu Jian, Zihong Lu, Xiao Zhou, Bin Lan, **Anxing Xiao**, Xueqian Wang, Bin Liang, "PUTN: A Plane-fitting based Uneven Terrain Navigation Framework", *Accept to IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS) 2022.*

- **Anxing Xiao***, Hao Luan*, Ziqi Zhao*, Yue Hong, Jieting Zhao, Weinan Chen, Jiankun Wang, Max Q-H Meng, "Robotic Autonomous Trolley Collection with Progressive Perception and Nonlinear Model Predictive Control", *Accept to IEEE International Conference on Robotics and Automation (ICRA) 2022.*
- Scott Gilroy, Derek Lau, Lizhi Yang, Ed Izaguirre, Kristen Biermayer, **Anxing Xiao,** Mengti Sun, Ayush Agrawal, Jun Zeng, Zhongyu Li, Koushil Sreenath. "Autonomous navigation for quadrupedal robots with optimized jumping through constrained obstacles", *IEEE 17th International Conference on Automation Science and Engineering (CASE) 2021.*
- **Anxing Xiao***, Wenzhe Tong*, Lizhi Yang*, Jun Zeng, Zhongyu Li and Koushil Sreenath, " Robotic Guide Dog: Leading Human with Leash-Guided Hybrid Physical Interaction", *IEEE International Conference on Robotics and Automation (ICRA) 2021. ICRA Best Paper Award Finalist for Service Robotics.*
- Yaqi Wu*, **Anxing Xiao***, Haoyao Chen, Shiwu Zhang and Yunhui Liu, "Amphibious Robot's Trajectory Tracking with DNN-Based Nonlinear Model Predictive Control", *IEEE/ASME International Conference on Advanced Intelligent Mechatronics (AIM) 2020.*

* Denotes equal contribution

ACADEMIC SERVICE

Journal Reviewer

- IEEE Transactions on Robotics (T-RO), 2021
- Biomimetic Intelligence and Robotics, 2021

Conference Reviewer

- IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2022
- IEEE International Conference on Robotics and Automation (ICRA), 2022
- IEEE International Conference on Robotics and Biomimetics (ROBIO), 2021

Undergraduate Research Mentor

- Quadruped Guidance Robot, Tsinghua University, 2021.9 – 2022.3
- Plane-Fitting based Uneven Terrain Navigation Framework, Tsinghua University, 2021.9 – 2022.3

SKILLS

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