# Anxing Xiao

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## EDUCATION

**Harbin Institute of Technology,** China *Sep 2017 – July 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,** United States *Aug 2019 - Aug 2020*

- Visiting Student, GPA: 3.93/4.0, Advisor: *Prof. Koushil Sreenath*
- Selected Courses (all grad level): ME232 Advanced Control System, EEC220b State Estimation, EECS106b Robotic Manipulation, CS294 3D Vision, EE291 Hybrid System, E231 Mathematical Methods in Engineering

## RESEARCH EXPERIENCE

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

***Research Assistant**, Advisor: Prof. Max Q.-H. Meng*

- 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*. (ongoing)

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

***Computer Vision Research Intern**, Advisor: Prof. Jianzhuang Liu*

- Designed and implemented image denoising algorithm based on Vector Quantised Variational AutoEncoder.

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

***Undergraduate Research Assistant**, 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-July 2019*

***Undergraduate Research Assistant**, 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

- 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/RSJ International Conference on Intelligent Robots and Systems (IROS) 2022*. Student Advisor
- Zhuozhu Jian, Zihong Lu, Xiao Zhou, Bin Lan, **Anxing Xiao**, Xueqian Wang, Bin Liang, "PUTN: A Plane-fitting based Uneven Terrain Navigation Framework", *Submitted to IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS) 2022*. Student Advisor
- **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

- 2021 International Conference on Robotics and Automation (ICRA)
- 2021 International Conference on Robotics and Biomimetics (ROBIO)

### Undergraduate Research Mentor

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

## 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