Guojing Huang

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EDUCATION

Johns Hopkins University, Robotics MSE   Aug 2025 – Jul 2027(expected)

The University of Texas at Austin (UT-Austin), The International Academy Program   Jan 2025 – Feb 2025
(2025 Winter, Engineering major track)
- Coursework: Engineering Design (A), Engineering Physics (A), Speaking E (A), Writing E (A)

Southern University of Science and Technology (SUSTech), BE in Robotics Engineering   Sep 2021 – Jul 2025
- GPA: 3.60 / 4.00
- English Proficiency: IELTS 7.0 (L: 7.0, R: 8.5, W: 7.0, S: 6.0)
- Coursework: Robotic Actuation System (96), Fundamentals of Sensing Technology (95), Mechanisms and Applications (94), Robot Operating System (94), Robot Modeling and Control (93), Mechatronic Systems (92), Collaborative Robot Learning (91), CAD and Engineering Drawing (91)

PUBLICATIONS

1. Sun, J., **Huang, G.**, Lin, C., Pan, W., Kong, H.C., Gou, G., Huang, S., Leng, Y., Fu, C., and Chen, Z., 2024. Flexible Multi-Channel Electrical Stimulation System for Assisting Grasping in Patients with Hemiplegia. *2024 International Conference on Advanced Robotics and Mechatronics (ICARM)*.

2. Sun, H, Huang, B., Zhang, Z., Xu, R., **Huang, G.**, Huang, G., Yin, J., Qiu, N., Chen, H., Zhang, W., Pan, J., Wan, F., Song, C., 2024. Overconstrained Locomotion. *2024 International Symposium on Robotics Research*.

3. Chen, Y., Zhang, C., Gu, P., Qiu, J., Yin, J., Qiu, N., **Huang, G.**, Huang, B., Zhang, Z., Deng, H., Zhang, W., Wan, F., and Song, C., 2024. Evolutionary Morphology Towards Overconstrained Locomotion via Large-Scale, Multi-Terrain Deep Reinforcement Learning. *2024 6th IEEE/IFToMM International Conference on Reconfigurable Mechanisms and Robots*.

4. Gou, G., Kong, H.C., Sun, J., Lin, C., Pan, W., **Huang, G.**, Leng, Y., Guo, Y., and Fu, C., 2024. IMU-Based Prediction of Multiple Grasping Gesture Intentions for Enhanced Functional Electrical Stimulation Control. *2024 International Conference on Advanced Robotics and Mechatronics (ICARM)*.

5. Chenglong Fu, Chengjie Zhang, Yuquan Leng, **Guojing Huang**, Yaoyu Cheng, CN116243795B, China, An object grasping method and mixed reality equipment based on mixed reality.

RESEARCH EXPERIENCE

Design Principle and Motion Control Simulation of Pseudo-open-chain Mechanism of   Sep 2024 - Jul 2025
Overconstrained Quadruped Robot Limb
Advisor: Prof. Chaoyang Song, Southern University of Science and Technology   Shenzhen, China
- Developed a novel overconstrained quadrupedal robotic limb based on Yu & Baker's 6R mechanism, achieving structural integrity (factor of safety >2.5) and kinematic precision through topological optimization and additive manufacturing.
- Demonstrated morphological and functional equivalence to conventional open-chain designs via CAD simulations.
- Implemented a hierarchical reinforcement learning framework (RSL_RL) in NVIDIA Isaac Sim with proprioceptive-terrain fusion state representation, achieving 92% terrain adaptation success rate in unstructured environments.
- Forthcoming paper for IEEE RA-L; Preparing an extended version for IJRR and IEEE TRO; Open-source framework with URDF specifications and IsaacLab integration *(Release v1.0 pending)*.

Investigating Overconstrained Locomotion using Reinforcement Learning   Oct 2023 - Jul 2024
Advisor: Prof. Chaoyang Songg, Southern University of Science and Technology   Shenzhen, China
- Minimized physical collisions of the model to reduce computational overhead for 38%.
- Wrote 1088 lines code in total for configuring the robot's physical properties, initial position, motor parameters, environment integration, articulation motion rate adjustment, random state addition, and reward function design.

- Published an International Symposium on Robotics Research (ISRR) paper and an IEEE/IFToMM International Conference on Reconfigurable Mechanisms and Robots (ReMAR) paper.
- Won 3 prizes of 23rd National CURC RoboCon 2024 Bionic Legged Robot Challenge, and the "Challenge Cup" Guangdong College Student Entrepreneurship Plan Competition Gold Award (0.4%).

Flexible Multi-Channel Electrical Stimulation System for Assisting Grasping in Patients with Hemiplegia Nov 2023 - Mar 2024

Advisor: Prof. Chenglong Fu, Southern University of Science and Technology Shenzhen, China

- Configured 15 existing robotic arm gripping framework. Developed a method to determine reasonable gripping positions and finger spreading widths.
- Assisted in constructing the hardware system and used MediaPipe for gesture recognition and data extraction.
- Published two International Conference on Advanced Robotics and Mechatronics (ICARM) papers with one being second author.

An Effective Head-Based HRI for 6D Robotic Grasping Using Mixed Reality Mar 2023 - Jul 2023

Advisor: Prof. Chenglong Fu, Southern University of Science and Technology Shenzhen, China

- Developed a point-cloud diffusion method to recognize and reconfigure objects using Unity, utilized HoloLens2 to enable the robotic arm to complete gripping tasks.
- Published a patent and an IEEE RA-L paper, won Second Prize in the "Xiake Cup" Innovation and Entrepreneurship Competition.
- Interviewd by Shenzhen TV, reported and transmitted by SUSTech and several self-media channels.

SELECTED AWARDS AND HONORS

- **Excellent Undergraduate Graduate**, Southern University of Science and Technology (<25%)   2025
- **Excellent Undergraduate Graduation Project (thesis)**, SUSTech (<24%)   2025
- **Outstanding Student 2024**, Southern University of Science and Technology   2024
- **Dean's award**, Shude College 2024 scholarship (<0.6%)   2024
- **Nomination Prize**, School Motto "Innovation" Series Scholarship, SUSTech (0.2%)   2024
- **First Prize**, 23rd National CURC RoboCon 2024 "Granary Returns"- Operation Skills Competition (8/70)   2024
- **Second Prize**, 23rd National CURC RoboCon 2024 "Granary Returns" - Main Competition (23/84)   2024
- **Third Prize**, 23rd National CURC RoboCon 2024 Bionic Legged Robot Competition - Indoor Obstacle Course   2024
- **Third Prize**, 23rd National CURC RoboCon 2024 Bionic Legged Robot Competition - Indoor Race Course   2024
- **Innovation Award**, 23rd National CURC RoboCon 2024 Bionic Legged Robot Challenge (1/86)   2024
- **Gold Award**, 14th Challenge Cup Guangdong College Student Entrepreneurship Plan Competition (0.4%)   2024
- **Outstanding Student 2023**, Southern University of Science and Technology   2024
- **Second Prize**, 2th "Advance" Training Camp Presentation Evaluation, SUSTech   2023
- **Third Prize**, 2023 China College Student Mechanical Engineering Innovation and Design Competition   2023
- **Third Prize Scholarship**, Outstanding Student Scholarship 2022-2023, SUSTech   2023
- **Second Prize**, "Xiake Cup" China Jiangyin 6th Innovation and Entrepreneurship Competition   2023
- **ADVANCED INDIVIDUAL**, Alma Mater Revisiting Program, SUSTech   2023
- **Freshman Scholarship Excellence Award**, Southern University of Science and Technology   2021

Teaching

- Fall 2024, Teaching Assistant, Mechanical Design, ME311, SUSTech

SKILLS

- **Programming Languages:** Java, Python, C/C++, MATLAB, ROS/ROS2, C#, Arduino
- **Operating System:** Windows, Linux
- **Sports:** Basketball, Tennis
- **Languages:** Chinese(Mandarin and Cantonese) native, English proficient