GUOJING HUANG

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EDUCATION

The University of Texas at Austin (UT-Austin) Austin, U.S.
The International Academy Program (2025 Winter, Engineering major track) Jan 2025 – Feb 2025

- Coursework: Engineering Design (A), Engineering Physics (A), Speaking E (A), Writing E (A)

Southern University of Science and Technology (SUSTech) Shenzhen, China
BE in Robotics Engineering (Expected Jul 2025) Sep 2021 – Present

- GPA: 3.60/4.00
- English Proficiency: IELTS 7.0 (L: 7.0, R: 8.5, W: 7.0, S: 6.0)
- Core courses: 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 Overconstrained Quadruped Robot Limb *(in progress)*
Supervised by Prof. Chaoyang Song Shenzhen, China Sep 2024 – Present

Investigating Overconstrained Locomotion using Reinforcement Learning
Supervised by Prof. Chaoyang Song Shenzhen, China Oct 2023 – Jul 2024

- 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 **ISRR** paper and a **ReMAR** paper
- Won **3** prizes of 23rd National CURC RoboCon 2024 Bionic Legged Robot Competition, 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
Supervised by Prof. Chenglong Fu Shenzhen, China Nov 2023 – Mar 2024

- 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 **IEEE ICARM** papers with one being **second author**.

An Effective Head-Based HRI for 6D Robotic Grasping Using Mixed Reality
Supervised by Prof. Chenglong Fu Shenzhen, China Mar 2023 – Jul 2023

- 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

- **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 2024
- **Third Prize,** 23rd National CURC RoboCon 2024 Bionic Legged Robot Competition - Indoor Race 2024
- **Innovation Award**, 23rd National CURC RoboCon 2024 Bionic Legged Robot Competition (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 2022
- **Freshman Scholarship Excellence Award,** Southern University of Science and Technology 2021

EXTRACURRICULAR EXPERIENCES

- **President**, the Robot Club and the School Representative Team at SUSTech. Aug 2023 – Jul 2024
  Led a 30-member team in skills training, robot construction, and competition preparation; secured funding, space, and sponsorships; led a 20-member team to Nanjing University of Science and Technology(Jiangyin) for a 15-day competition, winning 5 National Prizes at the 23rd National CURC RoboCon 2024.

- **Volunteer**, the Global Engineering Deans Council (GEDC) Industry Forum at SUSTech Jan 2024
  Provided transportation for VIPs and on-site support; completed volunteer duties successfully; discussed academic research and personal development with the Dean of USC's College of Engineering.

- **Committee Member**, Student Union of Department of MEE, SUSTech Sep 2022 – Present
  Assist department in organizing academic and non-academic activities related to the department, including but not limited to academic lectures, recruitment talks, public welfare activities.

- **Minister**, Student Union of Shude College. SUSTech Sep 2022 – Jun 2023
  Held weekly meetings with department members and the presidium of the student union, led department members to learn the activity planning process, formulate experience documents and paradigms for holding various activities, and communicate with students from other colleges and universities on behalf of the college

- **Project Manager**, the SUSTech Shude College Mid-Autumn "Lake Wish" event Sep 2022
  Led planning, approvals, team formation, activity design, procurement, and on-site management; organized a 13-member team; designed activities like handmade mooncakes, pomelo eating contest, and lake wish event with nearly 200 participants from SUSTech.

- **Co-Project Manager**, the SUSTech Shude College 2022 Graduation Party Jul 2022
  Led planning, team formation, activity design, procurement, and on-site management; organized a 20-member team, coordinated 5 performances, graduation exhibition, custom T-shirt design, and activities for 50 graduates.

TEACHING

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

SKILLS

- Programming language: Java, Python, C/C++, MATLAB, ROS/ROS2, C#, Arduino
- Operating system: Windows, Linux
- Language: Chinese(Cantonese, Mandarin) native, English proficient