XIMAN ZHANG

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EDUCATION

Southern University of Science and Technology (SUSTech) Shenzhen, China
Bachelor of Robotics Engineering Sep. 2020–Jul. 2024

- Cumulative GPA: 3.56/4.0
- Major GPA: 3.65/4.0
- Junior GPA: 3.96/4.0
- Grand Prize for school motto scholarship (2023) 4/5000
- The second class Undergraduate scholarship

PUBLICATIONS

- Z. Li, J Long, **X Zhang**, …, Z Jia "Experimental Characterization and Comparison of Three Typical Omnidirectional Mobile Robots," 2023 International Conference on Advanced Robotics and Mechatronics (ICARM), Sanya, China, 2023, pp. 1162-1168.
- SHI J j, **ZHANG X m**, et al. An experiment design on the measurement of operation parameter of vertical elevator using an electronic balance[J]. Physics and Engineering,2023: Online first.(in Chinese)

RESEARCH EXPERIENCES

Research Asssistant , Professor Zhenzhong Jia'Lab (Roma Lab) 2024.09-Present

- Expanding the existing Webots simulations to more complex actions like jumping and climbing
- Doing the comparison of two versions of Rhex: SmallRhex and QDD-SmallRhex on mechanical design and motor properties, experimenting new actions like jumping on real platform and getting success
- Conducting the experiments to verify the ontology drive and perception ability by examing the current and the position of the motor

Next step:

- Testing of the sensor membrane mounted on the legs
- Doing research on the ontology drive and perception ability of the QDD-Rhex, using machine learning to classify the corresponding terrain through motor current, sensor film data and motor position, analyzing its accuracy

Research on Indoor and Outdoor Integrated Omnidirectional Mobile Robot 2022.08-2023.07
Professor Zhenzhong Jia

- As a member, successfully applied for the provincial-level key project of the Guangdong Science and Technology Innovation Strategic Special Fund ("Climbing Plan") in 2022
- Learned about the design and production of four kinds of omnidirectional robots, controlled and participated in the experimental research process of ASOC, Mecanum and 4WS4WD robots
- Accumulated experience in data analysis, enhancing problem-solving skills through practical experimentation and research

RHex Robot Version Comparison and Ontology Sensing Exploration 2023.09-2024.07
Undergraduate Research Assistant, Professor Zhenzhong Jia's Lab (Roma Lab)

- Designed and constructed QDD-SmallRhex, QDD-Rhex, and a single-leg testing platform, integrating QDD motors and pressure sensor arrays for sensing.
- Simulated RHex's motion in Webots and tested walking, turning, and stair-climbing, validated through terrain experiments and pressure sensor data analysis.
- Developed and controlled systems in ROS2 using Python and CAN Bus, employing machine learning (random forest) to analyze sensor accuracy and explore Rhex's capabilities

Experimental Analysis and Kinematics Comparison of Omnidirectional Mobile Robots 2022.11-2023.07
Undergraduate Research Assistant, Professor Zhenzhong Jia

- Learned ROS control methods, controlled and experimented with three different robots moving at different angles and speeds for linear motion and square motion
- Used MATLAB to analyze the data of velocity, motor state and odometry, studied new methods of image processing, such as line width, legend setting, etc.
- Used PowerPoint to create three kinds of robots' kinematics analysis model diagrams, wrote the kinematics part of the paper by Overleaf, and manufactured the photos and videos for the paper

INTRENSHIP PROGRAM

Shenzhen Maifei Precision (Multi-Field Precision) Co., LTD 2022.07-2022.08
Professor Yongbo Wu

- Achieved outstanding performance during the summer internship, earning the third "Maifei Youth" Second Prize
- Gained proficiency in COMSOL Multiphysics and designed a side cutter tip to enhance cutting efficiency
- Created engineering drawings for the tool design, coordinated manufacturing processes, and conducted testing and optimization of the assembled tools.

SELECTED COMPETITIONS AND AWARDS

An analysis of network buzzwords and college students' thought guidance -- based on a survey report of 1056 students in Guangdong high-level University of Science and Technology 2023.03-2023.05
Professor Mingzheng Teng

- As the project leader
- Won the second prize of Guangdong Province in the "Challenge Cup" National College Student Curriculum Academic Science and Technology Works Competition

Measurement and application of operating parameters of vertical elevator based on electronic scale
Teacher Xu Tingting, Wang Xiaofeng
2022.03-2022.05

- Won the third prize in China University Physics Experiment Competition (CUPEC)

EXTRACURRICULAR ACTIVITIES

- Outstanding Team and Excellent Individual Award for Winter Vacation Alumni Visit Program 2021
- An active member of the College Student Union, responsible for the publicity, official account maintenance, and promotion for special events
  2020.09-Present
- Volunteered in rescuing stray animals and promoted public interest organizations, total for 74 hours

ADDITIONAL INFORMATION

Additional Professional and Extracurricular Experiences

- Member of Student Union (2020-2021)

Interests

- Activity host
- Sports

Computer and Language Skills

- Software Skillsets: Solidworks, Webots, Arduino, STM32, COMSOL, VSCode, Word, PowerPoint
- Programming Languages: C/C++, MATLAB, Python, Java, ROS1/2
- Languages: Chinese (native), English (fluent speaker)