Haoran Wang
Mobile: +86 18319053215
Email: 12011430@mail.sustech.edu.cn
Personal website: https://criswang6.github.io

Personal Statement

My name is Wang Haoran, or I can also be called CrisWang. I am a senior undergraduate student majoring in robot engineering from Southern University of Science and Technology, China. At the same time, I have also studied industrial design for a while, the teaching modes of the 2 majors are based on the new engineering education concept, that is, students are trained to have the ability to cross-applicate multi-disciplinary skills. Therefore, my purpose is to go deep into an entrepreneurial environment with diversified technologies and observe how various engineering technologies are cross-applied to commercial products. The accumulated experience will be used to develop new products in the future.

Over the past few years, I have worked on several comprehensive projects, during which I have gained a lot of practical experience related to hardware design and control. At the same time, to strengthen my understanding and practical ability in interdisciplinary applications, I hope to try various software-related work to improve my understanding of robot systems.

In the eyes of my teammates and teachers, I am outgoing and good at communication. In the project of the intelligent garbage sorting robot (mentioned in the following sections), I led a team of six people to carry out work and also coordinated different ideas and relationships among team members through close contact with teammates. In the wheel-leg transformable robot project, as the project leader, I tracked the progress with the professor. When I encountered obstacles in technical details, I would actively ask the graduate students or professors for help.

I always tend to jump out of the existing thinking to find some unique solutions. For example, in the wheel-leg robot project, based on my mechanical design experience, I tried different schemes as the driving structure of mode switching. When I was the captain of the college and school football team and led the teams to several matches, I dared to break the routine and try different formations and tactical ideas. When I served as the minister of the Sports Department of the College Student Union, I reformed the working pattern to strengthen the contact between departments and improve the overall work efficiency.

To challenge myself, I also joined the high jump team in the final year of the university, hoping to pursue excellence in a brand-new event. I am passionate about the high jump because it is the only event that ends with failure in sports competitions, which means that I need to jump higher and higher to reach my goal, in line with my idea of pursuing better myself in life or work.

All in all, I hope that no matter which team I join, and which position I am in, I can devote all my efforts to learning from my predecessors and put the accumulated experience into the development of new products.

Education

Sep 2020 - Present **Southern University of Science and Technology** China
Bachelor of Robotics Engineering

Publication & Project Experience

Aug 2023 - Mar 2024 — **A Three-Impeller Wheel-Leg Transformable Robot with Variable Robust Adaptability to Stair Dimensions** — SUSTech

Author

- Design and assemble the Wheel-leg transformable robot SWhegPro3 and test its operating performance.
- Analyze the results of experiments in both simulation environments and fields.
- Independently publish an essay to the IEEE International Conference on Robotics and Biomimetics 2023.
- Integrate two similar projects into a journal paper and submit it to IEEE ACCESS.

Feb 2024 - Present — **Pressure Insole Correction Method Based on Machine Learning Prediction Center of Pressure (In progress)** — SUSTech

Author

- Restructure the preprocess of the datasets and construct a network to predict the center of pressure of insoles.
- Load the network on hardware to calibrate the sensor insoles, and test the result of calibration.

Sep 2021 - Jan 2022 — **A Mobile Kitchen Waste Classifying Robot** — SUSTech

Project Member

- Find the pains and needs of the residents living in apartments who are annoyed with waste in their homes.
- Designed a user-friendly mobile garbage sorting robot, which is equipped with three-axis robotic arms and sliding rails.

Sep 2022 - Jan 2023 — **A Parallel Five-Bar SCARA Robot with Suction Cup Manipulator** — SUSTech

Project Member

- Redesign the five-bar parallel robot, integrate the suction cup to the end effector as the manipulator, and then control the end effector to accurately move objects.
- Make a video to demonstrate the performance and working principle of the SCARA robot we design.

Sep 2022 - Jan 2023 — **Navigation and Manipulating of a Mobile Robot with UR5 Robot Arm** — SUSTech

Project Member

- Load a simple robot model into the Gazebo and the Rviz.
- Use the package TF to set the relationship between the joints of the robot and the arm.

Apr 2023 - Jul 2023 — **Garbage Sorting Simulation of Panda Robot Arm Based on Deep Learning and Visual Recognition** — SUSTech

Project Member

- Training a ResNet-5 network to classify 4 common types of garbage.
- Integrate a composite camera into the PyBullet simulation environment, combining computer vision and robot operation.

Co-curricular Activities & Hobbies

Soccer Player, Captain of both college and university teams

- In SUSTech Men's Football Team, led a team of over 30 players to win several awards at both provincial-level and city-level.
- Won numerous championships in the annual cup of the season 2021 and 2023 for ZHICHENG College.

High Jump Athlete, Track and Field Team

- 1st Place in the 8th & 9th Track and Field Sports Meeting of SUSTech
- 4th Place in the 2022 & 2023 Guangdong University Track and Field Championships

Video Making

- Uploaded more than 50 videos in major network media, a total of 100k+ views, one of the works of animation has been forwarded by the official FA Premier League.

IT & Software Proficiency (Or other outside of IT)

Office Productivity	Microsoft Word	Basic
	PowerPoint	Intermediate
	Excel	Basic
Multimedia	Adobe Photoshop	Basic
	Adobe Premiere Pro	Intermediate
	Adobe After Effect	Basic
Engineering Software	SolidWorks	Proficient
	AutoCAD	Intermediate
	ROS	Intermediate
	Keil	Basic
	Altium Designer	Basic
Programming	Java	Intermediate
	Python	Intermediate
	MATLAB	Intermediate
	LATEX	Proficient
	Markdown	Intermediate

Language Proficiency

Spoken	English – average; Mother Tongue – fluent
Written	English – average; Mother Tongue – fluent

Appendix A (Transcripts & Results)

南方科技大学 SOUTHERN UNIVERSITY OF SCIENCE AND TECHNOLOGY

教学工作部 Teaching Affairs Office

成绩单用章

Transcript of Academic Record

Family Name:	Wang	**Student ID:**	12011430	**Residential College:**	Zhicheng College
Given Name:	Haoran	**Date of Enrollment:**	27/08/2020	**Department:**	Department of Mechanical and Energy Engineering
Gender:	Male	**Duration:**	4years	**Program:**	Robotics Engineering
Date of Birth:	14/08/2002	**Date of Graduation:**	2024.06.30	**ID No.:**	410103200208140051
Now:	in campus				

Course	Credit	Letter Grade	Pct Grade	Categ	Course	Credit	Letter Grade	Pct Grade	Categ
Academic Year2020-2021 Fall Semester									
Calculus I A	4	C-	70	GR	General Physics B (I)	4	C-	70	GR
Physical Education I	1	A-	90	GR	Introduction to Computer Science B	2	F	33.0	GE
Cultivation of Ethicsand Fundamentals of Law	2	A	93	GR	Linear Algebra A	4	C+	78	GR
Experiments of Fundamental Physics	2	B-	81	GR	SUSTech English I	4	A-	91	GR
Academic Year2020-2021 Spring Semester									
Calculus II A	4	D	64	GR	Introduction to Life Science	3	D+	67	GE
Writing and Communication Skills	2	P	P	GR	General Physics B (II)	4	C-	71	GR
Practice Course of Cultivation of Ethics and Fundamentals of Law	1	P	P	EC	Advanced Linear Algebra	4	W	W	MR
Introduction to Computer Science B	2	F	55	GE	Military Skills	2	P	P	GR
SUSTech English II	4	C+	79	GR	Practice Course of the Basic Principles of Marxism	1	P	P	EC
The Outline of Modern and Contemporary History of China	2	B+	87	GR	Military Theory	2	P	P	GR
Academic Year2020-2021 Summer Semester									
Introduction to Integrative System Design	4	B+	88	GE	**********				
Academic Year2021-2022 Fall Semester									
Fundamentals of Materials Engineering	3	B	84	GE	Practice Course of Brief History of Modern China	1	P	P	EC
Practice Course of Introduction to Mao Zedong Thought and Theoretical System of Socialism with Chinese Characteristic	2	P	P	EC	Introduction to Computer Science B	2	C	75	GE
Rapid Prototyping Techniques	3	B+	87	GE	Mechanical Design and Manufacturing I	3	B	84	GE
Design Thinking and Engineering	3	B	84	GE	Analog Circuit System Design	4	B	85	GE
SUSTech English III	4	B+	89	GR	The Basic Principles of Marxism	2	B+	88	GR
Physical Education III	1	B	86	GR	**********				
Academic Year2021-2022 Spring Semester									
Engineering Mechanics I – Statics and Dynamics	3	C-	70	MR	General Chemistry A	4	C-	72	GR
Mao Zedong Thought and Introduction to the Theoretical System of Socialism with Chinese Characteristics	3	A-	91	GR	Introduction to Computer Programming A	3	B	86	GR

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地址：中国广东省深圳市南山区西丽大学城学苑大道1088号
Add：1088 Xueyuan Blvd.,Nanshan District,Shenzhen,Guangdong,P.R.China
电话（ TEL ）：0755-88010300（办公室） 邮编（ Post Code ）：518055
邮箱（ Email ）：tao-sls@sustech.edu.cn 网址（ Website ）：www.sustech.edu.cn

南方科技大学 SOUTHERN UNIVERSITY OF SCIENCE AND TECHNOLOGY

教学工作部 Teaching Affairs Office

南方科技大学教学工作部 成绩单用章

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Now:	in campus				

Course	Credit	Letter Grade	Pct Grade	Categ	Course	Credit	Letter Grade	Pct Grade	Categ
Fundamentals of Electric Circuits	2	B-	82	MR	System Design and Management	2	W	W	MR
Physical Education II	1	A+	97	GR	English for Academic Purposes	2	B	85	GR
Probability and Statistics	3	B	84	MR	**********				
Academic Year2021-2022 Summer Semester									
CAD and Engineering Drawing	3	B	83	MR	Awareness Practice of Manufacturing Engineering	3	B+	89	MR
Academic Year2022-2023 Fall Semester									
Basic Skills of Video Shooting and Editing	2	A-	90	GE	Signals and Systems	3	P	P	MR
Physical Education V	0	P	P	GR	Robot Modeling and Control	3	B	85	MR
Vocal Singing Art in Recording	2	A+	98	GE	Mechanics of Materials	3	A	95	MR
Environmental Policy & Governance	2	B	86	GE	Robot Operating System	3	B	84	ME
Robotic Actuation System	3	B	86	MR	**********				
Academic Year2022-2023 Spring Semester									
Collaborative Robot Learning	3	B+	89	ME	Fundamentals of Control Engineering	3	C-	71	MR
Mechatronic Systems	3	A	93	MR	Physical Education IV	1	A+	99	GR
Physical EducationVI	0	P	P	GR	**********				
Academic Year2022-2023 Summer Semester									
Innovation and Entrepreneurship: Practice and Principles	2	P	P	EC	**********				
Academic Year2023-2024 Fall Semester									
Situation and Policy	2	D+	67	GR	Natural History and Natural Education	2	A-	91	GE
Asia in World History	2	B	83	GE	Engineering Optimization Methods	3	C+	78	GE
Ordinary Differential Equations B	4	B	85	GE	**********				

Credits Achieved: 151 **(credits required for graduation:** 136 **) Grade Point Average:** 3.29 **Weighted Average Score:** 82.39

Date of Issue:February 21,2024

地址：中国广东省深圳市南山区西丽大学城学苑大道1088号
Add：1088 Xueyuan Blvd.,Nanshan District,Shenzhen,Guangdong,P.R.China
电话（ TEL ）：0755-88010300（办公室） 邮编（ Post Code ）：518055
邮箱（ Email ）：tao-sls@sustech.edu.cn 网址（ Website ）：www.sustech.edu.cn