

# Chengzhe Jia

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## Education Background

### UCSD (University of California San Diego)

California, USA

M.S. IN MECHANICAL AND AEROSPACE ENGINEERING

Sept. 2021 - Jul. 2023

- **GPA:** 3.84/4.00
- **Selected Relevant Courses:** Topics in Engineering Science-Design of Haptic Systems (A), Robotics (A+), Linear Control Design (A+), Robot Motion Planning (A), Topics in Engineering Science-Electric Power System Modeling (A-), Advance Technics in Computational Math I (A)

### BJUT (Beijing University of Technology)

Beijing, China

B.S. IN MEASUREMENT AND CONTROL TECHNIQUE AND EQUIPMENT

Sept. 2016 - Jul. 2020

- **GPA:** 3.49/4.00
- **Award:** The Third Scholarship of BJUT (top 30%)
- **Selected Relevant Courses:** Computer Language Training (90/100), Fundamentals of Circuit Analysis(91/100), Fundamentals of Mechanical Accuracy Design (Bilingual)(80/100), Course Design of Precision Machine Design (86/100), Electrical and Electronic Technology Courses(97/100), Circuits for Measurement and Control (87/100), Course Design of Sensing and Testing Technology (87/100)

## Publications

### Controlling the Motion of Gas-Lubricated Adhesive Disks using Multiple Vibration Sources

Frontiers in Robotics and AI

FIRST AUTHOR

Under final round review

- **C. Jia**, S. Ramanarayanan, A. Sanchez, M. Tolley. Controlling the Motion of Gas-Lubricated Adhesive Disks using Multiple Vibration Sources. Frontiers in Robotics and AI.

### Vehicle Attribute Recognition Algorithm Based on Multi-task Learning

2019 IEEE SmartIoT

SECOND AUTHOR

Aug. 2019

- J. Sun, **C. Jia**, Z. Shi. Vehicle Attribute Recognition Algorithm Based on Multi-task Learning. 2019 IEEE International Conference on Smart Internet of Things.

### Percussion Characteristic Analysis for Hydraulic Rock Drill with no Constant-Pressurized Chamber through Numerical Simulation and Experiment

Advances in Mechanical Engineering

THIRD AUTHOR

Apr. 2019

- W. Ma, X. Geng, **C. Jia**, etc. Percussion Characteristic Analysis for Hydraulic Rock Drill with no Constant-Pressurized Chamber through Numerical Simulation and Experiment, Advances in Mechanical Engineering 2019, Vol. 11(4) 1–11. DOI: 10.1177/1687814019841486

## Professional Experience

### Sim2Real Manipulation on Unknown Objects with Tactile-based Reinforcement Learning

Xiaolong Wang's Lab, UCSD

FULL-TIME RESEARCH ASSISTANT

Mar. 2023 - NOW

- Supervisor: Prof. Xiaolong Wang.
- Assist with hardware building.
- Troubleshooting on both hard-and-software side.
- Conducting experiments.
- Learning about Reinforcement Learning Techniques.
- **The article has been submitted** to CoRL 2023 (Conference on Robot Learning).

### Controlling the Motion of Gas-Lubricated Adhesive Disks using Multiple Vibration Sources

Bioinspired Robotics and Design Lab, UCSD

SOLE PROJECT LEADER

Mar. 2022 - Jun. 2023

- Supervisor: Prof. Michael T. Tolley.
- Using CAD to design and manufactured different robot models.
- Design and build experimental platform.
- Using SolidWorks design and 3D-printed accessories for experiments.
- Using Tracker(video analysis and modeling tool) to gather data from recorded video.
- Using Matlab and Excel to process and analyze experimental data.
- Create figures and complete academic article writing.
- **The article has been submitted** to FRAI journal (Frontiers in Robotics and AI).

## Other Course Projects While Studying at UCSD

UCSD

### CORE MEMBER

Sept. 2021 - Jun. 2023

- Controlling the Motion of a UR3 Robot-arm
- Custom Haptic Device 'Hapkit' Building
- "Steering Wheel" Design with Force Feedback
- For more detailed information, please refer to my homepage [<https://jaking98.github.io/>]. Courses and projects overview with videos are provided.

## Measuring Instrument Operation

Institute of Metrology, National

Institute of Metrology, China

Jun. 2019 - Jul. 2019

### LAB INTERN

- Supervisor: Dr. Yao Huang.
- Learned the practical operation of measuring instruments like angular gage block, dividing head, and autocollimation.
- Mastered the use of Trioptics and processed measured data by Excel.
- Conducted inspection instruments test.

## Vehicle Attribute Recognition Algorithm Based on Multi-task Learning

School of Computer and

Communication Engineering, USTB

Mar. 2019 - Jun. 2019

### RESEARCH ASSISTANT

- Supervisor: Prof. Zhiguo Shi.
- Absorbed the knowledge of computer visual identification system and convolutional neural network.
- Input images of various colors, brands, and types of vehicles to train the model and construct the database.
- Improved the accuracy rate of color recognition from 94.15% to 94.27%, the brand recognition from 98% to 99.50%.

## Percussion Characteristic Analysis for Hydraulic Rock Drill with no Constant-Pressurized Chamber through Numerical Simulation and Experiment

School of Mechanical Engineering,

USTB

Aug. 2018 - Feb. 2019

### RESEARCH ASSISTANT (THE ONLY UNDERGRADUATE IN GROUP OF SEVEN)

- Supervisor: Prof. Fei Ma.
- Installed the pressure sensor according to the sampling frequency.
- Collected the hydraulic data of dual-channel through acquisition instrument of LMS SCADAS Mobile and software of LMS Test Xpress 7A.
- Self-learned the Simulink of Matlab and built a model to analyze data.

## Multifunctional Robot Design for Family Safety

National University Student

Innovation Program, BJUT

Dec. 2017 - Jul. 2018

### CORE MEMBER IN GROUP OF FIVE

- Supervisor: Senior Engineer Shuwen Sun.
- Adopted 51 SCM as the lower program control system and used Keil software to write the program.
- Employed STM32F103 SCM to the core control part, and controlled the skills of the environment configuration and library function call to complete upper computer program by C#.
- Modified the wireless remote control car with modules of temperature-humidity, smoke sensor, humidifier, monitoring, and obstacle avoidance.
- Awarded **the Second Prize** of the 12th iCAN International Contest of Innovation (BJUT Division).

## Automatic Food Pickup Robot Design

Spark Fund Project, BJUT

Dec. 2016 - Aug. 2017

### TEAM LEADER IN GROUP OF FIVE

- Supervisor: Senior Engineer Shuwen Sun.
- Acquired the use of Keil software and 51 SCM (single chip microcomputer) and applied them to the installation and modification of the intelligence vehicle.
- Achieved the function of path recognition, line-tracking, and sign identification based on the infrared sensor using C.
- Awarded **the Certification** of 18th Spark Fund Project.

## Skills

### Mathematical Software:

- MATLAB
- Julia
- LabVIEW
- SPSS
- Excel

### Drawing & Modeling Software:

- CAD
- Fusion 360
- SolidWorks

### Computer Language:

- Python
- C#
- Android Studio

### Other Software & System:

- Arduino
- Processing
- Keil
- LabVIEW
- Blender
- Tracker
- Latex
- Markdown
- Ubuntu
- Linux

### Hands-on Skill:

- Structural Design
- Prototype production
- Circuit soldering
- Silicone molding

# Standard Tests

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TOFEL	Total:100	(Reading 27   Listening 27   Speaking 23   Writing 23)	05/11/2019
GRE	Total:331	(Verbal 161 /88%   Quantitative 170 /96%   Analytical Writing 3 /15%)	10/20/2019