

Han Dongming

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EDUCATION

Beihang University

Beijing, China

Pursuing M.E. in Aerospace Manufacturing (**Medical Surgical Robot Field**)

Sept 2021-Present

- Current Comprehensive Ranking: 12/198, GPA: 3.75/4.0
- Relevant Coursework: Robotics, Single-Chip System Experiments, Soft Robotics, Matrix Theory, Big Data Visualization etc.
- Awards: Graduate President Scholarship, Excellent Graduate Scholarship, Academic Excellence Scholarship×2

Chongqing University

Chongqing, China

B.E. in Mechanical and Electronic Engineering

Sept 2017-June 2021

- Comprehensive Ranking: 9/101, GPA: 3.31/4.0
- Relevant Coursework: Mechanical Design, Theory of Machines and Mechanisms, Electrical and Electronic Engineering, Programming in C++, Computer Interface Technology and Application etc.
- Awards: National Inspirational Scholarship

Project Experience

In research: Robotic Admittance Control for Puncture Ablation Surgery

Master's research area

Cooperation with Shanghai MicroPort Company

Jan 2023-Present

- Assisted Shanghai MicroPort Company in designing a robot admittance control algorithm for puncture ablation robot. The project mainly uses a six-dimensional force sensor and a collaborative robot to achieve flexible variable admittance control, so that the end of the robot can follow the human breathing movement.
- At present, I have completed the construction of the experimental platform, the development of the sensor gravity compensation algorithm and the variable admittance algorithm based on fuzzy control. The project is in the process of collecting some experimental data and writing a conference paper.

In research: Variable admittance control for upper limb rehabilitation

Master's research area

Cooperation with West China Hospital of Sichuan University

Jan 2023-Present

- Design a variable admittance control algorithm based on a six-dimensional force sensor and collaborative robot to assist related patients in the rehabilitation of upper limb movements. The core algorithm works similar to the above.

Competition experience

[1] The 9th National College Students Mechanical Innovation Design Competition

National First Prize

Nov 2020

- A cam-link mechanism was used to design two service robots for helping the elderly. One is used to help the elderly fall, and the other is used to squat for the elderly to go to the toilet. Both projects won the first prize in the country. And with the help of the project award to obtain the master's qualification.

[2] The 6th National Undergraduate Engineering Ability Training Competition

National Second Prize

Jun 2019

- As a team member, responsible for the design and physical processing of a cam mechanism for a 8-character track carbon-free car in the competition. Relevant works won the national second prize.

[3] Mathematical Contest in Modeling / Interdisciplinary Contest In Modeling

Meritorious Winners

Mar 2019

- As a team member, assist team members to complete the establishment of the pterosaur release model in Game of Thrones, and conduct related simulations.

In addition, I also have a lot of experience in mechanical design, Internet + and other robotics related competitions.

Publications

- [1] TAO Yong, LIU Haitao, WANG Tianmiao, HAN Dongming, ZHAO Gang. Research Progress and Industrialization Development Trend of Chinese Service Robot[J]. Journal of Mechanical Engineering, 2022, 58(18): 56-74.

Internship Experience

[1] Yarui Capital (Founded by Dr. Wang Tianmiao)

Sept 2021- Sept 2022

- Assist Mr. Wang Tianmiao to complete the content arrangement and slide production of "Ten Frontier and Hot Fields of Robotics" in the 2021 and 2022 World Robot Conference.
- Assist Dr. Wang Tianmiao and the Zhongguancun Robot Industry Alliance to complete the compilation of the "2021 China Robot Industry Yearbook", and be solely responsible for the chapter on medical robots and machine tools in the yearbook. Compiled the content of the robot industry chapter, and assisted Fang Bin, a teacher from Tsinghua University, to complete the content arrangement of the academic frontier chapter.
- Assist the Vice President of Yarui Capital to complete the relevant declaration of Yarui Capital's certification of Zhongguancun Robot Industry Incubator.

[2] AUBO Beijing Robot Company

Sept 2021- Apr 2023

- Use Python and ROS to assist R&D engineers to complete the communication and control algorithm development between the six-dimensional force sensor and the robotic arm, and realize the robot Human force position control, used in rehabilitation and surgery medical scenarios.
- Assist Aubo Company to complete the relevant declaration of the Ministry of Industry and Information Technology's artificial intelligence medical device innovation task list, and the Zhongguancun Science City's announcement of the servo driver project declaration, etc.

Professional Skill

Office software category:

- Office, Visio, Xmind, Axure, Photoshop, Premiere, etc.

Programming language:

- Matlab、Python and C++

Robot related:

- With the abilities related robots: demand sorting, product design, 3D model drawing, selection of robot core components, motion algorithm development, basic circuit production, supply Chain search, etc.

Teaching

[1] Embedded Systems, Beihang University

Sept 2022- Jan 2023

- Instruct undergraduate students to experiment with single-chip microcomputer.

[2] Mechanical Design, Beihang University

Mar 2023- Present

- Guide undergraduate students to use Solidworks to draw models.

Personal Advantage

- Participated in the Xbotpark Robot Entrepreneurship Training Camp organized by Dr. Li Zexiang. And he has been engaged in vc project research in Yarui Capital founded by Dr. Wang Tianmiao. I have some special feelings about entrepreneurship in the field of robotics, and have a high enthusiasm for innovation and entrepreneurship.
- Hard-working and resist loneliness, besides extracurricular activities, I have been engaged in scientific research activities related to the admittance control of collaborative robot in the laboratory. The relevant achievements are being prepared to be published as an EI paper and patent.
- Enthusiastic, with a strong sense of responsibility, with multiple experience as monitor, research group committee, club president, etc., good at cooperating with others, and has a strong sense of teamwork.
- Love photography, especially event documentary photography. Related works are often used by platforms such as Beihang Official Account and Chongqing University Official Account.