

# Chen Han

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## EDUCATION BACKGROUND

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**Beihang University, Beijing, China** **09/2018-06/2022**  
BE in Mechanical Engineering GPA: 83.29/100 Rank:50/159 (top 30%)  
Second Degree: Electronic Information Engineering - Transportation Direction ( expected in June, 2023)  
**National University of Singapore (NUS)** **07/2023-NOW**  
MSc in Robotics

## INTERNSHIP EXPERIENCE

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**Beijing DMX Technology Co., Ltd. Data Collection and Analysis** **01/2021-05/2021**

- Conducted preliminary research and user demand statistics, and assisted the engineer in drafting the plan
- Customized a set of fully automatic CD burning, printing and archiving management system suitable for electronic data in the financial industry to ensure the long-term security of offline data storage

## RESEARCH INTEREST

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- AI in science(especially health care)
  - Microfluidic robot

## PROJECT EXPERIENCE

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**Beihang University Institute of Robotics** **supervised by Prof.AiZeng Wang**

➤ **Design of Drainage Water Blocking Mechanism in Basement** **Member** **04/2020-10/2020**

- Designed a mechanism model with drainage and water blocking for large basements to prevent rainwater backflow caused by flooding in the rainy season
- Applied **solidworks** software and **Adams** software, and used special materials in the laboratory to 3D print and manufacture parts
- Designed mechanism can carry out structural deformation according to the water level, which can ensure the free entry and exit of vehicles in the basement under low and medium rainfall, and directly seal the entrance of the basement under high rainfall

➤ **Definition of Dexterity in a Five-fingered Dexterous Hand** **Member** **04/2020-10/2020**

- Referred to human factors engineering, conducted a simulation analysis and selected the sum of the maximum intersection volume of the thumb and the other four fingers as the evaluation index
- Based on the Inspire-robots dexterous hand model developed by Beihang University, simulated and obtained the optimal size of the time-dependent dexterous hand

➤ **Research of fairing NURBS blending surface in CAD** **03/2022-06/2022**

- Converted the trimmed NURBS surface into an untrimmed T-spline surface and then spliced it to get a seamless T-spline surface
- Proposed the smoothing algorithm of the T-spline surface based on Sigmoid function, improved the calculation method of the allowable error, and proved the effectiveness of the smoothing quality of the T-spline surface of the algorithm

- Proposed a T-spline surface fairing algorithm based on the centripetal parameterization method, and proved that, the T-spline centripetal parameterization surface fairing is stronger than the equidistant parameterization and chord length parameter method

➤ **Research on T-spline Model Suitable for Isogeometric Analysis ( Graduation Thesis)** **02/2022-06/2022**

- Analyzed the theoretical conditions of T-splines suitable for analysis, and proposed a modeling algorithm for T-splines suitable for isogeometric analysis
- Based on three part models such as Car/Plane, inserted edges and control vertices for local subdivision to verify the T-spline watertight stitching properties and the effectiveness of the algorithm
- Designed a recursive algorithm, by assigning weights to the existing T-spline grid edges and minimizing the weights, and building a T-spline model of three car parts that is not suitable for isogeometric analysis on Rhino, applying algorithms to these three models, T-splines suitable for isogeometric analysis are obtained

**Hong Kong University ABIC**

**supervised by Prof.HaiSong Lin**

➤ **Parameter optimization of electrochemical sensors using Bayesian algorithm** **03/2023-08/2023**

- Using Bayesian optimization algorithm to optimize the coating time ion concentration and voltage of electrodes, with the ultimate goal of producing electrodes with good sensitivity
- Working on developing multi-objective Bayesian optimization algorithms

## EXTRACURRICULAR ACTIVITIES

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### Scholarship

- Beihang University Eucalyptus Scholarship for Competition** **07/2021**
- Beihang University Volunteer Public Welfare Scholarship** **02/2021**
- 2020 Beihang Excellent Volunteer** **12/2020**

### Competition

- APMCM Asia-Pacific Mathematical Contest in Modeling(Second Prize)** **12/2020**  
Modeling Analysis of the Impact of the New US President's Policy on China Based on Principal Component Analysis
- Beijing University Students Mechanical Innovation Design Competition(First Prize)** **10/2020**  
Design of Drainage Water Blocking Mechanism for Underground Garage
- 2020 Image and Graphics Technology and Application Academic Conference Paper Competition (Second Prize)** **04/2020**  
Blind Road Recognition System Based on Image Processing

### Student Union

- Beihang University School of Mechanical Engineering and Automation Student Union**  
Practice Department Deputy Minister **02/2020-02-2021**
- Beihang University Student Science and Technology Association**  
External Relations Department Deputy Minister **05/2019-12/2019**

## SKILLS

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### Computer Skills:

C language, Adams, Solidworks, Catia, Rhino, Matlab, STM32,Python, Arduino

### Language:

Chinese(native) English(IELTS: 7.0)