

# Wu Kai

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## EDUCATION

### Zhejiang University

Hangzhou, China

MPhil. In Mechanical Engineering (GPA: 3.70/4.00)

Sep. 2021 - Mar. 2024 (Expected)

- CAX Group, State Key Lab of Fluid Power & Mechatronic Systems, Advisor: Prof. Hongyao Shen
- Patent pending (Total: 4 patents)
- National first prize in Mathematics Competition for Chinese College Students (top 5%)

### Dalian Maritime University

Dalian, China

B.Eng. in Rescue and Salvage Engineering (Best GPA: 4.26/5.00, Overall GPA: 3.56/5.00)

Sep. 2017 - Jun. 2021

- Manyang Scholarship for 2 years & China Telecom Younger Scholarship (top 5%)
- College Student Pioneer Title in Innovation and Entrepreneurship in 2017 (top 10%)
- Outstanding Student Leader Title for 2 years & Outstanding Orienteering Club Leader Title (top 15%)
- Outstanding Graduate Title & Provincial Excellent Volunteer & EQ Scholarship (top 20%)

## RESEARCH EXPERIENCE

### Institute Of Advanced Machines Zhejiang University

Hangzhou, China

Research Assistant, Advisor: Prof. Hongyao Shen

Sep. 2022 – To Date

#### Develop Auto Layout System of Mechanical Parking

- Studied the existing parking Bases layout process, clarified the design objectives and advantages of automatic layout system
- The recognition algorithm of layout cell is realized by using AutoCAD secondary development, with an accuracy of 90%
- Apply the Mixed Integer Programming model to optimize the number of parking Bases and parking comfort

### Dalian Maritime University (Marine Engineering Group)

Dalian, China

Undergraduate, Advisor: Lect. Kang Zhang

Nov. 2020 – May. 2021

#### Parameter Optimization Design Of Tube Seal

- Published a Chinese Journal, won the award of outstanding thesis
- Studied the parameters that affect the performance of tube seal, including its hardness, angle and shape
- Used ABAQUS software as the simulation platform, adjusted various parameters to obtain a number of data
- Used data analysis software such as Origin and Design-Expert to complete data fitting analysis

## PROJECT HIGHLIGHTS

### PSH Parking Layout Generating Software

Mar. 2022 – Sep. 2022

- **Project Introduction:** PSH is becoming popular as a mechanical parking. Parking Layout Generating process is completed based on the two-dimensional computer-aided design platform. Now this work still rely on designer's experience a lot.
- **Technologies:** Under the AutoCAD secondary development environment (.NET), the extraction of the parking Bases was completed using the Scanline algorithm. Use the CSV file as the configuration file of the parking module to facilitate the maintenance of the subsequent parking module. Finally, the screening, automatic placement, partitioning, and statistics of parking modules are realized.
- **Achievement:**
  1. Good Robustness, Improve design efficiency, Decrease boring work
  2. Single drawing efficiency comparison: Manual Operation: 120min & This Software Operation: 3min

### PCS Tower Parametric Design Software

Sep. 2022 – Nov. 2022

- **Project Introduction:** PCS Tower is Tower parking lot. Parametric design can specify the key parameters of the project and make changes interactively, with the model updating automatically.
- **Achievement:**
  1. Established the database of PCS module, Completed the parametric design of more than 30 drawings
  2. High Efficiency, Strong expansibility

## MISCELLANEOUS

- **Character Traits:** Optimistic and Positive, Good at Cooperation and Teamwork, Quick Learner
- **Languages:** English(CET-6), Mandarin Chinese(Native)
- **Skills:** C#(Proficient), Python(Proficient), Git, WinForms, AutoCAD Secondary Development Technology, Gurobi, Postman