

# Boyuan Chen

404, Student Dormitory South Area Building 19, Tsinghua University, Haidian District, Beijing, 100084, P. R. China  
+86 13777832114 ◊ by-chen22@mails.tsinghua.edu.cn

## EDUCATION

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**Bachelor of Engineering in Mechanical Engineering** September 2022 - June 2026 (expexted)  
Tsian Excellence in Engineering Program (Qian Class), Xingjian College  
**Tsinghua University, GPA: 3.97/4.00**  
**Core Courses:** Advanced Calculus (4.0); Advanced Algebra (4.0); Theoretical Mechanics (4.0); Data Structure (4.0); Probability and Statistics (4.0); Electrical Engineering and Applied Electronics (4.0); Computer Networks (4.0); Introduction to Artificial Intelligence (3.6)

## SKILLS AND INTERESTS

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<b>Skills</b>	Python and C++ programming, PyTorch framework, MATLAB, SolidWorks
<b>Interests</b>	Robotics, 3D Representation, Reinforcement Learning, Imitation learning

## PROJECTS

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**PreAfford: Affordance-based Pre-grasping across Objects and Scenes** December 2023 - March 2024  
*Guided by Hao Zhao, Institute for AI Industry Research, Tsinghua University*

- A novel pre-grasping planning framework that utilizes a point-level affordance representation
- A "trained-in-chain" approach to enhance adaptability and efficacy across a broad range of environments and object types
- Utilized Sapien to collect off-line training data on the ShapeNet-v2 dataset
- Applied to real word robot and represented a substantial advancement

**Self-supervised Model for Industrial Anomaly Sound Detection** June 2023 - January 2024  
*Guided by Weiqiang Zhang, Speech and Audio Technology Lab, Department of Electrical Engineering, Tsinghua University*

- Fine-tuned pretrained models and trained self-supervised models on DCASE(Detection and Classification of Acoustic Scenes and Events) 2023 Challenge Task 2 dataset
- Implemented data augmentation and patch-level feature extraction to boost accuracy in few-shot learning scenarios.
- Enhanced generalization by ensemble learning, exchanging features among different models.

## RESEARCH PUBLICATION

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Kairui Ding, **Boyuan Chen**, Ruihai Wu, Zongzheng Zhang, Siqi Li, Huan-ang Gao, Yuyang Li, Yixin Zhu, Guyue Zhou, Hao Dong, Hao Zhao. PreAfford: A Universal Framework for Pre-grasping Manipulation on Un-graspable Objects in the Wild. Submitted to *International Conference on Intelligent Robots and Systems (IROS) 2024*

## POSITION OF RESPONSIBILITY

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The Minister of the "Heye" Department (Academy Tailored Education Plan) of the Student Science Association at Xingjian College	October 2023 - Present
Moniter of Class	September 2023 - Present
Leader of Shenzhen Social Practice Squad	July 2023
Member of the Student Science Association at Xingjian College	March 2023 - September 2023

## AWARDS

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Second prize in the 2023 Contemporary Undergraduate Mathematical Contest in Modeling (Beijing)	October 2023
Comprehensive Excellence Scholarship	September 2023
Outstanding Student Science Association Member	September 2023
Top 16 in the 27th Intelligent Agent Contest at Tsinghua University	May 2023
Second place in the long jump and 400 meters events at the "John Mo" Cup Track and Field Meet of Tsinghua University.	April 2023
Third prize in Tsinghua University's 2023 Mech-Electronic Design Contest	March 2023
Gold medal in 38th Chinese Physics Olympiad (CPhO)	January 2022

## DECLARATION

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I hereby declare that all the details furnished above are true to the best of my knowledge and belief.