

ZHANG Xiaopeng

(+1) 773 683 4688 | xpengzhang0302@uchicago.edu

EDUCATION

Toyota Technological Institute at Chicago Chicago, IL, USA
Visiting Student 2025 – 2026

Advised by Matthew Walter.

Data Science Institute (DSI), The University of Chicago Chicago, USA
M.S. in Data Science 09/2024 – 06/2026

- **Courses:** Introduction to Data Science; Introduction to Data Systems and Data Design; Introduction to Machine Learning and Neural Networks; Natural Language Processing; Introduction to AI: Deep Learning and GAI; Learning, Decisions and Limits; Human-Robot Interaction: Research and Practice; Responsible Use of Data and Algorithms; Planning, Learning, and Estimation for Robotics and Artificial Intelligence
- **Thesis:** Coming soon

Institute for Advanced Study (IAS), Shenzhen University Shenzhen, China
B.S. in Mathematics and Applied Mathematics (Innovational Class in Science and Engineering) 09/2020 – 06/2024
Graduate with Honor

- **Cumulative GPA:** 4.21/4.5 (Weighted Average Score: 91.8)
- **Ranking:** Top 1 (1/17 in mathematics, 1/57 in IAS)

SCHOLARSHIP & HONORS

- National Scholarship (Awarded by Central Government of China) (2022-2023) (top 0.2% in China)
- Outstanding Graduate with Honor (2024) (top 1%)
- Discipline Scholarship (Awarded for excellent student whose rank is top 0.5% in Chinese National College Entrance Examination, 642/750) (2020)
- Outstanding Innovative Talent (First Prize) (2020, 2020-2021, 2021-2022, 2022-2023)
- Star of Learning (First Prize) (2021, 2022, 2023) (top 1 in IAS)
- Star of Double Innovations (2021-2022) (top 5% in IAS)

STANDARDIZED TEST

- **GRE Mathematics Subject Test:** 900 (93%)
- **IETLS:** 7.0

COMPETITION EXPERIENCE

The 14th National Mathematics Competition for College Students
Individual Participant 05/2023

- Contest problems in Mathematical analysis, advanced algebra, analytical geometry, real analysis, complex functions, probability theory and mathematical statistics, differential geometry, and abstract algebra;
- Won the **National First Prize in China** in the Senior Group for mathematics specialty.

China Undergraduate Mathematical Contest in Modeling
Participant in Group 09/2023

- Formulated the mathematical model;
- Analyzed and assessed the model and its results to validate its accuracy;

- Won the **First Prize in Guangdong Region** and the result is recommended and the **National Second Prize in China**.

The 14th National Mathematics Competition for College Students, Guangdong Region
Individual Participant 11/2022

- Won the **First Prize** for mathematics specialty.

The 13rd National Mathematics Competition for College Students, Guangdong Region
Individual Participant 12/2021

- Won the **First Prize** for mathematics specialty.

Mathematical Contest in Modeling (MCM)
Team Leader & Participant in Group 02/2021

- Coordinated the team to complete the mathematical model and programming and achieve the expected results;
- Responsible for the writing of the research paper;
- Greatly strengthened skills in research, modeling, mathematics, teamwork, communication, etc.
- Won the **H Award**.

RESEARCH PROJECTS

StackGen's 3D extension 03/2025 – Present
Advised by Prof. Matthew Walter, TTIC

- Stack 3D stable block structures from 2D silhouette cues using diffusion. Our model conditions on multi-view binary masks (above/front/left) and block types, and generates per-block 6-DoF poses via a transformer denoiser.
- GNN and energy-guided diffusion model are used.

Heliostat field optimization problem 09/2023 – 01/2024

- Develop a solution to the installation of heliostat, which is a key component in tower solar thermal power station;
- Using methods like Element Method, KD-Tree, RayTracing, etc. to calculate the current system performance.

Seminar in Learning from Data 09/2022 – 01/2023

- Using the textbooks prepared by Gilbert Strang;
- Image recognition was performed using machine learning.

TA EXPERIENCE

Institute for Advanced Study (IAS), Shenzhen University Shenzhen, China
Teaching Assistant to Prof. Xuan Benjin, Instructor of Course Advanced Calculus 09/2022 – 01/2023

- Provided office hour for *Advanced Calculus* and kept a record of the teaching and learning effect;
- Graded students' assignments or papers, provided feedback on assignments and solved students' perplexities.

ADDITIONAL INFORMATION

Languages: Chinese (Native), English

Research Areas: Robotics, Diffusion Model, Deep Learning, Computer Vision

Tools & Technologies: Git, Docker, Google Cloud Platform