

# KAIYAN ZHENG

Personal Résumé

(She/Her)

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## Education

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### The University of Michigan, Ann Arbor

Ann Arbor, Michigan

*Entering Fall 2024*

- **Department:** College of Literature, Science and the Arts
- **Program:** B.S. in Data Science & Mathematical Sciences

### The Chinese University of Hong Kong, Shenzhen

Shenzhen, China

*Sophomore, September 2022 - July 2024*

- **Department:** Jointly launched by School of Science and Engineering, School of Data Science & School of Management and Economics
- **GPA:** 3.6 (Top 20%)
- **Program:** Financial Engineering - Quantitative Finance
- **Core Coursework:** C/C++ Programming, Database Systems, Data Structures, Stochastic Processes, Ordinary Differential Equations, Optimization, Discrete Mathematics, Probability and Statistics

## Awards

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CUHK(SZ) Bowen Scholarship

2022-2024

CUHK(SZ) Dean's List

Academic Year 2022-2023

Second Prize, China Undergraduate Mathematical Contest in Modeling

2023

First Prize, China National High School Biology Olympiad

2021

## Research Projects

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### Federated Unlearning with Gradient Descent and Conflict Mitigation

With Zibin Pan et al.

*Research Paper Project (Submitted to AAAI 2025)*

*May. 2024 to Aug. 2024*

- At Laboratory of Energy Internet supervised by Prof. Junhua Zhao
- Federated Unlearning seeks to remove specific client's data from the Federated Learning global model without significant retraining
- Our proposed FedOSD introduces an unlearning cross entropy loss and calculates an orthogonal steepest descent direction, improving unlearning efficiency and maintaining model utility, which is verified by extensive experiments.

### Machine Learning Meets Micro-robotics

With Jiachun Zheng et.al.

*Review Article (To be submitted)*

*Oct. 2023 To Present*

- At Medical Micro-Robotics Laboratory supervised by Prof. Zhuoran Zhang
- Discussed about the recent innovations in learning-based micro-robots, especially in the medical robotics field.
- Responsible for the Planning section in the review

## Academic Experience

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### School of Data Science, CUHK(SZ)

Shenzhen, China

*Undergraduate Student Teaching Fellow of CSC1001*

*Sept. 2023 to Dec. 2023*

- CSC1001 [Introduction to Computer Science: Programming Methodology]: Introductory Python course
- Engage in homework grading design for 1000+ students
- Holding labs every week, answering questions for students online and offline

### School of Data Science, CUHK(SZ)

Shenzhen, China

*Academic Mentor and Academic Coordinator for Future Freshman Winter Camp*

*Feb. 2024*

- Conducted lectures to 250+ students (Introductory Machine Learning) for introducing university courses during the winter camp
- Planned and managing the lecture time slots and materials