

# ZIJIAN CHEN

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Address: 4720 Medical Sciences Center, 1300 University Avenue, Madison, WI

## EDUCATION

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### **Boston University**

incoming Ph.D. student in Electrical Engineering

2023 - Now

Advisor: Archana Venkataraman

### **University of Wisconsin - Madison**

M.A. in Mathematics (with concentration in probability & PDEs)

2022 - 2023

Visiting Undergraduate student in Mathematics

2021 - 2022

Advisor: Hao Shen

### **East China Normal University - Shanghai Jiao Tong University**

B.Sc. in Statistics

2018 - 2022

Bachelor minor: Mathematics

2020 - 2022

## RESEARCH AND PROFESSIONAL EXPERIENCE

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### Research Assistantship

**Moo K Chung's Group**, Madison WI

2021 - 2023

Faculty supervisor: Moo K Chung

- *Wasserstein distance and its application in neural anatomy*
- *Topological data analysis*

**Jin Xu's Group**, Shanghai, PRC

2019 - 2021

Faculty supervisor: Jin Xu

- *Clinical trial design and analysis*

## PUBLICATIONS

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- [4] **Chen, Z.**, Das S., Chung, M.K. 2022, Sulcal Pattern Analysis with the Wasserstein Distance. *accepted in ISBI 2023*
- [3] Dakurah, S., Anand, D.V., **Chen, Z.**, Chung, M.K. 2022, Modeling Cycles in Brain Networks Using Hodge Laplacian, Medical Image Computing and Computer Assisted Intervention - MICCAI 2022. Lecture Notes in Computer Science, vol 13431. Springer, Cham. (received travel award).
- [2] Chung, M.K., **Chen, Z.** 2022, Embedding of Functional Human Brain Networks on a Sphere. <https://arxiv.org/abs/2204.03653>
- [1] Liu, T., **Chen, Z.**, Xu, J. 2021, Epidemiological characteristics and incubation period of SARS-CoV-2 during the 2020-2021 winter pandemic wave in north China: an observational study. J Med Virol.2021;1-6.

## CONFERENCES AND TALKS

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### Invited talks

2023 **Sulcal Pattern Matching with the Wasserstein Distance**,

ISBI 2023 Special section *Wasserstein Distance in Biomedical Imaging*, in Cartagena de Indias, Columbia.

Invited by Moo K. Chung.

2021 **A review of sample size calculation in Phase III SARS-CoV-2 vaccine clinical trials**,

Shanghai Biostatistics Forum (SBF) Q3 Event, 2021.

Invited by Jin Xu.

### Poster presentations

2023 **Sulcal Pattern Matching with the Wasserstein Distance**,

ISBI 2023, Cartagena de Indias, Columbia.

2022 **Multiscale Representation of Brain Networks In The Hyperbolic Space**,  
2022 Computation and Informatics in Biology and Medicine Annual Retreat, Univ of Wisconsin - Madison.

### Others

2023 **Lecture: Simplicial homology and persistent homology**,  
ISBI 2023 Tutorial section: *Topological Data Analysis for Biomedical Imaging Data*  
Help prepare lecture materials.

## TEACHING AND MENTORING

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### Projects mentored in UW Madison

- Undergraduate Research Project Feb-May. 2022  
Project name: Vectors of smallest slope for translation surfaces.
- Directed Reading Program Feb-May. 2022  
Topic: Probabilistic Perspectives in Machine Learning.

### Teaching Assistantship/Graders

- Course: *MATH 320: Linear Algebra and Differential Equations*. Univ of Wisconsin - Madison Fall 2021  
Responsibilities: grading weekly homework and two exams (90 students).
- Course: *Biostatistics*. East China Normal University Summer Semester 2021  
Responsibilities: instructing computer lab session (20 credit hours), writing and grading homework, recitation and holding office hours.

## FELLOWSHIPS AND AWARDS

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### Fellowships

- Distinguished Electrical Engineering Fellowship (\$40,000), Boston University 2023
- ECNU Outstanding Student Fellowship (CNY \$3500, CNY \$1000\*2). 2019, 2020, 2021

### Competetion awards

- National First Prize in Chinese Undergraduate Mathematical Modeling Contest. Sep. 2020
- Finalist (top 1% worldwide) in Interdisciplinary Contest in Modeling. Feb. 2020
- National Third Prize in Chinese Undergraduate Mathematics Competition. Nov. 2019

## REFERENCES

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Available upon requests.