

MENGXIAO GAO

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Education

Tsinghua University

Bachelor of Science in Mathematics and Physics + Civil Engineering and Systems

cumulative GPA: 3.88/4.00

Sep. 2021 – Jun. 2025(expected)

Beijing, China

Relevant Coursework

Numerical Analysis(A), Probability Theory(A), Statistical Inference(A-), Statistical Computing and Software(A-), Introduction to Causal Inference(A-), Linear Regression Analysis(A-), Multivariate Statistical Analysis(A-)

Research Experience

IV Method and Local Discovery Partitioning

Oct. 2023 – Present

Supervised by Prof. Kyra Gan

Cornell University

- By applying casual DAGs and local discovery partitioning algorithms, we develop a new polynomial-time algorithm for selecting instruments out of variable sets containing at least one confounder and two instruments.
- Paper is still under preparation.

Research on Ice Shelf Fracture Tracking

Oct. 2022 – Sep. 2023

Supervised by Prof. Di Long

Tsinghua University

- Using satellite remote sensing data obtained from Google Earth Engine, a study on the tracking of fractured ice shelves has been conducted.
- In the course of our research, we have successfully obtained information regarding the fracture and movements of Iceberg A74 and Iceberg A81.

Course Projects

Machine Learning Based on Medical Indicators of Heart Failure Patients

Jun. 2023

- By using methods such as principal component analysis and logistic regression analysis, an analysis of the main influencing factors of heart failure has been carried out. A practical model has been proposed for assessing the mortality rate of patients based on their medical indicators.

Using machine learning methods to analyze slope stability

Aug. 2023

- By employing methods such as KNN, logistic regression, decision trees and others, we conducted an analysis and prediction of slope stability based on a dataset comprising 206 sets of slope parameters.
- By integrating the constructed model with practical mechanics, we successfully improved the prediction accuracy by 20 percent .

Technical Skills

Programming Languages: Python, R, C&C++

Developer Tools: VS Code, R studio

Languages: Chinese(native), English(proficient),Russian(second foreign language)