FEIYAN MA

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EDUCATION

Tsinghua University   *Sep. 2021 - Jun. 2026 (expected)*
Undergraduate at Weiyang College   Overall GPA: 3.88/4.00
Major in Mathematics and Physics

SKILLS

Programming	R, Python, LaTeX, Git
Language	Chinese (native), English (TOEFL 108 [R30/L26/S23/W29]), French

PUBLICATIONS & PREPRINTS

(* indicates equal contribution.)

(**Preprint**) Xinyuan Fan*, Feiyan Ma*, Chenlei Leng, Weichi Wu. "Low-Rank Approaches to Graphon Modeling in Networks". [arXiv link]

RESEARCH EXPERIENCE

Low-Rank Approaches to Graphon Learning in Networks   Mar 2024 - Jan 2025
Supervised by Prof. Weichi Wu   *DSDS, Tsinghua University*

· We propose a novel approach that directly leverages a low-rank representation of the graphon for parsimonious modeling. This representation naturally yields both a low-rank connection probability matrix and a low-rank graphon — two tasks that are often infeasible in existing literature — while also addressing the well-known identification issues in graphon estimation.
· By exploiting the additive structure of this representation, we develop an efficient sequential fitting algorithm that estimates the low-rank connection matrix using subgraph counts and reconstructs the graphon function through interpolation.
· We provide the convergence rate of our method, and validate its computational efficiency and estimation accuracy through comprehensive simulation studies.

RELEVANT COURSES

Undergraduate Core Courses: Probability Theory (1) (A+), Measures and Integrals (A), Numerical Analysis (A), Basic Functional Analysis (A), Linear Regression Analysis (A-), Statistical Inference (A-), Reliability Data and Survival Analysis (A), ...

Other Relevant Courses: Abstract Algebra (A), Topology (A), Differential Geometry (A), Financial Statistics (A+), Operation Research (A), Intro to Biostatistics (A), Intro to Optimization Theory (A-), Topics in Logics (A), Advanced Topics in Linear Algebra (A-), Partial Differential Equations (ongoing), ...

Graduate-Level Courses: Advanced Mathematical Statistics I (A), Advanced Mathematical Statistics II (A-), Computational Probability (A), Probability (2) (B+), Statistical Analysis of Network Data (ongoing), Advanced Statistical Methodology (ongoing)

HONORS & AWARDS

Honorable Mention, 2024 Mathematical Contest in Modeling	Feb 2024
Gold Medal, The 19th China Girls Mathematical Olympiad (CGMO)	Aug 2020
First Prize, National High School Mathematics League, Shanghai Region	Sep 2020