

# Xuanrui Feng

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## EDUCATION

### Bachelor in Mathematics

Sep. 2020 - Jul. 2024

School of Mathematical Sciences, Peking University, China

GPA: 3.892/4.0

- Selected Courses: Functions of Real Variables (100), Functional Analysis (100), Partial Differential Equations (98), Ordinary Differential Equations (Honor) (99), Theory of Functions of Complex Variables (97), Partial Differential Equation 2 (95), Probability Theory (98), Abstract Algebra (99), Introduction to Differential Manifolds (97).
- Graduate Courses: Topics in Analysis and PDE (98), Real Analysis (97), Elliptic PDE of Second Order (93), Qualitative Theory of Ordinary Differential Equations (93), Abstract Algebra II (94), Homology Theory (94), Advanced Theory of Probability (93), Functional Analysis II (87).

## PUBLICATIONS & PREPRINTS

**Relative Entropy Method for Particle Approximation of the Landau Equation for Maxwellian Molecules** | Aug. 2024

- Joint work with José Antonio Carrillo, Shuchen Guo, Pierre-Emmanuel Jabin and Zhenfu Wang.

**Quantitative Propagation of Chaos for 2D Viscous Vortex Model on the Whole Space** | *Preprint* Oct. 2023

- Joint work with Zhenfu Wang. Submitted to Peking Mathematical Journal.

## ACADEMIC EXPERIENCE

**Peking University** | *Participant*

Aug. 2024

- Participated in **Summer School on Propagation of Chaos in Analysis and Probability**.
- Studied mean-field theory and propagation of chaos results from over 20 speakers.

**ETH Zürich** | *Participant*

Jan. 2024

- Participated in **Kinetic and hydrodynamic PDEs. Conference in honour of François Golse's 60th birthday**.
- Studied kinetic and hydrodynamic theory from over 20 speakers.

**Peking University** | *Undergraduate Researcher (Advisor: Prof. Zhenfu Wang, BICMR)*

Jul. 2023 - Oct. 2023

- Studied mean-field limit and propagation of chaos for many particle systems.
- Proved the **entropic propagation of chaos for 2D viscous vortex model on the whole space** (preprint on arXiv).

**Peking University** | *Participant of Undergraduate Discussing Class*

Oct. 2023 - Dec. 2023

- Read and discussed the book **Vorticity and Incompressible Flow** by Majda and Bertozzi.
- Reported on the topic of **global existence of 2D Navier-Stokes equation**.

**Peking University** | *Participant of Undergraduate Discussing Class*

Mar. 2023 - Jun. 2023

- Read and discussed the notes **Lectures on Harmonic Analysis** by Thomas Wolff.
- Reported on the topic of **development of Falconer distance set conjecture**.

**Peking University** | *Participant of Undergraduate Discussing Class*

Sep. 2022 - Dec. 2022

- Read and discussed the notes **Ergodic Theory for Stochastic PDEs** and **Convergence of Markov Processes** by Martin Hairer.
- Reported on the topic of **Hörmander condition and Malliavin analysis**.

## HONORS & AWARDS

**Beijing** | *Award*

Jun. 2024

- Outstanding Graduate Thesis of Beijing

**Tsinghua University** | *Award*

Aug. 2022

- Bronze Medal in S.-T. Yau College Student Mathematics Contest

**Peking University** | *Award*

Dec. 2021, 2022

- First Prize in Beijing College Student Mathematics Contest

**Beijing** | *Honor*

Jun. 2024

- Outstanding Graduates of Beijing

**Beijing International Center for Mathematical Research** | *Honor*

Jun. 2024

- Huaixin Bachelor

**Peking University** | *Honor*

Dec. 2022, 2023

- National Scholarship (top 0.2% nation-wide)

**Peking University** | *Honor*

Dec. 2022

- Pacemaker to Merit Student of Peking University

**Peking University** | *Honor*

Dec. 2023

- Merit Student of Peking University