# Yixuan Wang (Roy)

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## EDUCATION BACKGROUND

**Peking University**
B.S., School of Mathematics, Peking University, Beijing, China 2016—2020
Elite Undergraduate Training Program in Applied Math and in Pure Math, Excellent Graduate
Overall GPA: **3.84**/4, Rank: **7**/200, Major GPA: **3.91**/4, GRE (**166+170+4.5**), TOEFL (**112**)
Graduation Date: 2020.07 **Summa Cum Laude in Beijing**

Summer Intern at **Caltech** on multiscale problems, supervised by Prof. Thomas Hou 2019

**California Institute of Technology**
Graduate Student, Applied + Computational Mathematics, supervised by Prof. Thomas Hou 2020—
Department of Computing + Mathematical Sciences, Caltech, Pasadena, California

## EXPERIENCE

**Janestreet**
Quant Trader Intern, Hong Kong 2020.6—2020.9

## PUBLICATIONS

- R. Li, Y. Wang and **Y. Wang**. Approximation to Singular Quadratic Collision Model in Fokker-Planck-Landau Equation, SIAM Journal on Scientific Computing, 42(3), 2020, pp. B792-B815.
- Y. Chen, T.Y. Hou and **Y. Wang**. Exponential Convergence for Multiscale Linear Elliptic PDEs via Adaptive Edge Basis Functions, Multiscale Modeling and Simulation, 19(2), 2021, pp. 980–1010.
- Z. Liu, S. Qian, **Y. Wang,** Y. Yan and T Yang. Schrödinger Principal-component Analysis: On the Duality between Principal-component Analysis and the Schrödinger Equation, Physics Review E, 104(2), 2021, 025307.
- Y. Chen, T.Y. Hou and **Y. Wang**. Exponentially Convergent Multiscale Methods for 2D High Frequency Heterogeneous Helmholtz Equations, Multiscale Modeling and Simulation, 21(3), 2023, pp. 849–883.
- Z. Liu, A. Stuart and **Y. Wang**. (2022) Second Order Ensemble Langevin Method for Sampling and Inverse Problems.
- H. Maust, Z. Li, **Y. Wang**, D. Leibovici, O. Bruno, T.Y. Hou and A. Anandkumar. Fourier Continuation for Exact Derivative Computation in Physics-Informed Neural Operators, NeurIPS 2022, 3rd AI for Science workshop.
- Y. Chen, T.Y. Hou and **Y. Wang**. Exponentially Convergent Multiscale Finite Element Method, Communications on Applied Mathematics and Computation, 6(2), 2024, 862-878.
- T.Y. Hou and **Y. Wang**. Blowup Analysis for a Quasi-exact 1D Model of 3D Euler and Navier-Stokes, Nonlinearity, 37(3), 2024, 035001.
- T.Y. Hou, V.T. Nguyen and **Y. Wang**. (2024) L^2-based Stability of Blowup with Log Correction for Semilinear Heat Equation.
- Z. Liu, **Y. Wang**, S. Vaidya, F. Ruehle, J. Halverson, M. Soljacic, T.Y. Hou and M. Tegmark. (2024) KAN: Kolmogorov-Arnold Networks.

## INVITED TALKS

- Model reduction for FPL equation, Forum of elite Ph. D. program, Peking University, November 2018
- Hermite spectral method for kinetic equations, CSAIM's students' forum, Tsinghua, December 2018
- Oversampling edge basis for Helmholtz equations, CSAIM's annual meeting, Foshan, September 2019
- Multiscale basis for Helmholtz equation, Workshop on Complex Fluids, CSRC, November 2019
- Exponential convergence for Helmholtz equations, ACM lunch seminar, Peking University, May 2021
- Ensemble Hamiltonian Monte Carlo, EnKF workshop, Balestrand, Norway, May 2022
- ExpMsFEM, Numerical Analysis seminar, University of Hong Kong, Sep. 2022
- Blowup for a quasi-exact 1D model of 3D Euler, Workshop on Fluids, Duke University, May. 2023
- ExpMsFEM, Minisymposium on rough PDEs, ICIAM at Waseda University, Tokyo, Japan, Aug. 2023

## MATHEMATICAL ENGAGEMENT

- Founding President of the SIAM Student Chapter at Caltech 2021-2023
- Member of DEI committee at Caltech 2022-

## AWARDS AND HONORS

- Silver Award at 56th International Mathematical Olympiad, 2016
- All Three 2nd Places in Analysis, Applied Math, and Overall Individual Competitions, S.-T. Yau College Mathematics Contests, 2019
- 1st Place in Team Competition, S.-T. Yau College Mathematics Contests, 2019
- 1st Prize in National University Math Competition, 2017
- 1st Prize in National University Math Modeling Competition, 2017
- 1st Place in Citadel Datathon, China, 2018
- National Scholarship, 2018, 2019
- Representative of PKU for National Scholarship, 2019
- PKU Person of the Year, 2019
- PKU May 4th-Award, 2020