

# Yixuan Wang (Roy)

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Applied and Comput. Math., Caltech, Pasadena, CA 91125

## 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

### Beijing International Center for Mathematical Research (BICMR)

Research Assistant, Hosted by Prof. Ruo Li, Prof. Zhenfu Wang, and Prof. Zhennan Zhou 2020—2021  
BICMR, Peking University, Beijing, China

### California Institute of Technology

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

## PUBLICATIONS

- R. Li, Y.L Wang and **Y.X. Wang**. (2018) 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**. (2020) 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. (2020) 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**. (2021) Exponentially convergent multiscale methods for high frequency heterogeneous Helmholtz equations.
- 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. (2022) 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**. (2022) Exponentially Convergent Multiscale Finite Element Method.

## INVITED TALKS

- Model reduction for FPL equation, Forum of elite Ph. D. program, Peking University, Nov. 2018
- Hermite spectral method for kinetic equations, CSAIM students' forum, Tsinghua University, Dec. 2018
- Exponential multiscale basis for Helmholtz equations, CSAIM annual meeting, Foshan, Sep. 2019
- Exponential multiscale basis for Helmholtz equations, Workshop on Complex Fluids, CSRC, Nov. 2019
- Exponential multiscale basis 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
- 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—
- Member of DEI committee at Caltech 2022—

## AWARDS AND HONORS

- Silver Award at 56th International Mathematical Olympiad, 2016
- All Three 2<sup>nd</sup> Places in Analysis, Applied Math, and Overall Individual Competitions, S.-T. Yau College Mathematics Contests, 2019

- 1<sup>st</sup> Place in Team Competition, S.-T. Yau College Mathematics Contests, 2019
- 1<sup>st</sup> Prize in National University Math Competition, 2017
- 1<sup>st</sup> Prize in National University Math Modeling Competition, 2017
- 1<sup>st</sup> Place in Citadel Datathon, China, 2018
- National Scholarship, 2017-2018
- Representative of PKU for National Scholarship, 2018-2019
- PKU Person of the Year, 2019
- PKU May 4<sup>th</sup>-Award, 2020