# YUAN CHEN

### CONTACT INFORMATION

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#### **EDUCATION**

Expected 2026	The Ohio State University Ph.D. in Mathematics, Advisor: Prof. Dongbin Xiu
June 2021	The George Washington University M.S. in Statistics, GPA: 4.0/4.0
June 2019	Hohai University B.E. in Environmental Science, GPA Rank: 1 <sup>st</sup> /82

#### Research Interests

- Data-driven modeling of systems driven by (stochastic) differential equations
- Numerical simulation of stochastic differential equations and rare events
- Finite Element Method, discontinuous Galerkin Method, Virtual Element Method
- Interface problems and coupling mathematical models arising from applications

#### **Publications**

- 11. Y. Chen, D. Xiu and X. Zhang. On Enforcing Non-negativity in Polynomial Approximations in High Dimensions., (2024+), submitted.
- 10. Z. Xu, <u>Y. Chen</u>, Q. Chen and D. Xiu. Modeling Unknown Stochastic Dynamical System via Autoencoder., (2024+), *submitted*.
- 9. Y. Chen, and X. Zhang. A High-Order Immersed  $C^0$  Interior Penalty Method for Biharmonic Interface Problems., (2024+), preprint.
- 8. Y. Chen, and D. Xiu. Learning Stochastic Dynamical System via Flow Map Operator., *Journal of Computational Physics*, 508(2024), 112984.
- 7. Y. Chen, and X. Zhang. Solving Navier-Stokes Interface Problems with Fixed/Moving Interfaces on Unfitted Meshes, *Journal of Scientific Computing*, 98(2024), 19.
- 6. <u>Y. Chen</u>, and Y. Xing. Optimal Error Estimates of Ultra-weak Discontinuous Galerkin Methods with Generalized Numerical Fluxes for Multi-dimensional Convection-Diffusion and Biharmonic Equations., *Mathematics of Computation*, (2024+), to appear.
- 5. V. Churchill, Y. Chen, Z. Xu, and D. Xiu. DNN Modeling of Partial Differential Equations with Incomplete Data, *Journal of Computational Physics*, 493(2023), 112502.
- 4. <u>Y. Chen</u>, S. Hou, and X. Zhang. emi and Fully Discrete Analysis for An Immersed Finite Element Method for Elastodynamic Interface Problems, *Computers and Mathematics with Applications*, 147(2023), 92-110.

- 3. <u>Y. Chen</u> And X. Zhang. A  $\mathcal{P}_2$ - $\mathcal{P}_1$  Partially Penalized Immersed Finite Element Method for Stokes Interface Problems, *International Journal of Numerical Analysis and Modeling*, 18(2021), no. 1, 120-141.
- Y. Chen, S. Hou, and X. Zhang. A Bilinear Partially Penalized Immersed Finite Element Method for Elliptic Interface Problems with Multi-domains and Triple Junction Points, Results in Applied Mathematics, 8(2020), 100100.
- 1. Y. Chen, S. Hou, and X. Zhang. An Immersed Finite Element Method for Elliptic Interface Problems with Multi-domain and Triple Junction Points, *Advances in Applied Mathematics and Mechanics*, 11(2019), no. 5, 1005-1021.

### Conferences and Seminars

- 2024 SIAM Conference on Mathematics of Data Science, Atlanta, October 2024
- 2024 SIAM Conference on Imaging Science, Atlanta, May 2024
- Engineering Mechanics Institute Conference and Probabilistic Mechanics & Reliability Conference 2024, Chicago, May 2024
- 2024 SIAM Conference on Uncertainty Quantification, Trieste, Italy, Feb 2024
- The 8th Annual Meeting of SIAM Central States Section, University of Nebraska Lincoln, October 2023
- 17th U. S. National Congress on Computational Mechanics, Albuquerque, Jul 2023
- University of California San Diego CCoM Seminar, University of California San Diego, May 2023
- Oklahoma State University Numerical Analysis Seminar, Oklahoma State University, October 2022
- The 7th Annual Meeting of SIAM Central States Section, Oklahoma State University, October 2022
- 2022 SIAM Annual Meeting, Pittsburgh, July 2022
- The 6th Annual Meeting of SIAM Central States Section, University of Kansas, October 2021

#### TEACHING EXPERIENCES

#### Ohio State University

Spring 2023 Recitation MATH 1151 (Calculus I) Fall 2022 Recitation MATH 1151 (Calculus I)

#### George Washington University

Fall 2020 Recitation MATH 1051 (Finite Math for the Social and Management Sciences)

#### Professional Services

#### Seminar Series Organized

• OSU Student Computational Mathematics Seminar, 2022-present (co-organized with Qifan Chen)

#### Referee Services

- Reviewer for Applied Numerical Mathematics
- Reviewer for BMC Public Health
- Reviewer for International Journal of Numerical Analysis and Modeling
- Reviewer for Journal of Computational Physics

• Reviewer for Journal of Scientific Computing

## SCHOLARSHIPS & CERTIFICATES

SIAM Travel Award	2022-2023
• OSU Distinguished University Fellowship	2021
• GWU Award of Graduate Assistantship	2020

## SKILLS

Programming	C/C++, Python, R, MySql, IITEX, VB, MATLAB
Vectorization	Python(NumPy), MATLAB
Data Analysis	Python (pandas, matplotlib, geopy), R (ggplot, dplyr, tidyr), QGIS, ECHARTS, D <sub>3</sub> , sas
Sci. Computing	Python (NumPy, SciPy, SymPy, multiprocessing), MATLAB, Mathematica
Deep Learning	Python (Numpy, PyTorch, TensorFlow)