Yuan Chen

Contact Information

Address:	MW 330, 231 West 18th Avenue, Columbus, OH
Email:	chen.11050@osu.edu
Web-Page:	iamyuanchen.xyz

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**: $1^{\text{st}}/82$

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

12. <u>**Y. Chen**</u>, and D. Xiu. Modeling Unknown Stochastic Dynamical System Subject to External Excitation., (**2024+**), *submitted*.

11. <u>**Y. Chen**</u>, 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. <u>**Y. Chen**</u>, and X. Zhang. A High-Order Immersed C^0 Interior Penalty Method for Biharmonic Interface Problems., (**2024+**), *preprint*.

8. <u>**Y. Chen**</u>, and D. Xiu. Learning Stochastic Dynamical System via Flow Map Operator., *Journal of Computational Physics*, 508(**2024**), 112984.

7. <u>**Y. Chen**</u>, 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*, 93(**2024**), 2135-2183.

5. V. Churchill, <u>**Y. Chen**</u>, Z. Xu, and D. Xiu. DNN Modeling of Partial Differential Equations with Incomplete Data, *Journal of Computational Physics*, 493(**2023**), 112502.

4. **Y. Chen**, 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. **Y. Chen** 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.

2. **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, LaTeX, VB, Matlab
Vectorization	Python(NumPy), Matlab
Data Analysis	Python (pandas, matplotlib, geopy), R (ggplot, dplyr, tidyr), Qgis, Echarts, D$_3$, sas
Sci. Computing	Python (NumPy, SciPy, SymPy, multiprocessing), Matlab, Mathematica
Deep Learning	Python (Numpy, PyTorch, TensorFlow)