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
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**: 1st/82

Research Interests

1. Data-driven modeling of systems driven by (stochastic) differential equations
2. Numerical simulation of Stochastic Differential Equations and Rare Events
3. Finite Element Method, discontinuous Galerkin Method, Virtual Element Method
4. 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, **Y. Chen**, Q. Chen and D. Xiu. *Modeling Unknown Stochastic Dynamical System via Autoencoder.*, (**2024+**), submitted.
9. **Y. Chen**, and D. Xiu. *Learning Stochastic Dynamical System via Flow Map Operator.*, (**2024+**), submitted.
8. **Y. Chen**, and X. Zhang. *A High-Order Immersed C^0 Interior Penalty Method for Biharmonic Interface Problems.*, (**2024+**), preprint.
7. **Y. Chen**, and X. Zhang. *Solving Navier-Stokes Interface Problems with Fixed/Moving Interfaces on Unfitted Meshes*, J. Sci. Comput., 98(**2024**), 19.
6. **Y. Chen**, and Y. Xing. *Optimal Error Estimates of Ultra-weak Discontinuous Galerkin Methods with Generalized Numerical Fluxes for Multi-dimensional Convection-Diffusion and Biharmonic Equations.*, Math. Comput., (**2024+**), to appear.
5. V. Churchill, **Y. Chen**, Z. Xu, and D. Xiu. *DNN Modeling of Partial Differential Equations with Incomplete Data*, J. Comput. Phys., 493(**2023**), 112502.
4. **Y. Chen**, S. Hou, and X. Zhang. *Semi and Fully Discrete Analysis for An Immersed Finite Element Method for Elastodynamic Interface Problems*, Comput. Math. with Appl., 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*, Int. J. Numer. Anal. Mod., 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 Appl. Math., 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*, Adv. Appl. Math. Mech., 11(**2019**), no. 5, 1005-1021.

Talks and Conferences

9. Data Driven Modeling of Stochastic Systems. **EMI/PMC 2024**, University of Illinois Urbana-Champaign. (May 2024).
8. Data Driven Modeling of Stochastic Systems. **2024 SIAM Conference on Uncertainty Quantification**, Trieste, Italy. (Feb 2024).
7. Optimal Error Estimates of Ultra-weak DG Methods with Generalized Numerical Fluxes. **The 8th Annual Meeting of SIAM Central States Section**, University of Nebraska Lincoln. (October 2023).
6. Data Driven Modeling of Unknown Stochastic Systems. **17th U. S. National Congress on Computational Mechanics**, Albuquerque. (July 2023).
5. Learning Stochastic Dynamical System via Flow Map Operator. **University of California San Diego CCoM Seminar**, UCSD. (May 2023, Online).
4. Finite Element Computation using Python. **Oklahoma State University Numerical Analysis Seminar**, Oklahoma State University. (October 2022).
3. A High-Order Immersed C^0 Interior Penalty Method for Biharmonic Interface Problems. **The 7th Annual Meeting of SIAM Central States Section**, Oklahoma State University. (October 2022).
2. A High-Order Immersed C^0 Interior Penalty Method for Biharmonic Interface Problems. **2022 SIAM Annual Meeting**, Pittsburgh. (July 2022).
1. An Immersed $\mathcal{P}_2$-$\mathcal{P}_1$ Finite Element Method for Stokes Interface Problems. **The 6th Annual Meeting of SIAM Central States Section**, University of Kansas. (October 2021, Online).

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 Service

Seminar Series Organized

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

Referee Services

1. Reviewer for BMC Public Health
2. Reviewer for International Journal of Numerical Analysis and Modeling
3. Reviewer for Journal of Computational Physics
4. 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)