Yuan Chen

Contact Information

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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. Broad Areas of Scientific Computing and Numerical Analysis
2. Finite Element Method, Discontinuous Galerkin Method, Virtual Element Method
3. Machine Learning Methods for Partial Differential Equations
4. Interface problems and Coupling Mathematical Models Arising from Applications
5. Modeling of Stochastic Differential Equations and Rare Events

Publications

8. **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.*, (**2023+**), submitted.
7. V. Churchill, **Y. Chen**, Z. Xu, and D. Xiu. *Modeling of Partially-observed Partial Differential Equation Systems.*, (**2023+**), submitted.
6. **Y. Chen**, and X. Zhang. *A High-Order Immersed C^0 Interior Penalty Method for Biharmonic Interface Problems.*, (**2023+**), preprint.
5. **Y. Chen**, and X. Zhang. *Solving Navier-Stokes Interface Problems with Fixed/Moving Interfaces on Unfitted Meshes*, (**2023+**), submitted.
4. **Y. Chen**, S. Hou, and X. Zhang. *Semi and Fully Discrete Analysis for An Immersed Finite Element Method for Elastodynamic Interface Problems.*, (**2023+**), submitted.
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

6. Finite Element Computation using Python. **Oklahoma State University Numerical Analysis Seminar**, Oklahoma State University. (October 2022).
5. 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).

4. A High-Order Immersed C^0 Interior Penalty Method for Biharmonic Interface Problems. **2022 SIAM Annual Meeting**, Pittsburgh. (July 2022).
3. 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).
2. Immersed Finite Element Methods for Interface Problems with Multi-Domains and Triple-Junction Points. **GW Research Day**, The George Washington University. (April 2020, Online).
1. Immersed Finite Element Methods for Interface Problems with Multi-Domains and Triple-Junction Points. **AMS Southeastern Sectional Meeting**, University of Virginia. (March 2020, Cancelled).

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).

Scholarships & Certificates

- SIAM Travel Award 2022
- 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)