Yuan Chen

Contact Information

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Education

Present	**The Ohio State University** Ph.D. in Mathematics
June 2021	**The George Washington University** M.S. in Statistics and Mathematics
June 2019	**Hohai University** B.E. in Environmental Science

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. Design, Analysis and Applications of Immersed Finite Element Method for interface problems

Publications

6. **Y. Chen**, and X. Zhang. *A High-Order Immersed C^0 Interior Penalty Method for Biharmonic Interface Problems.*, (**2022+**), preprint.
5. **Y. Chen**, and X. Zhang. *Solving Navier-Stokes Interface Problems with Fixed/Moving Interfaces on Unfitted Meshes*, (**2022+**), submitted.
4. **Y. Chen**, S. Hou, and X. Zhang. *Error Estimates for a Partially Penalized Immersed Finite Element Method for Elastodynamic Interface Problems*, (**2022+**), preprint.
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 Posters

3. A High-Order Immersed C^0 Interior Penalty Method for Biharmonic Interface Problems. **2022 SIAM Annual Meeting**, David L. Lawrence Convention Center, Pittsburgh, PA. (Jul. 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, KS (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, D.C. (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, VA (March 2020, Cancelled).

Teaching Experiences

George Washington University

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

Scholarships & Certificates

- OSU Distinguished University Fellowship 2021
- GWU Award of Graduate Assistantship 2020
- 3^{rd} Prize of China Undergraduate Mathematical Contest in Modeling 2017

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)