# 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**: $1^{st}$/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

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. *DNN Modeling of Partial Differential Equations with Incomplete Data*, (**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

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**

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

**George Washington University**

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| 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

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

## Skills

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| **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, D3, sas |
| **Sci. Computing** | Python (NumPy, SciPy, SymPy, multiprocessing), Matlab, Mathematica |
| **Deep Learning** | Python (Numpy, PyTorch, TensorFlow) |