

# YUAN CHEN

## CONTACT INFORMATION

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## EDUCATION

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|---------------|---|
| Expected 2026 | <b>The Ohio State University</b><br>Ph.D. in Mathematics      |
| June 2021     | <b>The George Washington University</b><br>M.S. in Statistics |
| June 2019     | <b>Hohai University</b><br>B.E. in Environmental Science      |

## RESEARCH INTERESTS

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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

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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 CONFERENCES

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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

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### Ohio State University

Fall 2022 Recitation MATH 1151 (Calculus I)

### George Washington University

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

## 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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| <b>Programming</b>    | C/C++, Python, R, MySQL, <del>TeX</del> LaTeX, VB, MATLAB   |
| <b>Vectorization</b>  | Python(NumPy), MATLAB   |
| <b>Data Analysis</b>  | Python (pandas, matplotlib, geopy), R (ggplot, dplyr, tidyr), QGIS, ECHARTS, D <sub>3</sub> , sas |
| <b>Sci. Computing</b> | Python (NumPy, SciPy, SymPy, multiprocessing), MATLAB, Mathematica                                |
| <b>Deep Learning</b>  | Python (Numpy, PyTorch, TensorFlow)   |