GUODONG MA

PhD student in Computational Mathematics

Nanjing Normal University, Nanjing, China

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RESEARCH INTERESTS

Numerical methods for partial differential equations; finite element and virtual element methods; unfitted methods for biharmonic interface problems.

Research focuses on Nitsche-type extended virtual element methods for problems with discontinuous material coefficients, including well-posedness, convergence analysis, algorithm implementation, and numerical experiments.

EDUCATION

Nanjing Normal University | Sep 2023 - Present

PhD student, Computational Mathematics. Expected graduation: June 2027.
Advisor: Prof. Jinru Chen.

Nanjing Normal University | Sep 2020 - Jun 2023

Master's degree, Computational Mathematics. Advisor: Prof. Jinru Chen.

Shandong Normal University | Sep 2016 - Jun 2020

BSc, Mathematics and Applied Mathematics.

PUBLICATIONS

Guodong Ma, Jinru Chen, Feng Wang. A Nitsche's extended Morley-type virtual element method for the biharmonic interface problem. *Computer Methods in Applied Mechanics and Engineering*, **451** (2026), 118708. doi:10.1016/j.cma.2025.118708

Guodong Ma, Jinru Chen, Feng Wang. A Nitsche's extended nonconforming virtual element method for biharmonic PDEs involving interfaces. *Computers & Mathematics with Applications*, **192** (2025), 134-154. doi:10.1016/j.camwa.2025.05.016

HONORS AND AWARDS

2026.06 First Prize, Outstanding Graduate Scholarship (Duxue category), Nanjing Normal University.

2026.01 Advanced Individual in Science and Technology Activities, 2024-2025, Nanjing Normal University.

2025.12 18th Huang Kaibin Scholarship, School of Mathematical Sciences, Nanjing Normal University.

2024.06 Outstanding Communist Youth League Member, 2023 annual recognition, Nanjing Normal University.

2021.06 Outstanding Graduate Student Union Officer, 2020-2021, School of Mathematical Sciences, Nanjing Normal University.

SKILLS

MATLAB; finite element and virtual element implementation; mesh generation and numerical analysis; LaTeX; PDE theory, Sobolev spaces, and numerical error analysis.