Yue Wu 吴越

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EDUCATION

University of Science and Technology of China (USTC) --- School of the Gifted Young Hefei, China
Bachelor of Science in Information and Computational Science (expected) *Sep. 2019 - Jul. 2023*
Overall GPA: 3.98 / 4.3 (Ranking **1st** out of 39, 2019 fall - present)

RESEARCH INTERESTS

- **High-order numerical methods for PDEs**: discontinuous Galerkin, finite difference/volume WENO, spectral method
- **Scientific computing**: parallel solvers, efficient algorithms

RESEARCH EXPERIENCE

Numerical Simulation of Plasma Equilibrium Evolution in Nuclear Fusion Hefei, China
Supervised by Professor Mengping Zhang and Yan Jiang at USTC *Jun. 2021 - May. 2022*

- Developed a parallel hybrid finite difference-pseudo spectral code for RMHD in toroidal geometry
- Performed long-time simulation of resistive tearing mode instability in Tokamak, with a focus on the logarithmic growth rate of kinetic energy, mode structure, and three distinct evolution stages
- Checked the results with researchers from the Institute of Plasma Physics, Chinese Academy of Science, and against results from existing open-source code
- Discussed the methodology and results with Prof. Chi-Wang Shu from Brown University
- Surveyed and implemented DG schemes for controlling global divergence of the magnetic field in ideal MHD

Positivity-Preserving Conservative Low Rank Methods for Vlasov Dynamics Online
Supervised by Professor Xiangxiong Zhang at Purdue University *June. 2022 - Aug. 2022*

- Developed a low-rank approximation algorithm with positivity preservation and orthogonality constraints via optimization
- Used the algorithm to post-process the data generated from the dynamic low-rank solver

TEACHING EXPERIENCE

- TA, Computational Methods B, USTC (instructor: Prof. Jingrun Chen) *Spring 2022*

HONORS AND AWARDS

- China National Scholarship, 2020-2021 academic year (Top 3%) Dec. 2021
- China National Scholarship, 2019-2020 academic year (Top 3%) Dec. 2020
- Winner's Prize, the 13th S.-T. Yau College Student Mathematics Contest, Analysis and PDEs track Aug. 2022
- Second Prize, the 13th China National Mathematics Competition for College Students Dec. 2021
- Promotional Ambassador for Wuxi as an Outstanding Student Representative Aug. 2020

SELECTED COURSEWORK

- **Math:** Real Analysis, Functional Analysis, Differential Equations I/II (undergraduate/graduate)
- **Numerics:** Numerical Analysis, Numerical PDE (graduate), FEM (graduate), CFD (graduate; audit)
- **Programming:** Data Structure and Database, Foundations of Algorithms, Python for Scientific Computing

TECHNICAL PROFICIENCIES

- **Programming Languages:** C / C++ (3 yrs), Matlab (2 yrs), Fortran (1 yrs)
- **Technical Skills:** MPI, OpenMP, LaTeX, Mathematica
- **Languages:** Mandarin Chinese (Native), English (Fluent)

STANDARDIZED TESTS

- **TOEFL iBT:** 106 (R: 28, L: 27, S: 25, W: 26)
- **GRE General:** 327 (V: 157, Q: 170)
- **GRE Subject (Mathematics):** 970 (97%)