

LYU LIYAO

PERSONAL DATA

NAME: Lyu Liyao
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EDUCATION EXPERIENCE

Sept. 2016 - Present	<i>Soochow University, Suzhou, China</i> Bachelor of Science(BS): Mathematics Grade Point Average (GPA): 3.7/4.0 (Rank: Top 20%)
Jan. 2019 - May. 2019	<i>University of California Berkeley, CA, USA</i> Exchange Student
Sep. 2020 - Sep. 2021	<i>Michigan State University, Online (because of Covid)</i> Phd Student
Sep. 2021 - Present	<i>Michigan State University, MI, USA</i> Phd Student

RESEARCH EXPERIENCE

Aug. 2019 - Nov. 2019	<i>University of Massachusetts Dartmouth, MA, USA</i> Advised by Mathematical Science Professor Dr. Zheng Chen Local Discontinuous Galerkin Method for Fractional Diffusion Equation
Jul. 2019 - Aug. 2019	<i>Hong Kong University of Science and Technology, HK, China</i> Advised by Mathematical Sciences Professor Dr. Yang Xiang
March. 2018 - March. 2020	<i>Soochow University, Suzhou, China</i> Advised by Mathematical Sciences Professor Dr. Jingrun Chen Estimate the Exciton Diffusion Length of Organic Semiconductors Funded By: Undergraduate Training Program for Innovation and Entrepreneurship, Soochow University

SCHOLARSHIPS AND CERTIFICATES

2018	Outstanding Leadership Scholarship
2018	Second Prize in Contemporary University Mathematical Contest in Modeling (top 3%)
2017	Third Prize in Chinese Mathematics Competitions
2017	Academic Excellence Award (top 10%)
2016	Second Prize in Freshmen Debate Competition

PUBLICATION

L. Lyu, and H. Lei. Construction of coarse-grained molecular dynamics with many-body non-Markovian memory. *Phys. Rev. Lett.* 131:177301, 2023

L. Lyu, Z. Zhang, M. Chen, and J. Chen. MIM: A deep mixed residual method for solving high-order partial differential equations. *J. Comput. Phys.* 452:110930, 2022.

J. Chen, S. Jin, and **L. Lyu**. A Consensus-Based Global Optimization Method with Adaptive Momentum Estimation. *Commun. Comput. Phys.* 31(4): 1296-1316, 2022.

L. Lyu, and Z. Chen. Local discontinuous Galerkin methods with novel basis for fractional diffusion equations with non-smooth solutions. *Commun. Appl. Math. Comput.* 4(1): 227-249, 2022.

J. Chen, S. Jin, and **L. Lyu**. A Deep Learning Based Discontinuous Galerkin Method for Hyperbolic Equations with Discontinuous Solutions and Random Uncertainties. *J. Comp. Math.* to appear.

S. Liang, **L. Lyu**, C. Wang, and H. Yang. Reproducing activation function for deep learning. *arXiv Preprint:arXiv:2101.04844*, 2021.

L. Lyu, K. Wu, R. Du, and J. Chen. Enforcing Exact Boundary and Initial Conditions in the Deep Mixed Residual Method. *SIAM Trans. Appl. Math.* 2(4): 748, 2021.

J. Chen, R. Du, P. Li, and **L. Lyu**. Quasi-Monte Carlo sampling for machine-learning partial differential equations. *Numer. Math. Theor. Meth. Appl.* 14(2): 377, 2021

L. Lyu, Z. Zhang, and J. Chen. A Qmc-Deep Learning Method for Diffusivity Estimation in Random Domains. *Numer. Math. Theor. Meth. Appl.* 13(4): 908, 2020.