Dr. Xiaoyao Ma

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1. Professional Preparation

Lanzhou University	Physics	B.S., 2007
Georgia Institute of Technology	Physics	M.S., 2011
Louisiana State University	Physics	Ph.D., 2015

2. Appointments

2018- Quantiative Associate, Wells Fargo Bank, Charlotte, NC
2015-2018 Consultant, P&L Scientific Inc, New York

3. Selected Publications

(i) Sign Learning Kink-based (SiLK) **Quantum Monte Carlo** for molecular systems. J. Chem. Phys. **144**, 014101 (2016); http://dx.doi.org/10.1063/1.4939145

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- [1]Department of Physics and Astronomy, Louisiana State University, Baton Rouge, Louisiana 70803, USA
- [2]Department of Natural Sciences and Mathematics, Dominican University of California, San Rafael, California 94901, USA
- [3]Department of Chemistry, Louisiana State University, Baton Rouge, Louisiana 70803, USA
- [4]Center for Computation and Technology, Louisiana State University, Baton Rouge, Louisiana 70803, USA
- [5]William R. Wiley Environmental Molecular Sciences Laboratory, Battelle, Pacific Northwest National Laboratory, Richland, Washington 99352, USA

4. Research Leadership

First author model validator in Fixed Income Models, Wells Fargo, 2020-present
Lead developer of Sign Learning Quantum Monte Carlo , LSU 2011-2015

5. Leadership and Professionalism

First developer in NSF-funded LaSigma SiLK Project, LSU, 2011-2015

6. Commitment to Diversity and Inclusiveness

 Co-Organizer Lasigma STEM High School diversified teachers training program 2012-2015

7. Mentoring

Mentor 1 intern in Wells Fargo , 2020-2021
Mentor 3 undergraduates in LSU, 2011-2015

8. Major Awards, Fellowships, Invited Lectureship, Honors

La-Sigma Fellowship, LSU , 2011-2015
Invited Lecture, Department of Chemistry (Garnet Chan Group), Princeton University, 2014

9. Major Career Contribution and Legacy

Co-Invented Sign Learning Quantum Monte Carlo algorithm

First Scientist applied the SiLK algorithm to chemical molecules

SiLK algorithm reach 10-100 times accuracy compared to other chemical methods, such as coupled cluster methods, perturbation methods.