

Mehrdad Zomorodiyani

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PRINCIPAL INTERESTS

Scientific Machine Learning, Computational Fluid Dynamics, Stochastic Modeling

EDUCATION

- | | |
|---|-------------------------------|
| Oklahoma State University
<i>PhD in Chemical Engineering</i>
• Research Areas: “Optimization, Computational Fluid Dynamics, Machine Learning”
Advisors: Dr. Zheyu Jiang, Dr. Yu Feng | 2023 – now
Stillwater, OK |
| Oklahoma State University
<i>PhD in Mechanical and Aerospace Engineering (discontinued)</i>
• Research Areas: “Model Reduction, Machine Learning, Probabilistic Modeling, High Performance Computing, Quantum Computing, Mixed Precision Learning, etc.”
Advisor: Dr. Omer San | 2021 – 2022
Stillwater, OK |
| University of Tehran
<i>MSc in Mechanical Engineering</i>
• Thesis Topic: “Simulation of Pulsatile Flow in a Cerebral aneurysm Using a Hemorheological Model in the Context of Spectral/hp Element” Advisor: Dr. Azadeh Jafari github | 2015 – 2018
Tehran, Iran |

EXPERIENCE

- | | |
|---|---|
| Graduate Research Assistant
<i>Oklahoma State University</i>
• Quantum K-nearest neighbor classification algorithm github
• Estimate viscosity by running mcmc on data from a viscous burgers 1d solution.
• Nonlinear proper orthogonal decomposition for convection-dominated flows. | Jun. 2021 – Jun. 2022
Stillwater, OK |
| Graduate Teaching Assistant
<i>Oklahoma State University</i>
• MAE 3403 Computer Methods in Analysis and Design (140/140/70 students for three semesters).
• Conducting grading, office hours, exam proctoring, make homework solution recording. | Aug. 2021 – Dec. 2022
Stillwater, OK |

TECHNICAL SKILLS

- **Programming:** Python (NumPy, SciPy, Pandas), shell script, C++, SQL, MATLAB, Git, **TDD**, CI
- **Machine Learning:** TensorFlow (Keras), **PyTorch**, Pyro, Orbit, PyMC
- **Technical Specialties:** FDM, **PCA/POD**, DMD

SELECTED GRADUATE COURSES

- **Oklahoma State University:** Numerical Methods, Stochastic Systems
- **University of Tehran:** Mathematics, Fluid Mechanics, Numerical Methods

SELECTED PROJECTS

- **Open Access**
 1. GPU-Accelerated Simulation of SOD Shock Tube Problem. [github](#)
- **Booklet**
 1. *Mehrdad Zomorodiyani*, and Alireza Sadeghi “Investigating Different Aspects of Magnesium Application in Self-Heating Food Containers”

PRESENTATIONS

- **Oral Talks**
 1. *Mehrdad Zomorodiyani*, and Omer San. “Automatic Mixed-Precision in Computational Fluid Dynamics.” 7th Annual Meeting of SIAM Central States Section (2022)
 2. *Mehrdad Zomorodiyani*, and Omer San. ”Nonlinear Proper Orthogonal Decomposition (NLPOD) for Compressible Flows” 6th Annual Meeting of SIAM Central States Section (2021)

Last updated: January 23, 2023

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