Romit Maulik

Leadership Computing Facility,
Argonne National Laboratory, Lemont, IL 60439
Phone: (405) 982-0161; Email: rmaulik@anl.gov

Education and Training

Oklahoma State University, Mechanical & Aerospace Engineering, Ph.D., 2019.
Oklahoma State University, Mechanical & Aerospace Engineering, M.S., 2015.
Birla Institute of Technology, India, Mechanical Engineering, Bachelor of Engineering, 2012.

Research and Professional Experience

2019–Present: *Argonne Scholar*, Argonne National Laboratory.
2020–Present: *Research Assistant Professor*, Department of Applied Mathematics, IIT-Chicago.
2019–2019: *Predoctoral Fellow*, MCS, Argonne National Laboratory.
2014–2018: *Graduate Research Assistant*, Oklahoma State University.
2012–2013: *Design Engineer*, Tata Technologies Ltd., Pune, India.

Honors and Awards

[1] Margaret Butler Fellow, Leadership Computing Facility, 2019-2021.
[2] Outstanding Graduate Student, College of Engineering Architecture and Technology, Oklahoma State University, 2018.
[3] Graduate College Robberson Summer Research Fellowship, Oklahoma State University, 2017.
[4] John Brammer Fellowship, Oklahoma State University, 2016.
[5] Graduate College Top Tier Fellowship, Oklahoma State University, 2016.

Related Publications

1. **R. Maulik**, B. Lusch, P. Balaprakash: Reduced-order modeling of advection-dominated systems with recurrent neural networks and convolutional autoencoders , *Physics of Fluids, To appear.*
2. **R. Maulik**, T. Botsas, N. Ramachandra, M. Lachlan, I. Pan: Latent-space time evolution of non-intrusive reduced-order models using Gaussian process emulation, *Physica D: Nonlinear Phenomena*, 132797, 2021.
3. **R. Maulik**, R. Egele, B. Lusch, P. Balaprakash: Recurrent neural network architecture search for geophysical emulation, *Proceedings of the International Conference for High Performance Computing, Networking, Storage and Analysis (SC), 2020, 10.5555/3433701.3433711.*
4. **R. Maulik**, P. Balaprakash, B. Lusch: Non-autoregressive time-series methods for stable parameteric reduced-order models, *Physics of Fluids*, 32, 087115, 2020.
5. **R. Maulik**, A. Mohan, B. Lusch, S. Madireddy, P. Balaprakash, D. Livescu: Time-series learning of latent-space dynamics for reduced-order model closure, *Physica D.*, 405, 132368, 2020.
6. **R. Maulik**, O. San, A. Rasheed, P. Vedula: Subgrid modeling for two-dimensional turbulence using artificial neural networks, *Journal of Fluid Mechanics*, 858, 122-144, 2019.

7. O. San, **R. Maulik**: Stratified Kelvin-Helmholtz turbulence of compressible shear flows, *Nonlinear Processes in Geophysics*, 25, 457–476, 2018.
8. O.San, **R.Maulik**: Extreme learning machine for reduced order modeling of turbulent geophysical flows, *Physical Review E*, 97, 042322, 2018.
9. **R. Maulik**, O. San: A novel dynamic framework for subgrid-scale parametrization of mesoscale eddies in quasigeostrophic turbulent flows, *Computers and Mathematics with Applications*, 74, 420-445, 2017.
10. **R.Maulik**, O.San: A neural network approach for the blind deconvolution of turbulent flows, *Journal of Fluid Mechanics*, 831, 151-181, 2017.

Synergistic Activities

1. Program Committee - ADSP, INCITE allocations.
2. Tutorial leads - ATPESC 2020, ALCF SDL Workshop 2019, 2020, ALCF CP Workshop 2020.
3. Co-organizer & Session chair - SIAM Conference on Computational Science and Engineering, 2019, 2020, 2021.
4. Co-organizer & Session chair - U.S. Congress on Computational Mechanics, Chicago, IL, 2021.
5. Co-organizer - AIAA Aviation Forum, Reno, NV, 2020.