Navid Shervani-Tabar

Department of Applied and Computational Mathematics and Statistics

University of Notre Dame

nshervt@gmail.com, www.nsherv.weebly.com

Education

2021	Ph.D., Aerospace and Mechanical Engineering Minor: Computational Science and Engineering University of Notre Dame
2019	M.Sc., Applied and Computational Mathematics and Statistics University of Notre Dame
2017	M.Sc., Mechanical Engineering University of Colorado Boulder
2014	B.Sc., Mechanical Engineering University of Tabriz

Positions

2021 - present	Postdoctoral Research Associate
	University of Notre Dame
	Department of Applied and Computational Mathematics and Statistics

Publications

- Shervani-Tabar, Navid, and Robert Rosenbaum. "Meta-learning biologically plausible plasticity rules with random feedback pathways", *Nature Communications (In Press, 2023).*
- Shervani-Tabar, Navid, and Nicholas Zabaras. "Physics-Constrained Predictive Molecular Latent Space Discovery with Graph Scattering Variational Autoencoder", *arXiv preprint*, arXiv:2009.13878 (2021). (code)
- Shervani-Tabar, Navid. "Multiresolution Approximation of a Bayesian Inverse Problem using Second-Generation Wavelets", *preprint*.
- Shervani-Tabar, Navid, and Oleg V. Vasilyev. "Stabilized Conservative Level Set Method", *Journal of Computational Physics*, 375 (2018): 1033-1044.
- Shervani-Tabar, Mohammad T., and Navid Shervani-Tabar. "**Movement of Location of Tip Vortex Cavitation along Blade Edge due to Reduction of Flow Rate in an Axial Pump**", *International Journal of Mechanical and Aerospace Engineering*, 6(33), pp. 191-195, 2012.
- Shervani-Tabar, Navid, R. Sedaaghi, R. Mohajerin, Mohammad T. Shervani-Tabar, and Raed I. Bourisli. "Experimental and Computational Investigation on the Cavitation Phenomenon in a Centrifugal Pump", Proceedings of the Eighth International Symposium on Cavitation (CAV 2012), pp. 489, 2012.

Selected Teaching Experience

Fall 2022	Deep Learning with Graphs <i>Instructor</i> , designed graduate-level course introducing the fundamental concepts and advanced topics on deep learning with graphs (<u>course webpage</u>).
	University of Notre Dame
Fall 2018	Statistical Computing Methods
	<i>Teaching Assistant</i> , graduate-level course on Bayesian computing and Monte Carlo methods; designed assignments, held recitation sessions and office hours. Prof. N. Zabaras, University of Notre Dame
Fall 2016	Methods of Engineering Analysis I
	Teaching Assistant, graduate-level course on advanced engineering mathematics; designed exams and assignments, held recitations and office hours. Prof. F. Vernerey, University of Colorado Boulder

Research Mentoring

2022

James Galante

Undergraduate student, Project: "Improving the comparison of deep neural models with brain benchmarks using the BrainScore platform", Department of Applied and Computational Mathematics and Statistics, University of Notre Dame

Selected Courses

- Neural Networks
- Statistical Computing Methods
- Probabilistic Graphical Models
- Applied Bayesian Statistics
- Applied Probability
- Bayesian Methods for Surrogate Modeling and Dimensionality Reduction
- Advanced Scientific Computing
- Stochastic Analysis

Honors and Awards

- Outstanding Mech. Eng. Research Potential Fellowship, University of Colorado Boulder, 2016.
- Department of Mechanical Engineering Travel Grant, University of Colorado Boulder, 2016.
- STEMinar Grant, University of Colorado Boulder, 2015, 2016.
- Dean's Office Matching Grant, University of Colorado Boulder, 2016.
- Top Researcher Award (Class of 2014), University of Tabriz, 2014.

Technical Skills

Programming LanguagesR, Python, C++, Fortran, MATLABMachine learning PackagesPyTorch, Scikit-learn, Keras