

**Rohit Tripathy**  
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## EDUCATION

- **Purdue University** West Lafayette, IN  
*PhD., Mechanical Engineering; GPA - 3.8/4.0* January. 2016 - May 2020 (expected)
  - Advisor: Prof. Ilias Bilionis
  - Research focused on surrogate modeling for high-dimensional and multifidelity uncertainty quantification using deep neural networks and Gaussian-processes.
  - Currently working on physics-informed machine learning.
- **Purdue University** West Lafayette, IN  
*MS., Mechanical Engineering; GPA - 3.61/4.0* August 2014-December 2015
- **VIT University** Vellore, India  
*B. Tech., Mechanical Engineering; GPA - 9.04/10.0.* July 2010-May 2014

## WORK EXPERIENCE

- **Math and CS division, Argonne National Laboratory** Lemont, IL  
*Givens Associate (PhD intern)* May 2017 - August 2017
  - Recurrent deep neural network architectures (RNNs/LSTMs) for wind-speed forecasting.
- **QR Commodities, JPMorgan Chase & Co.** New York City, NY  
*Quantitative Research-Machine Learning Summer Associate* May 2018 - August 2018
  - Deep neural networks for pricing spread options in the high-correlation limit.
- **QR Spread (EMM), JPMorgan Chase & Co.** New York City, NY  
*Quantitative Research-Machine Learning Summer Associate* May 2019 - August 2019
  - Machine learning based alpha signal generation model for investment grade US corporate bonds.

## PUBLICATIONS AND PREPRINTS

- **Rohit Tripathy**, Ilias Bilionis, and Marcial Gonzalez. *Gaussian processes with built-in dimensionality reduction: Applications to high-dimensional uncertainty propagation.* Journal of Computational Physics 321 (2016): 191-223.
- **Rohit Tripathy**, Ilias Bilionis. *Deep UQ: Learning deep neural network surrogate models for high dimensional uncertainty quantification.* Journal of Computational Physics 375 (2018): 565-588.
- **Rohit Tripathy**, Ilias Bilionis. *Deep active subspaces - a scalable method for high-dimensional uncertainty propagation.* arXiv preprint arXiv:1902.10527 (2019) (to appear in the proceedings of the ASME IDETC-CIE 2019 conference).
- Sharmila Karumuri, **Rohit Tripathy**, Ilias Bilionis, Jitesh Panchal, *Simulator-free Solution of High-Dimensional Stochastic Elliptic Partial Differential Equations using Deep Neural Networks.*, ArXiv preprint arXiv:1902.05200 (2019) (accepted for publication at the Journal of Computational Physics).

## SELECTED TALKS / PRESENTATIONS

- **ASME IDETC-CIE 2019** Anaheim, CA  
*Deep active subspaces for high-dimensional uncertainty quantification.* March 2019
- **SIAM CSE 2019** Spokane, WA  
*DNN response surfaces for multifidelity information fusion.* March 2019

- **SIAM CSE 2017** Atlanta, GA  
*Learning multiscale stochastic FEM basis functions with deep neural networks.* March 2017
- **ASME Verification and Validation (V&V) Symposium** Las Vegas, NV  
*Probabilistic Active subspaces.* May 2016

## TEACHING EXPERIENCE

- **ME 597 - Uncertainty Quantification** Purdue University  
*Teaching Assistant* January 2018 - May 2018
  - Helped instructor (Prof. Ilias Bilonis) prepare lecture material and homework problem sets.
  - Conducted in-class hands-on tutorial sessions and weekly office hours.
  - Graded all assignments and projects.
- **ME 597 - Uncertainty Quantification** Purdue University  
*Teaching Assistant* January 2020 - May 2020

## MENTORING EXPERIENCE

- Mentored [NCN-SURF](#) student interns in the Predictive Science Lab in 2015 and 2016.
- Mentored junior students at the Predictive Science Lab (2018 - Present).

## PROFESSIONAL MEMBERSHIPS

- Academic and Professional Development (APD) Committee of Purdue Graduate Student Government (PGSG) [*September 2014 - April 2015*].
- Society of Industrial and Applied Mathematics (SIAM) student member [*August 2015- present*].
- SIAM Purdue chapter Treasurer [*August 2016 - May 2017*].

## SERVICE

- Served as peer reviewer for articles submitted to *SIAM/ASA Journal of Uncertainty Quantification* (SIAM JUQ) *International Journal of Uncertainty Quantification* (IJUQ) and *Journal of Computational Physics* (JCP).
- Organizer of a mini-symposium on *Physics-constrained AI for dynamical systems* at the SIAM Mathematics & Data Science (MDS) 2020 conference.

## SKILLS

- **Languages (In order of comfort):** Python, R, MATLAB.
- **Machine Learning/Data Analysis techniques:** Linear models, Kernel methods, Deep learning, Bayesian data analysis, Latent Variable models, generative models, Time series analysis.
- **Deep Learning frameworks:** PyTorch, tensorflow, keras,
- **Probabilistic programming:** Edward, pyMC, pyMC3, Pyro