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) *(accepted for publication at ASME IDETC 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) (*under review 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 UQ 2018** Garden Grove, CA
  Learning deep neural network (DNN) surrogate models for uncertainty quantification. *April 2018*
- **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 Bilionis) prepare lecture material and homework problem sets.
  - Conducted in-class hands-on tutorial sessions and weekly office hours.
  - Graded all assignments and projects.

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*].

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`

SELECTED OTHER PROJECTS

- **Finite element solver for a plane stress hypoelasticity problem**
  Finite Element Methods course, ME 681. *Jan. 2015 - May 2015*
  - Implemented in `Python` from scratch a nonlinear finite element solver for 2D hypoelasticity problem for a square plate.
- **2-D Incompressible Navier Stokes solver**
  Computational Fluid Dynamics course, ME 614 *Jan. 2015 - May 2015*
  - Implemented, in `Python`, from scratch, a fully conservative finite difference solver with a staggered grid formulation to solve the lid driven cavity problem.