

# Ramansh Sharma

---

CONTACT INFORMATION	72 Central Campus Dr WEB 2883 Salt Lake City, UT 84112 USA	<i>Voice:</i> (801) 414-6734 <i>E-mail:</i> ramansh@cs.utah.edu <i>url:</i> <a href="https://rsmath.github.io">https://rsmath.github.io</a>
RESEARCH INTERESTS	Neural operator architectures (DeepONet, FNO, Kernels) for interpretable, scalable, and adaptive operator learning and physics-informed learning for scientific machine learning applications.	
EDUCATION	<b>University of Utah</b> , Salt Lake City, Utah USA, <b>2023-2028</b> (expected) Ph.D. in Computing <b>Advisor:</b> Varun Shankar <b>GPA:</b> 3.8/4  <b>SRM University</b> , Chennai, Tamil Nadu India, <b>2019-2023</b> Bachelors of Technology, Computer Science and Engineering <b>GPA:</b> 9.7/10 (3.9/4)	
HONORS AND AWARDS	<ul style="list-style-type: none"><li>• Graduated first class with distinction from SRM University, 2023</li><li>• NeurIPS Scholar Award, 2022</li><li>• NeurIPS Travel Award, 2022</li></ul>	
ACADEMIC EXPERIENCE	<b>University of Utah</b> , Salt Lake City, UT USA <i>Graduate Student</i> <b>August, 2023 - Present</b> Ongoing Ph.D. research on operator learning methods for scientific machine learning applications.  <i>Teaching Assistant</i> <b>August, 2024 - December 2024</b> CS 4230/6230 (Parallel and High-Performance Computing)	
PUBLICATIONS	Google Scholar - <a href="https://scholar.google.com/citations?hl=en&amp;user=lUmqHckAAAAJ">https://scholar.google.com/citations?hl=en&amp;user=lUmqHckAAAAJ</a> <ol style="list-style-type: none"><li>1. <b>Ramansh Sharma</b> and Varun Shankar. Ensemble and Mixture-of-Experts DeepONets For Operator Learning (Submitted to <b>NeurIPS, 2024</b>).</li><li>2. <b>Ramansh Sharma</b> and Varun Shankar. Accelerated Training of Physics Informed Neural Networks (PINNs) using Meshless Discretizations (<b>NeurIPS, 2022</b>).</li><li>3. Jordi Planas, Daniel F. Quevedo, Galina Naydenova, <b>Ramansh Sharma</b>, Cristina Taylor, Kathleen Buckingham, and Rong Fang. Beyond modeling: NLP Pipeline for efficient environmental policy analysis (<b>KDD, 2021</b>).</li></ol>	
SERVICE	Vice-President of Graduate Student Advisory Committee.	
PROFESSIONAL EXPERIENCE	<b>Kahlert School of Computing, University of Utah</b> <i>Research Assistant</i> <b>August, 2023 - Present</b> Working on interpretable, scalable, and adaptive operator learning methods for a variety of scientific machine learning applications.  <b>Approximate Bayesian Inference team, RIKEN</b> <i>Remote Collaborator</i> <b>October, 2021 - June, 2023</b> Research focusing on <b>curriculum learning</b> and its advantages over independent and identically distributed ( <b>i.i.d.</b> ) training. Implemented and executed comprehensive experiments with memorability	

metrics such as **residual** and **leverage scores**. Presented technical reports with the methodology and results to the team.

## World Resources Institute

*Machine Learning Engineer*

**February, 2021 - September, 2021**

Identifying economic and financial incentives for forest and landscape restoration using Natural Language Processing. Implemented custom **early stopping** features for **sentence transformers**. Led the experiments and discussion around the reproducibility issue in policy instrument **binary** and **multiclass classification** with **Sentence-BERT**. Presented our team's paper, *Beyond modeling: NLP Pipeline for efficient environmental Policy Analysis*, at ACM's annual KDD conference at the Fragile Earth workshop.

## Omdena

*Platform Engineer*

**January, 2021 - September, 2021**

Worked on creating and maintaining Airtable scripts in Javascript to index, modify, and maintain the community database. Developed an end-to-end system for community engagement and participation by integrating GitHub, Slack, and Airtable APIs together. Brought the administrative weekly task time from 45 minutes down to 5 minutes. Worked on designing and creating the first of its kind AI-4-good Python library, OmdenaLore, with more than 35000 lines of code.

*Data Scientist*

**October, 2020 - December, 2020**

Worked as a Data Scientist for a silicon valley startup contract, connecting volunteer opportunities with prospective volunteers in a timebanking system. Designed and implemented multiple recommender models for volunteers and project administrators based on skills and interests. Addressed the cold start problem for recommendation systems and created a feedback system to complement personalization for the users.

*Machine Learning Engineer*

**August, 2020 - September, 2020**

Analyzed the environmental, geographic, geospatial, and socio-economic factors that contributed to illegal dumpsites around the world. Led the ML team through modeling, iterating, and refining classifiers to predict illegal dumpsites based on environmental, geographic, geospatial, and socio-economic factors factors such as population, population density, distance to roads, venue categories, and distance to venue categories.

## GRADUATE COURSEWORK

1. Graduate Algorithms
2. High Dimensional Data Analysis
3. Scientific Computing I
4. Scientific Computing II
5. Probabilistic Machine Learning
6. High Performance & Parallel Computing

## COMPUTER SKILLS

- Languages: Python (**8 years** experience), Matlab (Octave), C++, Java, Javascript.
- Parallel Programming: CUDA, MPI, OpenMP.
- Machine Learning: PyTorch, Jax, Haiku, NNX, Optax, CuPy, TensorFlow.
- Technologies: Weights&Biases, Flask, Heroku, Docker, FastAPI.
- Scientific Visualization: Paraview.