

# RISHABH RANJAN

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rishabh-ranjan.github.io

## EDUCATION

### Doctor of Philosophy (Ph.D.) in Computer Science

Stanford University, advised by Prof. Jure Leskovec

2023 – present

CGPA 4.00/4

Relevant courses: *Language Models from Scratch, Machine Learning with Graphs*

### Visiting Research Scholar

Carnegie Mellon University, hosted by Prof. Zachary Lipton

2022 – 23

Relevant courses: *Philosophical Foundations of Machine Intelligence*

### Bachelor of Technology (B.Tech.) in Computer Science and Engineering

Indian Institute of Technology Delhi

2018 – 22

CGPA 9.90/10, **Institute Rank 1**

Relevant courses: *Deep Learning, Natural Language Processing, Machine Learning, Artificial Intelligence, Data Mining, Linear Algebra, Probability and Stochastic Processes, Calculus, Language and Writing Skill*

## AWARDS

- **Certificate of Achievement** for a top leaderboard position in the course “Language Models from Scratch” 2024
- **School of Engineering Fellowship**, awarded to select first-year PhD students at Stanford 2023
- **President’s Gold Medal** for highest CGPA in the graduating batch at IIT Delhi 2022
- **Suresh Chandra Memorial Trust Award** for the best undergrad thesis project in CS 2022
- All India Rank **154** in **Joint Entrance Examination (Advanced)** among 200,000+ qualified candidates 2018
- **Certificate of Merit** for excellent performance in the **Indian National Mathematical Olympiad** 2017

## PAPERS

(\* denotes equal contribution)

1. Rishabh Ranjan, Saurabh Garg, Mrigank Raman, Carlos Guestrin, Zachary Lipton. **Post-Hoc Reversal: Are We Selecting Models Prematurely?** In *Advances in Neural Information Processing Systems (NeurIPS)*, 2024
2. Rishabh Ranjan\*, Joshua Robinson\*, Weihua Hu\*, Kexin Huang\*, Jiaqi Han, Alejandro Dobles, Matthias Fey, Jan E. Lenssen, Yiwen Yuan, Zecheng Zhang, Xinwei He, Jure Leskovec. **RelBench: A Benchmark for Deep Learning on Relational Databases.** In *Advances in Neural Information Processing Systems (NeurIPS)*, 2024
3. Matthias Fey\*, Weihua Hu\*, Kexin Huang\*, Jan Eric Lenssen\*, Rishabh Ranjan\*, Joshua Robinson\*, Rex Ying, Jiaxuan You, and Jure Leskovec. **Position: Relational Deep Learning - Graph Representation Learning on Relational Databases.** In *International Conference on Machine Learning (ICML)*, 2024
4. Yatin Nandwani\*, Rishabh Ranjan\*, Mausam, and Parag Singla. **A solver-free framework for scalable learning in neural ILP architectures.** In *Advances in Neural Information Processing Systems (NeurIPS)*, 2022
5. Rishabh Ranjan, Siddharth Grover, Sourav Medya, Venkatesan Chakaravarthy, Yogish Sabharwal, and Sayan Ranu. **GREED: A neural framework for learning graph distance functions.** In *Advances in Neural Information Processing Systems (NeurIPS)*, 2022
6. Rishabh Ranjan, Ishita Agrawal, and Subodh Sharma. **Exploiting epochs and symmetries in analysing MPI programs.** In *Proceedings of the 37th IEEE/ACM International Conference on Automated Software Engineering (ASE)*, 2022

## TALKS

1. **Exploiting symmetry for scalable deadlock detection in message passing programs** 2020  
IARCS SAT+SMT Workshop

## INTERNSHIPS

**Semantic Search in SmartTV via Natural Language Processing** Supervisor: Jongjin Bae Samsung Electronics Co. Ltd., South Korea

- Explored SOTA document retrieval techniques with language models like *BERT* and *RoBERTa*
- Integrated *HuggingFace* transformers with *ElasticSearch* via *Docker* containers into a prototype search engine
- Improved performance on *Mean Reciprocal Rank* metric by 20% over a strong baseline in *production* at the time

## ACADEMIC SERVICE

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**Reviewer**, *Neural Information Processing Systems (NeurIPS)*, 2023

**External Reviewer**, *Web Search and Data Mining (WSDM)* 2023