

# RISHABH RANJAN

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rishabh-ranjan.github.io

## EDUCATION

**Doctor of Philosophy (Ph.D.) in Computer Science**  
Stanford University

2023 – present  
CGPA 4.00/4

**Bachelor of Technology (B.Tech.) in Computer Science and Engineering**  
Indian Institute of Technology Delhi

2018 – 22  
CGPA 9.90/10, Institute Rank 1

## AWARDS

- **School of Engineering Fellowship**, awarded to select first-year PhD students at Stanford 2023
- **President's Gold Medal** for highest CGPA in graduating batch at IIT Delhi 2022
- **Suresh Chandra Memorial Trust Award** for best undergrad thesis project in CS 2022
- All India Rank 154 in **Joint Entrance Examination (Advanced)** among 200,000+ 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?** *arXiv preprint*, 2024 [PDF] [Code]
2. 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 [PDF] [Code] [Website]
3. 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 [PDF] [OpenReview] [Poster] [SlidesLive] [Code]
4. 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 [PDF] [OpenReview] [Poster] [SlidesLive] [Code]
5. 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 [PDF] [Code]

## TALKS

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

## INTERNSHIPS

**Deep Learning on Noisy Data**  
Supervisor: Prof. Zachary Lipton

Oct '22 – Aug '23  
Carnegie Mellon University, Pittsburgh PA, USA

- Conducted research full-time as a Visiting Scholar at CMU.
- Resulting publication: **Post-Hoc Reversal: Are We Selecting Models Prematurely?** [arXiv]

**Semantic Search in SmartTV via Natural Language Processing** [Code] [Presentation]  
Supervisor: Jongjin Bae

May '21 – Jul '21  
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

## SELECTED COURSES

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**Stanford.** Language Modeling from Scratch, Machine Learning with Graphs (audit)

**CMU.** Philosophical Foundations of Machine Intelligence

**IIT Delhi.** Natural Language Processing, Deep Learning, Machine Learning, Artificial Intelligence, Data Mining, Linear Algebra, Probability and Stochastic Processes, Calculus, Language and Writing Skill