Pranjal Naman

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Education

Indian Institute of Science — Bengaluru, India
Ph.D. Engineering in Computational & Data Sciences. ***CGPA: 9.4/10*** — *Aug. 2022 – Current*

Netaji Subhas Institute of Technology — New Delhi, India
B.E. in Instrumentation & Control Engineering. ***CGPA: 9.14/10*** — *Aug. 2016 – Jul. 2020*

Research Experience

PhD Student, DREAM Lab, Indian Institute of Science — Bengaluru, India
Principal Investigator*: Prof. Yogesh Simmhan* — *Aug 2022 – Current*

- Design and build scalable system architectures and abstractions for efficient GNN training and inference on large, dynamic, and distributed graph datasets.
- Co-optimize graph characteristics, model design, and distributed hardware to enable low-latency, high-throughput, and practical GNN deployment at scale.

Publications

Ripple: Scalable Incremental GNN Inferencing on Large Streaming Graphs — *July 2025*
Pranjal Naman *and Yogesh Simmhan*
IEEE International Conference on Distributed Computing Systems (ICDCS 2025)

Performance Trade-offs in GNN Inference: A Study on Hardware and Sampling Configurations — *Dec 2024*
Pranjal Naman *and Yogesh Simmhan*
International Conference on High Performance Computing, Data and Analytics Workshop (HiPCW 2024)

Optimizing Federated Learning Using Remote Embeddings for Graph Neural Networks — *Aug 2024*
Pranjal Naman *and Yogesh Simmhan*
European Conference on Parallel Processing (EuroPar 2024)

Topology Aware Aggregation for Federated Graph Learning — *Aug 2024*
Pranjal Naman *and Yogesh Simmhan*
European Conference on Parallel Processing Workshops (EuroParW 2024)

Evaluating Strategies for Federated Graph Learning — *Dec 2023*
Pranjal Naman*, Suved Ghanmode and Yogesh Simmhan*
International Conference on High Performance Computing, Data and Analytics Workshop (HiPCW 2023)

Performance Modelling of Graph Neural Networks — *May 2023*
Pranjal Naman *and Yogesh Simmhan*
IEEE/ACM International Symposium on Cluster, Cloud and Internet Computing Workshops (CCGridW 2023)

To Think Like a Vertex (or Not) for Distributed Training of Graph Neural Networks — *May 2023*
Varad Kulkarni, Akarsh Chaturvedi, ***Pranjal Naman*** *and Yogesh Simmhan*
IEEE/ACM International Symposium on Cluster, Cloud and Internet Computing Workshops (CCGridW 2023)

Awards & Grants

ACM India-IARCS Travel Grant — *2025*
Young Researcher, Pingala Interactions in Computing — *2025*
HiPC SRS Travel Grant — *2024*
Euro-Par PhD Studentship — *2024*
HiPC SRS Travel Grant — *2023*

Work Experience

Software Development Engineer, Soroco — Bengaluru, India
Sep 2020 – Jul 2021

- Played a key role in designing and developing automation solutions for a major e-commerce client. Gained hands-on experience in cloud-based software development.

Software Development Intern, Nucleus Software — New Delhi, India
May 2019 – Jul 2019

- Designed a production-ready voice user interface to support daily operations with support for multiple devices, including phones, wearables, and voice assistants.

Relevant Coursework

Ph.D.: Intro. to Scalable Systems (A+), Data Analytics (A+), Parallel Programming (A+), Scalable Systems for Data Science (A), High Performance Computer Architecture (A), Matrix Theory (B+), Systems for Machine Learning (Audit)
B.E.: Distributed System and Computing, Database Management Systems, Computer Networks, Big Data and Analytics, AI Techniques and Applications