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Sahil Manchanda

Technical Skills

ML Skills: Machine learning for Graphs, Learning Combinatorial optimization, Recommendation Systems, Graph Neural Networks(GNNs), Semantic Search.

Language: Python

Tools: PyTorch, Torch-geometric, Usage of LLM APIs.

Education

2019 – 2025 **Ph.D**, *Computer Science and Engineering*, **Indian Institute of Technology Delhi**, DGPA 10.0/10.0, CGPA 8.73/10

2015 – 2017 **Master**, *Computer Science and Engineering*, **Indian Institute of Technology Guwahati**, 9.14/10.0

2010 – 2014 **Bachelor**, *Information Technology*, **Indraprastha University, Delhi**, 78.4%

2010 **Senior Secondary Education**, *CBSE New Delhi*, 97%

2008 **Secondary Education**, *CBSE New Delhi*, 91.8%

Work Experience

April 2024 - May 2025 **Pocket FM**, India
Research Scientist, Machine Learning
- Developed affinity models to construct personalized user-profiles for recommendation system.
- Performed A/B tests to understand improvement in playtime/paid playtime and other retention metrics.
- Conducted research on language model(embedding) bias for content-based recommendation and semantic similarity. Developed solution to mitigate name-bias and submitted research paper to an ML conference.

June 2023 - Oct 2023 **Qualcomm AI Research**, Amsterdam
Research Intern. Machine Learning for Combinatorial Optimization. Worked on Deep Learning for Chip Design. Publication in AI2SE workshop in AAAI 2025.

Dec 2022 **University of Tokyo**, Japan
Visiting Researcher. Advisor: Prof. Toyotaro Suzumura. Conducted research on LLM for heuristic discovery.

Sep 2020 – Mar 2021 **NAVER Labs**, France
Research Intern. Machine Learning and Optimization for Vehicle Routing. Worked on Meta-Learning to solve generalization issues pertaining to Neural Combinatorial Optimization. Published paper in ECML PKDD 2022.

Aug 2017 – Jan 2019 **Conduent Labs India/Xerox Research Centre India**, Bangalore, India
Research Engineer. Machine Learning and Statistics. Worked on developing Machine learning solutions for fleet management to reduce fleet management cost. Granted US Patent.

June 2014 – July 2015 **Adobe Systems**, India
Software Engineer. Worked in Adobe Acrobat Team

Achievements

2024 IITD-CSE Travel Grant(2 Lakhs INR) for KDD 2024.

2024 ICLR Travel Grant(1500 Euros) for ICLR 2024.

2023 Outstanding reviewer award for ACM CODS COMAD. Awarded to top 3 out of 49 Program Committee members.

2023 ACM IARCS(USD 1000) and Google Travel Grant(USD 2900) for ICML 2023.

2023 Outstanding Teaching Assistanship Award: Database Systems and Graph Neural Networks at IIT Delhi.

2023 Among top 200 young researchers selected across the world to attend the Heidelberg Laureate Forum 2023 in Germany.

2023 Google Travel Grant(USD 3000) for AAAI 2023.

2023 Outstanding Teaching Assistanship Award: Computer Networks course(UG + PG) at IIT Delhi.

2022 Qualcomm Innovation Fellowship Recipient (∼USD 13000).

2015 Graduate Aptitude Test in Engineering : All India rank 273 among 115425 candidates.

2010 CBSE Merit certificate : Received Merit Certificates for Computer Science and Mathematics for being in top 0.1 % of the successful candidates all over India.

Patents

Filed in 2022 **Method and system for meta-learning of neural combinatorial optimization heuristics**
JM Andreoli, S Michel, S Manchanda (Link)

Granted in 2022 **US Patent: Trained pattern analyzer for roll out decision**
S Manchanda, A Rajkumar, S Kaur, N Unny. (Link)

Publications

Arxiv **What is in a name? Mitigating Name Bias in Text Embeddings via Anonymization** [pdf]
S Manchanda and P Shivaswamy

AAAI 2025 AI2SE **NeuroSteiner: A Graph Transformer for Wirelength Estimation** [pdf]
S Manchanda, D Kianfar, M Peschl, R Lepert, M Defferard

KDD 2024 **NeuroCUT: A Neural Approach for Robust Graph Partitioning** [pdf]
R Shah*, K Jain*, S Manchanda*, S Medya, S Ranu

ICLR 2024 **MIRAGE: Model Agnostic Graph Distillation** [pdf]
M Gupta*, S Manchanda*, H Kodamana, S Ranu

LoG 2023 **Generative Modeling for labeled Graphs under Data Scarcity** [pdf]
S Manchanda*, S Gupta*, S Ranu, S Bedathur

ICML 2023 **GRAFENNE: Continual learning on Graphs with Heterogeneous and Dynamic Feature Sets** [pdf]
S Manchanda*, S Gupta*, S Ranu and S Bedathur

ICML 2023 **Stridernet: A Graph Reinforcement Learning Approach to Optimize Atomic Structures on Rough Energy Landscapes** [pdf]
V Bihani, S Manchanda, S Sastry, S Ranu and NMA Krishnan

AAAI 2023 **Lifelong Learning to Solve Mixed Integer Programs** [pdf]
S Manchanda, S Ranu

ECML -PKDD 2022 **On the Generalization of Neural Combinatorial Optimization Heuristics** [pdf]
S Manchanda, S Michel, D Drakulic, J Andreoli

NeurIPS 2021 **NeuroMLR: Robust and Reliable Route Recommendation on Road Networks** [pdf]
J Jain, V Bagadia, S Manchanda and S Ranu

NeurIPS 2020 **GCOMB: Learning heuristics over large graphs via deep reinforcement learning** [pdf]
S Manchanda, A Mittal, A Dhawan, S Medya, S Ranu and A Singh

CYBCONF 2017 **Representation learning of drug and disease terms for drug repositioning** [pdf]
S Manchanda, A Anand

Talks Delivered

2024 LOGML, London(July 2024). Topic: Graph Neural Networks for Optimization.

2023 Heidelberg Laureate Forum, Germany. Topic: Learning to Solve Graph Optimization Problems.

2022 NAVER Labs, France. Topic: Learning to Solve Mixed Integer Programs.

2022 ARCS, Coimbatore, India. Topic: Robust and Reliable Route Recommendation.

Mentorship Experience

2022-2023 Mentored Bachelor thesis of Rishi Shah and Krishnanshu Jain, IIT Delhi

Miscellaneous

2020-2021 Student member, PhD interviews organizing team, CSE, IIT Delhi

2019-Cont	Teaching assistant at IIT Delhi - Computer networks, Data Structures and Algorithms, Database systems, Graph Neural Networks
Reviewer	KDD, ICLR, ICML, NeurIPS, AAAI, LoG, ECML-PKDD, AutoML, AISTATS, TKDD, TKDE, and WSDM
2016-2017	Student representative (M.Tech) - Department Post Graduate Programme Committee, Dept. of CSE, IIT, Guwahati.

References

- Prof. Sayan Ranu, Associate Professor, IIT Delhi sayanranu@iitd.ac.in
- Prof. Srikanta Bedathur, Professor, IIT Delhi srikanta@iitd.ac.in
- Prof. Anoop Krishnan, Associate Professor, IIT Delhi krishnan@iitd.ac.in
- Dr. Jean-Marc Andreoli, Principal Scientist, NAVER Labs, Europe jean-marc.andreoli@naverlabs.com
- Dr. Pannaga Shivaswamy, Principal Scientist, Adobe Research, pannaga.datta@gmail.com
- Dr. Narayanan Unny, Director, Big Data Labs, American Express, narayanan.unny@gmail.com
- Prof. Ashish Anand, Professor, IIT Guwahati anand.ashish@iitg.ernet.in
- Dr. Sofia Michel, Scientist, NAVER Labs, Europe, sofia.michel@naverlabs.com
- Prof. Sourav Medya, Asst. Professor University of Illinois at Chicago (UIC) medya@uic.edu