

RAJNI DABAS

Ph.D. Scholar

Department of Computer Science, University of Delhi

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Delhi, India



A research scholar with a solid foundation in Computer Science. My broad area of research interest is Theoretical Computer Science, specifically Approximation Algorithms. I am currently working on variants of Facility Location Problems. The goal is to learn and make new discoveries to the old traditional problems.

EDUCATION

Pursuing Ph.D. (Nov 2019– Present)

Department of Computer Science, University of Delhi.
Coursework aggregate: 87.67

Thesis Status: Currently in fourth year of Ph.D. with major research work completed. Likely to start writing the thesis by the end of year 2023.

M.Sc. Computer Science (2017-2019)

Department of Computer Science, University of Delhi.
Aggregate Percentage: 86.50

Master's Thesis: Facility Location Problem with penalties/outliers, 2019

B.Sc. (Hons) Computer Science (2014-2017)

Shyama Prasad Mukerjee College, University of Delhi.
Aggregate Percentage: 94.75

DU Innovation Project'16: Humsafar, A public pooling application for women safety.

PUBLICATIONS

- **Rajni Dabas** and Neelima Gupta. "Capacitated facility location with outliers/penalties". In Proceedings of 28th International Conference of Computing and Combinatorics, COCOON, October 22-24, 2022, volume 13595 of Lecture Notes in Computer Science, pages 549–560. Springer, 2022.
- **Rajni Dabas**, Naveen Garg, Neelima Gupta, and Dilpreet Kaur. "Locating Service and Charging Stations". In Proceedings of 20th International Workshop on Approximation and Online Algorithms, WAOA, September 8-9, 2022, volume 13538 of Lecture Notes in Computer Science, pages 1–19. Springer, 2022.
- Nikhil Ayyadevara, **Rajni Dabas**, Arindam Khan, and K. V. N. Sreenivas. "Near-optimal algorithms for stochastic online bin packing". In Proceedings of 49th International Colloquium on Automata, Languages, and Programming, ICALP, July 4-8, 2022, volume 229 of LIPIcs, pages 12:1–12:20. Schloss Dagstuhl - Leibniz-Zentrum für Informatik, 2022.
- Neelima Gupta, Sapna Grover, and **Rajni Dabas**. "Respecting lower bounds in uniform lower and upper bounded facility location problem". In Proceedings of 27th International Conference on Computing and Combinatorics, COCOON, October 24-26, 2021, volume 13025 of Lecture Notes in Computer Science, pages 463–475. Springer, 2021.

ACHIEVEMENTS

- 🏆 **ACM India Anveshan Setu Fellowship**
Received the fellowship in both 2021 and 2022
- 🏆 **UGC NET, Nov/Dec 2018**
All India Rank 1
- 🏆 **GATE**
Qualified in 2019
- 🏆 **Outstanding Student of the Year Award Winner**
Received the award from the batch 2014-2017
- 🏆 **Overall 8th rank in University and 1st rank in College**
College topper in B.Sc. (Hons) Computer Science (2014-2017)

EVENTS ATTENDED

- **ACM Winter School 2022.**
(Algorithms and Lower Bounds)
- **ACM Winter School 2021.**
(Algorithms on Big Data and Machine Learning)
- Grass Hopper Celebration India , **VGHCI, 2021.**
- Highlights of Algorithm **HALG, 2021.**
- The European Symposium on Algorithms **ESA 2021.**
- **Annual ACM event 2020.**
- Inter-Research-Institute Student Seminar, **IRISS 2020.**
- **Indo-German Spring School 2020.**

LANGUAGES

English

Hindi

EXPERIENCE

Teaching Assistant as Ph.D. Scholar

Nov 2019-Present

Design and Analysis of Algorithms, Data Structures

Lab Assistant as Ph.D. Scholar

Nov 2019-Present

Design and Analysis of Algorithms, Data Structures

PRESENTATIONS

- **Rajni Dabas** and Neelima Gupta. "Capacitated facility location with outliers/penalties". In Proceedings of 28th International Conference of Computing and Combinatorics, **COCOON 2022**, Shenzhen, China, October 22-24, 2022 (Virtually).
- **Rajni Dabas**, Naveen Garg, Neelima Gupta, and Dilpreet Kaur. "Locating Service and Charging Stations". In Proceedings of 20th International Workshop on Approximation and Online Algorithms, **WAOA 2022**, Potsdam, Germany, September 8-9, 2022 (Virtually).

PAPERS UNDER REVIEW

- **Rajni Dabas** and Neelima Gupta. "Uniform Capacitated Facility Location with Outliers/Penalties". Communicated to Journal of Discrete Optimization.
- **Rajni Dabas**, Naveen Garg and Neelima Gupta. "Capacitated Facility Location with Outliers and Uniform Facility Costs". Communicated to ESA 2023.
- **Rajni Dabas**, Neelima Gupta and Tanmay Inamdar." FPT Approximations for Capacitated/Fair Clustering with Outliers". Communicated to ESA 2023.
- **Rajni Dabas**, Neelima Gupta and Sapna Grover. "Clustering with Lower and Upper Bounds". Communicated to APPROX 2023.

PAPERS IN PROGRESS

- **Rajni Dabas**, Naveen Garg and Neelima Gupta. "Local Search for Capacitated Facility Location with Outliers". Under Preparation.
- **Rajni Dabas**, Neelima Gupta and Tanmay Inamdar." FPT Approximations Constrained Clustering with Outliers". Communicated to ESA 2023.
- **Rajni Dabas**, Gaurav Viramgami, Yash More and Saket Saurabh. "FPT for Cutting Shortest Paths: a vertex deletion problem". Under Preparation.

EXTRA CURRICULAR

- Secretary, Alumni Association
Department of Computer Science.
- Member of Organizing Committee
COMPUTE 2021.
- Sponsorship Head, Sankalan'19
Annual Technical Fest, DUCS.
- Performed at The Social House
India's top poetry and storytelling channel.
- Marketing and Sponsorship Head
Shyama Prasad Mukherji College, University of Delhi, 2016-17.
- Part of National Cadet Corp Organization, 2014-17.

HOBBIES

Teaching

Reading

Traveling

Painting

Photography

REFEREES

Prof. Neelima Gupta

(Senior Professor)

Department of Computer Science, DU.

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Prof. Naveen Garg

(Professor)

IITD

@ naveen@cse.iitd.ac.in

Prof. Naveen Kumar

(Professor)

Department of Computer Science, DU.

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