

Roopam Saxena

Personal Information

Gender: Male
Nationality: Indian

Education

Degree	Institute/University	Year
PhD, Computer Science and Engineering	IIT Hyderabad	2025*
M.Tech., Computer Science and Engineering	IIT Kharagpur	2012
B.E., Information Technology	RGPV, Bhopal	2010

*Thesis defended Nov 2024; degree formally awarded July 2025.
PhD Thesis: “Matching, Packing and Hitting: New Parameterized Complexity Results.”

Research Interests

Algorithms, Theoretical Computer Science.

Ph.D. Research Work

Studied four graph-theoretic problems in the realm of parameterized complexity, obtaining algorithmic and hardness results with respect to solution size, graph structural parameters, and their combinations:

- Matching Cut and d -Cut
- Perfectly Matched Sets
- Path Set Packing
- Terminal Monitoring Set

Post-PhD Experience

Postdoctoral Fellow — The Institute of Mathematical Sciences, Chennai *Apr 2025 – Mar 2026*

Pre-PhD Industry Experience

Member, IT / Middle Office — D. E. Shaw India Software Pvt. Ltd. *May 2014 – Sep 2014*
Software Development Engineer — Amazon Development Centre (India) *Dec 2012 – May 2014*
Member Technical Staff — NetApp India Pvt. Ltd. *Jul 2012 – Nov 2012*

List of Publications

Journal Publications:

- N.R. Aravind, Roopam Saxena. Parameterized Complexity of Path Set Packing. *Algorithmica* 87(12): 1864-1898 (2025). <https://doi.org/10.1007/s00453-025-01329-5> .
- N.R. Aravind, Roopam Saxena, Perfectly matched sets in graphs: Parameterized and exact computation, *Theoretical Computer Science*, Volume 954, 2023, 113797, ISSN 0304-3975, <https://doi.org/10.1016/j.tcs.2023.113797> .

Referred Conference proceedings:

- N.R. Aravind, Roopam Saxena. (2024). The Parameterized Complexity of Terminal Monitoring Set. In: Uehara, R., Yamanaka, K., Yen, HC. (eds) *WALCOM: Algorithms and Computation. WALCOM 2024. Lecture Notes in Computer Science*, vol 14549. Springer, Singapore. https://doi.org/10.1007/978-981-97-0566-5_7 .
- N.R. Aravind, Roopam Saxena. (2023). Parameterized Complexity of Path Set Packing. In: Lin, CC., Lin, B.M.T., Liotta, G. (eds) *WALCOM: Algorithms and Computation. WALCOM 2023. Lecture Notes in Computer Science*, vol 13973. Springer, Cham. https://doi.org/10.1007/978-3-031-27051-2_25 .
- N.R. Aravind, Roopam Saxena. (2021). An FPT Algorithm for Matching Cut and d-Cut. In: Flocchini, P., Moura, L. (eds) *Combinatorial Algorithms. IWOCA 2021. Lecture Notes in Computer Science()*, vol 12757. Springer, Cham. https://doi.org/10.1007/978-3-030-79987-8_37 .
- Maunendra Sankar Desarkar, Roopam Saxena, and Sudeshna Sarkar. (2012). Preference Relation Based Matrix Factorization for Recommender Systems. In: Masthoff, J., Mobasher, B., Desmarais, M.C., Nkambou, R. (eds) *User Modeling, Adaptation, and Personalization. UMAP 2012. Lecture Notes in Computer Science*, vol 7379. Springer, Berlin, Heidelberg. https://doi.org/10.1007/978-3-642-31454-4_6 .