

Yogesh Dahiya

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| CONTACT INFORMATION | Theoretical Computer Science Group The Institute of Mathematical Sciences Chennai, India | <i>phone:</i> +91 9886936068 <i>e-mail:</i> yogeshdahiya@imsc.res.in yogeshd2612@gmail.com |
| RESEARCH INTERESTS | Query and Communication Complexity, Sketching Algorithms, Learning Theory | |
| CURRENT POSITION | Senior Research Fellow The Institute of Mathematical Sciences, Chennai, India. | |
| EDUCATION | Institute of Mathematical Sciences , Chennai, India. 2018 - present <i>Ph.D. Theoretical Computer Science</i> <i>Advisor:</i> Prof. Meena Mahajan | |
| | Indian Institute of Technology Kanpur , UP, India. CGPA: 9.60/10 2016 - 2018 <i>MS(Research) Computer Science and Engineering</i> <i>Advisor:</i> Prof. Surender Baswana <i>Thesis Title:</i> <i>Sketching-based Preconditioning for Numerical Linear Algebra</i> | |
| | Indian Institute of Technology BHU , Varanasi, India. CGPA: 8.02/10 2009 - 2013 B.Tech, Electronics and Communication Engineering | |
| CONFERENCE PUBLICATIONS | Query Complexity of Search Problems. With Arkadev Chattopadhyay and Meena Mahajan. To appear in the 48th International Symposium on Mathematical Foundations of Computer Science (MFCS 2023). ECCC Report . | |
| | Linear threshold functions in decision lists, decision trees, and depth-2 circuits. With Vignesh K, Meena Mahajan and Karteek Sreenivasaiah. Information Processing Letters, Vol. 183 (106418) (IPL 24) . ECCC Report . | |
| | Randomized Versus Deterministic Decision Tree Size. With Arkadev Chattopadhyay, Nikhil Mande, Jaikumar Radhakrishnan and Swagato Sanyal. In Proceedings of the 55th ACM Symposium on Theory of Computing (STOC 23). ECCC Report . | |
| | On (simple) decision tree rank. With Meena Mahajan. In Proceedings of the 41st IARCS Annual Conference on Foundations of Software Technology and Theoretical Computer Science (FSTTCS 2021). ECCC Report . | |
| | Fixed-Parameter and Approximation Algorithms for PCA with Outliers. With Fedor Fomin, Fahad Panolan, Kirill Simonov. In Proceedings of the 38th International Conference on Machine Learning (ICML 2021). | |
| | An Empirical Evaluation of Sketching for Numerical Linear Algebra. With Dimitris Konomis, and David P. Woodruff. In Proceedings of 24th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD-18). | |
| | Discovering Response-Eliciting Factors in Social Question Answering. With Danish and Partha Talukdar. In Proceedings of the 10th International AAAI Conference on Web and Social Media (ICWSM-16). | |
| ACADEMIC EXPERIENCE | Tata Institute of Fundamental Research , Mumbai, India <i>Visitor</i> (Host: Arkadev Chattopadhyay) Worked on problems in Query Complexity. | 01/2023 - 04/2023 18/9/22 - 30/9/22 |
| | University of Bergen , Norway <i>Visitor</i> (Host: Saket Saurabh) Worked on designing approximation schemes for PCA in the presence of outliers. | 05/2019 - 07/2019 |

Indian Institute of Science, Bangalore, India

Research Assistant (Advisor: [Partha Talukdar](#))

2015 - 2016

Worked broadly on representation learning and question answering employing methods from compressed sensing, optimization and topic modelling literature.

Indian Institute of Science, Bangalore, India

Research Intern (Advisor: [Chandra R. Murthy](#))

05/2013 - 07/2013

Worked on designing a highly configurable modular test bed for the Cognitive Radio network and analyse the effect of secondary non-licensed users on licensed primary users, in terms of throughput and bit error rate.

INDUSTRY
EXPERIENCE

Flipkart Internet Pvt. Ltd. , Bangalore, India

Software Development Engineer

2013 - 2014

Contributed to building the core of the payment platform which allowed users to pay for their transactions, save cards and use them across websites. Also contributed to developing Aesop an open-source data change propagation system which replicated primary databases to secondary databases online (SQL or NoSQL) while maintaining timeline consistency and transactional boundaries.

VizExpert India Pvt. Ltd., Bangalore, India

Member of Technical Staff, Research Intern

05/2012- 07/2012

Worked on building a pre-processing toolkit for geospatial data using gpgpu methodology. The project required understanding and programming on GPUs.

TALKS

Talk on **Time and Space Complexity of Query Algorithms** at **IMSc 60** event celebrating the 60th foundation year of the Institute of Mathematical Science, Jan 2023.

Talk on **On (Simple) Decision Tree Rank** at **IMSc TCS Seminar**, Chennai, India, Nov 2021.

Talk on **Sketching for Numerical Linear Algebra** at the summer school on **Algorithmic Tractability via Sparsifiers**, Leh, India, Oct 2019.

TEACHING

Teaching Assistant for Randomized Algorithms and Algorithms for Big Data at IMSc, Fall 2019

My responsibilities included sharing lecture duties, holding office hours and creating assignments.

Teaching Assistant for Randomized Algorithms at IIT Kanpur, Spring 2018

My responsibilities included holding office hours and grading assignments. The course was taught by Prof. Surender Baswana

Teaching Assistant for Algorithms 2 at IIT Kanpur, Fall 2017

My responsibilities included holding office hours, and creating and grading assignments. The course was taught by Prof. Surender Baswana

ACHIEVEMENTS
& ACTIVITIES

- Ranked in top 0.8% among 400,000 students in the prestigious **IIT-JEE** Examination 2009 and was ranked among the top 0.6% of the students in All India Engineering Entrance Examination
- Ranked 2 in Joint Entrance Screening Test(**JEST**)-2018 in theoretical computer science.
- Received **Academic Excellence Award** for academic performance for year 2017.
- Finished in top 20 in the **Inter IIT Programming Contest** 2013 and in top 30 in **Codesprint 4**, international programming contest, organized by Hacker Rank.
- Participated in the **AI Science Challenge** hosted at Kaggle, aimed at creating a system for answering 8th-grade multiple-choice science questions. Stood 10th among 170 teams.