

# Yogesh Dahiya

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CONTACT INFORMATION	Theoretical Computer Science Group The Institute of Mathematical Sciences Chennai, India	phone: +91 9886936068 e-mail: 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	<b>Institute of Mathematical Sciences</b> , Chennai, India. <i>Ph.D. Theoretical Computer Science</i> <i>Advisor:</i> <a href="#">Prof. Meena Mahajan</a>	<b>2018 - present</b>
	<b>Indian Institute of Technology Kanpur</b> , UP, India. <i>MS(Research) Computer Science and Engineering</i> <i>Advisor:</i> <a href="#">Prof. Surender Baswana</a> <i>Thesis Title:</i> <i>Sketching-based Preconditioning for Numerical Linear Algebra</i>	<b>CGPA: 9.60/10</b> <b>2016 - 2018</b>
	<b>Indian Institute of Technology BHU</b> , Varanasi, India. <b>B.Tech, Electronics and Communication Engineering</b>	<b>CGPA: 8.02/10</b> <b>2009 - 2013</b>
CONFERENCE PUBLICATIONS	<b>Randomized Versus Deterministic Decision Tree Size.</b> With Arkadev Chattopadhyay, Nikhil Mande, Jaikumar Radhakrishnan and Swagato Sanyal. <a href="#">ECCC Report</a> .  <b>On (simple) decision tree rank.</b> With Meena Mahajan. In Proceedings of the 41st IARCS Annual Conference on Foundations of Software Technology and Theoretical Computer Science ( <b>FSTTCS 2021</b> ).  <b>"Fixed-Parameter and Approximation Algorithms for PCA with Outliers"</b> . With Fedor Fomin, Fahad Panolan, Kirill Simonov. In Proceedings of the 38th International Conference on Machine Learning ( <b>ICML 2021</b> ).  <b>"An Empirical Evaluation of Sketching for Numerical Linear Algebra"</b> . With Dimitris Konomis, and David P. Woodruff. In Proceedings of 24th ACM SIGKDD Conference on Knowledge Discovery and Data Mining ( <b>KDD-18</b> ).  <b>"Discovering Response-Eliciting Factors in Social Question Answering"</b> . With Danish and Partha Talukdar. In Proceedings of the 10th International AAAI Conference on Web and Social Media ( <b>ICWSM-16</b> ).	
ACADEMIC EXPERIENCE	<b>Tata Institute of Fundamental Research</b> , Mumbai, India <i>Visitor</i> (Host: <a href="#">Arkadev Chattopadhyay</a> ) Worked on problems in Query Complexity.	18/9/22 - 30/9/22
	<b>University of Bergen</b> , Norway <i>Visitor</i> (Host: <a href="#">Saket Saurabh</a> ) Designed parameterized algorithms for Low-rank Matrix Completion and Editing problem. Also worked on designing approximation schemes for PCA in the presence of outliers.	05/2019 - 07/2019
	<b>Indian Institute of Science</b> , Bangalore, India <i>Research Assistant</i> (Advisor: <a href="#">Partha Talukdar</a> ) Worked broadly on representation learning and question answering employing methods from compressed sensing, optimization and topic modelling literature.	2015 - 2016

**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. The course was taught by Saket Saurabh

**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, 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 answering 8th grade multiple choice science questions. Stood 10th among 170 teams.