Nikhil Vyas

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EDUCATION

- **MIT** **2017-**
  Ph.D. in Electrical Engineering and Computer Science
  Advisor: Ryan Williams
- **IIT Bombay** **2013-2017**
  B.Tech. with Honors in Computer Science

RESEARCH PUBLICATIONS

CONFERENCES

- Mitali Bafna, Nikhil Vyas
  Optimal Fine-grained Hardness of Approximation of Linear Equations
  International Colloquium on Automata, Languages, and Programming (ICALP) 2021
- Ronald Fagin, Jonathan Lenchner, Kenneth W. Regan, Nikhil Vyas
  Multi-Structural Games and Number of Quantifiers
  Symposium on Logic in Computer Science (LICS), 2021
- Ce Jin, Nikhil Vyas, Ryan Williams
  Fast Low-Space Algorithms for Subset Sum
  Symposium on Discrete Algorithms (SODA), 2021
- Srinivasan Raghuraman, Siddhartha Jayanti, Nikhil Vyas
  Efficient Constructions for Almost-everywhere Secure Computation
  EUROCRYPT 2020
- S. Akshay, Nikhil Balaji, Aniket Murhekar, Rohith Varma, Nikhil Vyas
  Near-optimal complexity bounds for fragments of the Skolem Problem.
  Symposium on Theoretical Aspects of Computer Science (STACS), 2020
- Nikhil Vyas, Ryan Williams
  Lower Bounds Against Sparse Symmetric Functions of ACC Circuits: Expanding the Reach of #SAT Algorithms.
  Symposium on Theoretical Aspects of Computer Science (STACS), 2020
- Andrea Lincoln, Nikhil Vyas
  Algorithms and Lower Bounds for Cycles and Walks: Small Space and Sparse Graphs.
  Innovations in Theoretical Computer Science (ITCS), 2020
- Mitali Bafna, Nikhil Vyas
  Imperfect Gaps in Gap-ETH and PCPs
  Computational Complexity Conference (CCC), 2019
- Nikhil Vyas, Ryan Williams
  On Super Strong ETH [Best Paper Award]
  International Conference on Theory and Applications of Satisfiability Testing (SAT), 2019
- Mina Dalirrooyfard, Virginia Vassilevska Williams, Nikhil Vyas, Nicole Wein, Yuancheng Yu, Yinzhan Xu
  Approximation Algorithms for Min-Distance Problems
  International Colloquium on Automata, Languages and Programming (ICALP), 2019

- Mina Dalirrooyfard, Virginia Vassilevska Williams, Nikhil Vyas, Nicole Wein
  Tight Estimation of Bichromatic Farthest Pair in Graphs and Related Problems
  International Colloquium on Automata, Languages and Programming (ICALP), 2019
- Mitali Bafna, Jack Murtagh, Nikhil Vyas
  Thwarting Adversarial Examples: An L_0-Robust Sparse Fourier Transform
  Neural Information Processing Systems (NeurIPS), 2018
- S. Akshay, Blaise Genest, Nikhil Vyas
  Distribution-based objectives for Markov Decision Processes
  Symposium on Logic in Computer Science (LICS), 2018
- S. Akshay, Nikhil Balaji, Nikhil Vyas
  Complexity of restricted variants of Skolem problem
  International Symposium on Mathematical Foundations of Computer Science (MFCS), 2017
- Nikhil Bansal, Shashwat Garg, Jesper Nederlof, Nikhil Vyas
  Faster Space-Efficient Algorithms for Subset Sum and k-Sum
  Symposium on the Theory of Computing (STOC), 2017
- S. Akshay, Blaise Genest, Bruno Karelovic, Nikhil Vyas
  On Regularity of unary Probabilistic Automata
  Symposium on Theoretical Aspects of Computer Science (STACS), 2016

JOURNALS

- Nikhil Bansal, Shashwat Garg, Jesper Nederlof, Nikhil Vyas
  Faster Space-Efficient Algorithms for Subset Sum, k-Sum, and Related Problems
  SIAM Journal on Computing
- Nikhil Vyas, Ryan Williams
  On Super Strong ETH
  Journal of Artificial Intelligence Research

MANUSCRIPTS

- Ronald Fagin, Jonathan Lenchner, Nikhil Vyas, Ryan Williams
  Multi-Structural Games and Number of Quantifiers
  Under Submission

AWARDS AND HONORS

- MIT Akamai Presidential Graduate Fellowship
- Awarded Undergraduate Research Award at IIT Bombay
- Research Excellence award for Bachelor's Thesis at IIT Bombay

TEACHING

- Teaching assistant for 6.042: Mathematics for Computer Science, Spring 2021, MIT
- Teaching assistant for 6.890: Learning Augmented Algorithms, Spring 2019, MIT
- Teaching assistant for CS 721: Introduction to Computational Complexity, Fall 2016, IIT Bombay
- Teaching assistant for CS 207: Discrete Structures, Fall 2015, IIT Bombay