

# MRINALKANTI GHOSH

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My research interests include: Computational Complexity Theory, Approximation Algorithms, Hardness of Approximation, Information Theory and Randomness.

## TIMELINE

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|---|-----------------------|
| <b>PhD Candidate in Computer Science</b>  | <i>2013 - Present</i> |
| Advisor: <i>Prof. Madhur Tulsiani at Toyota Technological Institute at Chicago</i>                |                       |
| <b>Research Assistant</b>   | <i>2012 - 2013</i>    |
| Supervisor: <i>Prof. Manindra Agrawal at Indian Institute of Technology</i>                       |                       |
| <b>M.Tech in Computer Science and Engineering</b>   | <i>2010 - 2012</i>    |
| Advisor: <i>Prof. Satyadev Nandakumar at Indian Institute of Technology Kanpur</i>                |                       |
| Thesis: <i>Predictive Complexity and Generalized Entropy Rate of Stationary Ergodic Processes</i> |                       |
| <b>B.Tech in Computer Science and Engineering</b>   | <i>2006 - 2010</i>    |
| From collage <i>Institute of Engineering and Management, WBUT</i>                                 |                       |
| B.Tech Project: <i>Visual Secret-sharing Scheme for Multi-secret General Access Structure</i>     |                       |

## PUBLICATIONS

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*Vijay Bhattiprolu, Mrinalkanti Ghosh, Venkatesan Guruswami, Euiwoong Lee, and Madhur Tulsiani.* **Approximating Operator Norms via Generalized Krivine Rounding**, Symposium on Discrete Algorithms 2019 (merged with the paper below), 2019 SODA, arXiv

*Vijay Bhattiprolu, Mrinalkanti Ghosh, Venkatesan Guruswami, Euiwoong Lee, and Madhur Tulsiani.* **Inapproximability of Matrix  $p \rightarrow q$  Norms**, Symposium on Discrete Algorithms 2019 (merged with the paper above), 2019, SODA, arXiv

*Vijay Bhattiprolu, Mrinalkanti Ghosh, Venkatesan Guruswami, Euiwoong Lee, and Madhur Tulsiani.* **Weak Decoupling, Polynomial Folds, and Approximate Optimization over the Sphere**, 58th Annual IEEE Symposium on Foundations of Computer Science, 2017, FOCS, arXiv

*Mrinalkanti Ghosh, Madhur Tulsiani.* **From Weak to Strong LP Gaps for all CSPs**, 32nd Computational Complexity Conference, 2017, *Invited to Special Issue of CCC*. CCC, arXiv, TOC

*Mrinalkanti Ghosh, Satyadev Nandakumar.* **Predictive Complexity and Generalized Entropy Rate of Stationary Ergodic Processes**, 23rd Conference on Algorithmic Learning Theory, 2012, ALT, arXiv

*Mrinalkanti Ghosh, Satyadev Nandakumar, Atanu Pal.* **Ornstein Isomorphism and Algorithmic Randomness**, 9th International Conference on Computability and Randomness, 2014, CCR, arXiv

## TEACHING ASSISTANT POSITIONS

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**Algorithmic Information Theory** - Spring Semester 2012, taught by Prof. Satyadev Nandakumar.

**Algorithms** - Winter Quarter 2016 at TTIC, taught by Prof. Yury Makarychev.

**Information and Coding Theory** - Autumn Quarter 2017 at TTIC, taught by Prof. Madhur Tulsiani.

## MISCELLANEOUS

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Received *Academic Excellence in the Master of Technology Programme* from IIT Kanpur on March, 2012.

Attended *Swedish Summer School in Computer Science 2014* at Stockholm in July 2014.

Attended *Summer School on Hyperbolic Polynomials, Sums of Squares and Optimization* at Georgia Tech in June, 2018.

Gave a Seminar Talk at Purdue University on *Approximability of Matrix  $p$  to  $q$  Norms: Generalized Krivine Rounding and Hypercontractive Hardness* on February, 2019.