
SAGNIK MUKHOPADHYAY

Male · DOB: 5 Sep, 1987
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Career Summary

EDUCATION

Ph.D. in Computer Science 2013 - 2017
[School of Computer and Systems Sciences, Tata Institute of Fundamental Research, Mumbai.](#)
Thesis advised by [Prof. Arkadev Chattopadhyay](#) on “Communication Complexity Amplification by Function Composition”.

Masters in Computer Science 2010 - 2013
[School of Computer and System Sciences, Tata Institute of Fundamental Research, Mumbai.](#)
Thesis advised by [Prof. Prahladh Harsha](#) on “A Survey on Uniform Hardness Amplification in NP”.

Bachelor of Technology in Computer Science and Engineering 2006 - 2010
[Institute of Engineering & Management, Kolkata.](#)

EMPLOYMENT

Post-doctoral researcher Jan 2019 - Now
[TCS Division, EECS, KTH Royal Institute of Technology](#), Sweden.
Hosted by [Prof. Danupon Nanongkai](#),

Post-doctoral researcher Sep 2018 - Dec 2018
[IÚUK, Charles University](#), Prague.
Hosted by [Prof. Michal Koucký](#),

Post-doctoral researcher Sep 2017 - Aug 2018
[TCS Division, EECS, KTH Royal Institute of Technology](#), Sweden.
Hosted by [Prof. Jakob Nordström](#).

FELLOWSHIPS & GRANTS

[Research project grant within natural and engineering sciences](#) 2020 -
[Swedish Research Council](#)
co-wrote with [Danupon Nanongkai](#).

[Stimulus of Scientific Employment, Individual Support 2017](#) granted but not used
[Portuguese Science Funding Committee \(FCT\)](#)

[Tata Consultancy Services Ph.D. Fellowship](#) 2013 - 2017

VISITS & TALKS

[Shonan Meeting: Distributed Graph Algorithms](#) 2019
[Shonan, Japan](#)
Host: [Guy Even](#) & [Gregory Schwartzman](#)

[IRIF, Université Paris Diderot](#) 2019
[Paris](#)
Host: [Sophie Laplante](#). Visited for 2 weeks.

ACM Symposium on Theory of Computing (STOC) Los Angeles Talk: Simulation beats richness: new data-structure lower bounds.	2018
TCS Division EECS, KTH Royal Institute of Technology Sweden Talk: Simulation theorem & fork-lift.	2016
IÚUK, Charles University Prague Host: Michal Koucký. Visited for a month.	2016
Workshop on Algorithms in Communication Complexity, Property Testing & Combinatorics Moscow Talk: Tribes is hard in message passing model.	2016
Summer School of Lower Bounds Prague Host: Michal Koucký.	2015
Indo-UK Workshop on Computational Complexity Chennai Talk: Tribes is hard in message passing model.	2015
Conference on Foundations of Software Technology & Theoretical Computer Science (FSTTCS) Bangalore Talk: Towards Better Separation between Deterministic and Randomized Query Complexity.	2015
Symposium on Theoretical Aspects of Computer Science (STACS) Munich Talk: Tribes is hard in message passing model.	2015

Research

[Link to DBLP Profile](#)

PUBLICATIONS

— CONFERENCES —

- [Weighted min-Cut: Sequential, cut-query and streaming algorithms.](#) with Danupon Nanongkai. *Symposium on Theory of Computing (STOC)*, 2020.
- [Lifting theorems for Equality.](#) with Bruno Loff. *Symposium on Theoretical Aspects of Computer Science (STACS)*, 2019.
- [Simulation beats richness: new data-structure lower bounds..](#) with Arkadev Chattopadhyay, Michal Koucký; and Bruno Loff. *Symposium on Theory of Computing (STOC)*, 2018.
- [Lower bounds for elimination via weak regularity.](#) with Arkadev Chattopadhyay, Pavel Dvorák, Michal Koucký and Bruno Loff. *Symposium on Theoretical Aspects of Computer Science (STACS)*, 2017.
- [Towards better separation between deterministic and randomized query complexity.](#) with Swagato Sanyal. *Conference on Foundations of Software Technology & Theoretical Computer Science (FSTTCS)*, 2015.
- [Tribes is hard in message-passing model.](#) with Arkadev Chattopadhyay. *Symposium on Theoretical Aspects of Computer Science (STACS)*, 2015.

— JOURNALS —

[Simulation theorems via pseudo-random properties.](#) with Arkadev Chattopadhyay, Michal Koucký and Bruno Loff. *Computational Complexity (CC)*, 2019.

[Separation between deterministic and randomized query complexity.](#) with Swagato Sanyal and Jaikumar Radhakrishnan. *SIAM Journal on Computing (SICOMP)*, 2018.

— THESIS —

[Communication complexity amplification by function composition..](#) *Ph.D. Thesis under supervision of Prof. Arkadev Chattopadhyay*, **TIFR, Mumbai**.

[A survey on uniform hardness amplification in NP.](#) *MS. Project Report under supervision of Prof. Prahladh Harsha*, **TIFR, Mumbai**.

REVIEWING, WORKSHOPS, CHALLENGES, RESEARCH EVENTS ORGANIZED

[FSTTCS 2014](#), [FOCS 2015](#), [STACS 2016](#), [CCC 2016](#), [CALDAM 2016](#), [STOC 2018](#), [SIAM Journal of Computing](#), [Journal of Computer & System Science](#).

Teaching

COURSES

[Advanced algorithm \(DD2440 @ KTH\)](#) September 2019
co-taught with Danupon Nanongkai. 1.5 lectures, each of 90-minutes duration.

[Communication complexity \(DD3502 @ KTH\)](#) April, 2018
15 lectures, each of 90-minutes duration.

[Computational complexity \(DD2445 @ KTH\)](#) September, 2017
co-taught with Jakob Nordström. 23 lectures, each of 90-minutes duration, out of which 5 were delivered by me.

[Communication complexity \(@ TIFR\)](#) September, 2016
co-taught with Arkadev Chattopadhyay. 27 lectures, each of 90-minutes duration, out of which 2 were delivered by me.

SUPERVISION

Co-supervisor: Mohit Daga September 2019 - Now

REFERENCES

[Arkadev CHATTOPADHYAY](#)

School of Technology & Computer Science
Tata Institute of Fundamental Research, Mumbai
arkadev.c@tifr.res.in

[Michal KOUCKÝ](#)

Faculty of Mathematics & Physics
Charles University, Prague
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[Danupon NANONGKAI](#)

School of Electrical Engineering & Computer Science
KTH Royal Institute of Technology, Stockholm
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[Jaikumar RADHAKRISHNAN](#)

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Tata Institute of Fundamental Research, Mumbai
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