

Varun Ramanathan

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CURRENT APPOINTMENT

Postdoctoral Researcher, BARC, University of Copenhagen
Host: Srikanth Srinivasan.

Mid-Feb. 2026–present

EDUCATION

PhD in Computer Science, Tata Institute of Fundamental Research, Mumbai

2020–2026

Advisor: Ramprasad Saptharishi.

Thesis: *Deterministic Algorithms for Factors of Constant-Depth Arithmetic Circuits.*

B.Tech., Indraprastha Institute of Information Technology, Delhi

2016–2020

Computer Science and Applied Mathematics. GPA: 9.08/10.

PUBLICATIONS

Constant-Depth Circuits for Polynomial GCD over Any Characteristic

2026

With Somnath Bhattacharjee, Mrinal Kumar, Shanthanu S. Rai, Ramprasad Saptharishi and Shubhangi Saraf.

CCC 2026. [Proceedings](#) | [arXiv](#) | [ECCC](#)

Closure under Factorization from a Result of Furstenberg

2026

With Somnath Bhattacharjee, Mrinal Kumar, Shanthanu S. Rai, Ramprasad Saptharishi and Shubhangi Saraf.

STOC 2026. [Proceedings](#) | [arXiv](#) | [ECCC](#)

Towards Deterministic Algorithms for Constant-Depth Factors of Constant-Depth Circuits

2026

With Mrinal Kumar, Ramprasad Saptharishi and Ben Lee Volk.

ACM Transactions on Computation Theory, 18(1), 2026. [Journal](#) | [arXiv](#) | [ECCC](#)

Deterministic factorization of constant-depth algebraic circuits in subexponential time

2025

With Somnath Bhattacharjee, Mrinal Kumar, Ramprasad Saptharishi and Shubhangi Saraf.

FOCS 2025. [Proceedings](#) | [arXiv](#) | [ECCC](#)

New Bounds for the Ideal Proof System in Positive Characteristic

2025

With Amik Raj Behera, Nutan Limaye and Srikanth Srinivasan.

ICALP 2025. [Proceedings](#) | [arXiv](#) | [ECCC](#)

Deterministic Algorithms for Low Degree Factors of Constant Depth Circuits

2024

With Mrinal Kumar and Ramprasad Saptharishi.

SODA 2024. [Proceedings](#) | [arXiv](#) | [ECCC](#)

RESEARCH VISITS AND EXPERIENCE

Visitor, BARC, University of Copenhagen

Sept.–Nov. 2024

Hosts: Srikanth Srinivasan and Nutan Limaye (ITU Copenhagen).

Summer Research Intern, EPFL, Switzerland

May–July 2019

Studied FPGA circuit partitioning and packing with Stefan Nikolic and Paolo Ienne, and online edge orientation with recourse with Ola Svensson.

Summer Research Intern, Chennai Mathematical Institute

May–July 2018

With Prajakta Nimbhorkar and Kavita Sutar: worked on UAV coverage path planning with Skylark Drones and envy-free matchings in the Hospital Residents problem with lower quotas.

TEACHING AND OUTREACH

Teaching Assistant, **Computability and Complexity**, University of Copenhagen

Feb.–April 2026

Instructors: Jakob Nordström and Amir Yehudayoff. Discussed queries in tutorials, and graded assignments.

Facilitator, **Math Circle India**

April–June 2022

Contributed problems to three sessions and facilitated two sessions, helping students develop solutions.

Teaching Assistant, **Probability**, IIIT-Delhi

Jan.–May 2020

Instructor: Sanjit Kaul. Led problem-solving tutorials for approximately 30 first-year students and graded examinations.

Teacher, IIIT Delhi Summer Camp

May–June 2017

Taught problem solving, logical reasoning and music (drumming and beatboxing) to students in grades 8–10 from underprivileged backgrounds.

ACADEMIC SERVICE

Conference Volunteer

2026

WACT 2026; WAVE 2026, University of Copenhagen.

Coordinator, STCS Student Seminar, TIFR

Aug. 2023 to 2025

Founding Member and Coordinator, Évariste – the Math Club, IIIT-Delhi

Jan. 2018–April 2019

Organised mathematical competitions, the Math+TCS Olympiad and Summer Camp, and Theory Talks.

Student Mentor, Student Mentorship Program, IIIT-Delhi

July 2018

Mentored seven first-year students during their transition to college.

SELECTED TALKS AND CONFERENCE PARTICIPATION

Kaleidoscope — five-minute talk

2026

Workshop on Algebraic Complexity Theory (WACT)

2026

Computational Complexity Conference (CCC) — talk

2026

Barbados Complexity Workshop

2026

SELECTED HONOURS

Dean's List for Academic Achievement, IIIT-Delhi

2017–2018

Academic years 2016–17 and 2017–18.

CCRT Scholarship

2012

For playing the mridangam.

INTERESTS

Teaching; music (mridangam, drums, beatboxing); running; bouldering; reading; cooking.