

# MAYA SARAN, PH.D.

maya@mayasaran.net · (+91) 9999 228522 · [in](#) · [www.mayasaran.net](http://www.mayasaran.net)

SUMMARY: I am a mathematician and educator who enables mathematical success for students regardless of their prior levels of preparation and comfort. To this task I bring 23 years of pedagogical and administrative experience.

## WORK EXPERIENCE

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**Head of Mathematics Department** 2014–2017

**Assistant Professor of Mathematics** 2014–2022

[Ashoka University](#) · Haryana, India

**Highlights:** Created and ran the mathematics program for a newly founded university. Excelled at bringing students into mathematics and supporting them. Contributed to institution building in multiple roles.

- **Program design and implementation**

- Created the university’s founding vision of undergraduate mathematics education, based on international norms and tailored to our student body
- Developed major and minor course sequences
- Incorporated inquiry-based methods in gateway courses
- Created general education course in mathematical thinking, one of the university’s most popular and impactful courses

- **Pedagogy and student support**

- Advised and mentored all math students
- Created multiple peer-tutoring programs
- Hired, trained and mentored teaching assistants and peer tutors
- Conducted pedagogy workshops for faculty and teaching assistants
- Worked with multiple offices to create support systems for blind students, students with dyscalculia and other special needs

- **Institution building**

- Contributed to the shared founder-faculty conception of education and culture
- Presented institutional vision to donors
- Conducted outreach programs for high-school students and parents across India
- Served on Mathematics and Computer Science Hiring Committees (2016–19) and Vice Chancellor Search Committee (2016–17)
- Served on multiple university bodies, including Ashoka University Academic Council and Foundation Course Steering Committee (various years)

- **Organized inception in India of PROMYS**, Boston-based summer program for talented high-school students, in 2019–20 (postponed due to pandemic)

**Faculty for Mathematical Thinking course** various years 2013–20

[Young India Fellowship](#), [Ashoka University](#) · Haryana, India

**Consultant for curriculum design and teacher training** 2014–15

[Raghubir Singh Modern School](#) · New Delhi, India

**Research Affiliate** 2003

[Massachusetts Institute of Technology](#) · Cambridge, MA

## EDUCATION

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<b>PhD, Mathematics</b>	University of Illinois at Urbana-Champaign	2010
	<i>Specialization in Mathematical Logic, for which UIUC is a top-ranked program</i>	
	<i>Thesis advisor: Professor Slawomir Solecki</i>	
	<i>Thesis title: Some results on <math>G_\delta</math> ideals of compact sets</i>	
<b>Certificate in Business Administration</b>	University of Illinois at Urbana-Champaign	2008
	<i>Certificate course for non-business PhD's offered by the College of Commerce and Business Administration</i>	
<b>MA, Mathematics</b>	University of Illinois at Urbana-Champaign	2001
<b>MA, Mathematics</b>	St. Stephens College, University of Delhi	1999
<b>BA (Hons.), Mathematics</b>	St. Stephens College, University of Delhi	1996

## PUBLICATIONS

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- Saran, Maya and Srinivasan, Tulsi. *A Mathematical Orientation for College*. Book in preparation. In pilot use in July 2023 at Azim Premji University, India, to transition students into calculus and proof-based mathematics.
- Saran, Maya. " $G_\delta$  sets in  $\sigma$ -ideals generated by compact sets." *Journal of Symbolic Logic*, vol. 84, no. 2, 2019, pp 781-797
- Saran, Maya. "Some results on  $G_\delta$  ideals of compact sets." 2010. University of Illinois, PhD thesis.
- Saran, Maya. "A note on  $G_\delta$  ideals of compact sets." *Comment. Math. Univ. Carolin.*, vol. 50, no. 4, 2009, pp 569-573

## SELECTED INVITED TALKS

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- **Hearts and Minds: The Structure of Support** July 2022  
Practice of Teaching Undergraduate Mathematics conference, Azim Premji University, Bangalore, India
- **The Pandemic and Mathematics Education** September 2021  
Third MTA online conference of the Mathematics Teachers' Association, India
- **Gender Equity in the Sciences** March 2021  
Her-Story of Science, online conference hosted by BiasWatchIndia and Biologically Speaking
- **Questions Math Can't Answer** May 2020  
"Beyond The Classroom," Ashoka University's online public seminar series
- **The Art of Mathematics: Beyond Usefulness** November 2019  
25th National Annual Conference of Sahodaya School Complexes, New Delhi, India
- **Sometimes you cannot keep it simple** April 2019  
Azim Premji University, Bangalore, India
- **The lens of complexity** March 2019  
Indraprastha Institute of Information Technology, Delhi (IIIT-D), New Delhi, India
- **$G_\delta$  sets in  $\sigma$ -ideals generated by compact sets** June 2018  
"Ideals and exceptional sets in Polish spaces" conference, Bernoulli Center (CIB), EPFL, Lausanne, Switzerland

- **A Role for Mathematics in (Business) Education** April 2016  
Liberal Arts and Business Conference, Jindal School of Liberal Arts and Humanities, New Delhi, India
- **Thinking like a Mathematician** February 2016  
The Academic Conclave, St. Stephen's College, Delhi, India
- **Research on inquiry based learning in undergraduate real analysis** December 2015  
invited workshop participant, American Institute of Mathematics, San Jose, CA, USA
- **What's the point? Some answers to this question** December 2014  
Second Conference on Creative Mathematical Sciences Communication, Institute of Mathematical Sciences, Chennai, India
- **Sigma-ideals of compact sets: a conjecture** October 2014  
Annual Workshop on Logic and its Applications, Calcutta Logic Circle, Calcutta, India
- **A result on sigma-ideals of compact sets** May 2009  
Mid Atlantic Mathematical Logic Seminar, Harvard University, Cambridge, MA, USA
- **Tukey reducibility among topological directed orders** April 2006  
MIT Logic Seminar, Cambridge, MA, USA
- **A descriptive-set-theoretic result about ideals of compact sets** December 2003  
MIT Logic Seminar, Cambridge, MA, USA

#### WORKSHOPS CONDUCTED

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- **Putting math in the hands of students** November 2022  
Workshop for teachers at Saral Satya village school, Barota, Haryana, India
- **What is Mathematics, really?** March 2017  
Workshop sponsored by J&K State Science, Technology and Innovation Council, at Govt. College for Women, Jammu, India
- **Mathematics Education: A Mathematician's Perspective** Nov 2013 – Jan 2014  
Series of workshops for teachers at Raghbir Singh Junior Modern School, New Delhi
- **Teaching Mathematics Forward** May 2013  
Workshop for teachers of grades 7 to 12, The Doon School, Dehradun, India
- **RealMath workshops** 2012–14  
Multiple workshops giving adults, high-school and middle-school students a genuine experience of mathematics, New Delhi and Gurgaon, India

#### OTHER INFORMATION

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- Speaker of English (native), Hindi (proficient) and German (basic)
- Student of Classical Vocal Hindustani (North Indian) music, Patiala gharana