



# Pritam Bhattacharya

*"I was born not knowing and have had only a little time to change that here and there." - Richard Feynman*

## Personal Information

Name Pritam Bhattacharya  
Date of Birth December 31, 1987  
Nationality Indian  
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## Education

pursuing **Ph.D. in Computer Science**, *Indian Institute of Technology, Kharagpur.*  
Supervisors: Prof. Sudebkumar Prasant Pal & Prof. Subir Kumar Ghosh  
2014 **M.S. in Computer Science**, *Tata Institute of Fundamental Research, Mumbai.*  
Supervisor: Dr. Manoj Gopalkrishnan, *DGPA - 8.2/10.0*  
2010 **B.Tech. in Computer Science & Engineering**, *Institute of Engineering and Management, West Bengal University of Technology, DGPA - 8.52/10.0.*  
2006 **Higher Secondary School Certificate**, *South Point High School, West Bengal Council of Higher Secondary Education, Aggregate Marks: 75.0%.*

## Graduate Courses

Core Courses Introduction to Probability, Mathematical Structures, Formal Logic, Automata and Computability, Design and Analysis of Algorithms, Computational Complexity  
Advanced Courses Selected Topics in Algorithms, Computational Geometry, Computational Biology, Approximation Algorithms, Modelling Cognitive Functions using Neuroids, Advanced Graph Theory, Economic & Financial Network Analytics, Algorithmic Graph Theory

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## Research Interests

Keywords Computational Geometry, Approximation Algorithms, Visibility, Polygon Guarding, Art Gallery Problem, Maximum Hidden Vertex Set, Weak Conflict-Free Guarding

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## Publications

- [1] Carlos Alegria, Pritam Bhattacharya, and Subir Kumar Ghosh. A  $1/4$ -approximation algorithm for the maximum hidden vertex set problem in simple polygons. *EuroCG 2019*.
- [2] Pritam Bhattacharya. Switching in Boolean Circuits and Modelling Cognition through Neuroids. Master's thesis, School of Technology and Computer Science (STCS), Tata Institute of Fundamental Research (TIFR), Mumbai, India, 2014.
- [3] Pritam Bhattacharya. *Switching in Boolean Circuits and Modelling Cognition through Neuroids*. Lambert Academic Publishing, 2016. ISBN: 978-3-659-96855-6.
- [4] Pritam Bhattacharya, Subir Kumar Ghosh, and Sudebkumar Prasant Pal. Constant approximation algorithms for guarding simple polygons using vertex guards. *CoRR*, abs/1712.05492.
- [5] Pritam Bhattacharya, Subir Kumar Ghosh, and Bodhayan Roy. Vertex Guarding in Weak Visibility Polygons. In *CALDAM 2015*, volume 8959 of *LNCS*, pages 45–57. Springer, 2015.
- [6] Pritam Bhattacharya, Subir Kumar Ghosh, and Bodhayan Roy. Approximability of Guarding Weak Visibility Polygons. *Discrete Applied Mathematics*, 228:109 – 129, 2017.

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## Work Experience

- May 2012 – **Summer Intern**, *IBM Research - India*, New Delhi.  
July 2012 “Discovering Patterns in Connectivity and Functional Labeling Data on the Macaque Brain”  
Nov 2014 – **Faculty**, *ProGATE Coaching*, Mumbai.  
Jan 2015 Problem-solving based classroom teaching oriented towards cracking GATE (CS)

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## Skills

Computer LaTeX, Python, C++, R, Java, Ipe, Xfig, MATLAB, GEC, CPLEX, Gurobi  
Soft Skills Leadership abilities, interpersonal communication, event management skills  
Languages English, Bengali, Hindi

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## Honours and Achievements

- 1) Secured AIR 35 in GATE (CS) 2010 with a GATE score of 963/1000
- 2) Recipient of the prestigious TCS Research Scholarship since July 2015
- 3) Won 3rd prize at the 8th IDRBT Doctoral Colloquium on 7th December, 2019
- 4) Won ‘Springer award for best student paper’ at CALDAM on 10th February, 2015
- 5) Served as President of the TIFR Students’ Society from August 2012 to March 2014
- 6) Subreviewer for papers submitted to SODA, CALDAM, IWOCA, IJCGA and DAM
- 7) Published a book with Lambert Academic Publishing in November 2016

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- 8) Invited to deliver a contributed talk titled "Approximation and Inapproximability of Guarding Polygons" at the CG Week 2018 workshop on Fine-Grained Complexity of Hard Geometric Problems held at ELTE, Budapest on 11th June, 2018
- 9) Invited for an oral presentation of our paper at the 10th Inter-Research-Institute Student Seminar in Computer Science (IRISS 2016) held at Technopark, Trivandrum
- 10) Delivered a Chai & Why public lecture titled "Teasing your Brain to Think Critically - The Art and Science of Solving Logical Puzzles" at Prithvi Theatre, Mumbai on 1st December, 2013 [<https://www.youtube.com/watch?v=5WrSVTp1MNQ>]
- 11) Qualified for Asia-Amritapuri regionals of ACM International Collegiate Programming Contest in November 2009 as a member of the programming team Silent Assassins
- 12) Invited to lecture and conduct workshops / interactive sessions with students by IEM Kolkata, OPJU Raigarh, UEM Jaipur, and St. Xavier's College, Mumbai

## Conferences and Workshops Attended

- January 2011 MSR School of Approximability @ IISc, Bangalore  
 August 2011 Workshop on Pseudorandomness @ CMI, Chennai  
 December 2011 FSTTCS 2011 @ IIT-Bombay  
 December 2011 Workshop on Recent Advances in Data Structures @ IMSc, Chennai  
 August 2012 3rd Annual Infosys Mysore Park Workshop in Theoretical Computer Science  
 December 2012 FSTTCS 2012 @ IIIT-Hyderabad  
 December 2012 MSR Winter School on Theoretical Computer Science @ IIIT-Hyderabad  
 February 2013 WALCOM 2013 @ IIT-Kharagpur  
 August 2013 4th Annual Infosys Mysore Park Workshop in Theoretical Computer Science  
 February 2015 CALDAM 2015 @ IIT-Kanpur  
 March 2015 Indo-German Workshop on Algorithms @ ISI-Kolkata  
 February 2016 CALDAM 2016 @ Maria Rani Centre, Trivandrum  
 February 2016 Indo-German Spring School on Algorithms for Big Data @ IIT-Madras  
 February 2017 CALDAM 2017 @ BITS-Pilani (KK Birla Goa Campus)  
 February 2018 CALDAM 2018 @ IIT-Guwahati  
 April 2018 IRP-DCCG @ Universitat Autònoma de Barcelona  
 June 2018 SoCG 2018 @ ELTE, Budapest  
 December 2018 Eighth IDRBT Doctoral Colloquium @ IDRBT, Hyderabad  
 February 2019 Recent Trends in Algorithms Workshop @ NISER, Bhubaneswar

## Extra-Curricular Activities and Interests

- 1) Vocalist and percussionist in the TIFR music group called 'The Conduction Band'
- 2) Served on the Science Popularisation and Public Outreach Committee, TIFR
- 3) Actively interested in music, photography, chess, badminton, and table tennis

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