# Prakash Chakraborty

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## Personal details

Born: 1991.
Place of Birth: Kolkata, India.
Nationality: Indian.

## Research interests

Probability Theory, Applied Stochastic Models, Heat Dynamics, Mathematical Finance, Stochastic Partial Differential Equations and applications, Rough Path Theory and its applications in Stochastic Calculus and Analysis of Data Streams.

## Education

Aug 2020: Ph.D, Purdue University.
Title: *Contributions to Rough Path Theory and Stochastic PDEs*
supervised by Prof. Kiseop Lee and Prof. Samy Tindel.

Jun 2015: M.Stat, Indian Statistical Institute, Kolkata, India.

Jun 2013: B.Stat, Indian Statistical Institute, Kolkata, India.

## Teaching Experience

2020: *Instructor* for Math 472, Dept. of Mathematics, University of Michigan.

2017-2018: *Teaching Assistant (exam-writer)* for Stat 301, Dept. of Statistics, Purdue University.

2016-2017: *Teaching Assistant (recitation)* for Stat 301, Dept. of Statistics, Purdue University.

## Outreach and engagement activities

2020: Reviewer for *AMS Mathematical Reviews*.

2019: Reviewer for journal *Operations Research Letters*.

2017-2019: Graduate student member at *Grant Review and Allocation Committee* of Purdue Graduate Student Government.

2017-2018: Purdue Graduate Student Government *Senator from the Department of Statistics*.

2017-2018: Graduate student member to the *University Grade Appeals Committee* appointed by the Committee on Student Affairs of the University Senate.

## Articles

### Publications and Preprints

2019: A Many-Server Functional Strong Law For A Non-Stationary Loss Model, **with Harsha Honnappa**, arXiv:1912.13067Submitted.

2019: Bond Prices with Insufficient Information, **(with Kiseop Lee)**, Submitted, Manuscript available on request.

2020: Relativistic Stable Processes in Quasi-ballistic Heat conduction in thin film Semiconductors, (**with Ali Shakouri, Samy Tindel and Bjorn Vermeersch**), Phys. Rev. E 101, 042110, Physical Review E.

2019: Strong Embeddings for Transitory Queueing Model, **(with Harsha Honnappa)**, arXiv:1906.06740, Submitted.

2020: Quenched asymptotics for a 1-d stochastic heat equation driven by a rough spatial noise, **(with Xia Chen, Bo Gao and Samy Tindel)**, spa.2020.06.007, Stochastic Processes and their Applications.

2019: Tiered Spectrum Measurement Markets for joint Licensed and Unlicensed Secondary Access, **(with Arnob Ghosh and Vaneet Aggarwal)**, 10.1109/TNSE.2019.2921782, Accepted at IEEE Transactions on Network Science and Engineering.

2019: Rough Differential Equations with Power Type Nonlinearities, **(with Samy Tindel)**, SPA,V129,Issue5, Stochastic Processes and their Applications.

### In Preparation

2019: Pricing Method For Spread, Basket, and Asian Options Under The Presence Of Jumps In Price Process, **with Kiseop Lee**.

2019: Path Confinement For The Continuous Polymer Measure, **with Samy Tindel**.

2019: Functional Limits For Markov Modulated Stochastic Fluid Flow Models, **with Harsha Honnappa**.

## Undergraduate publication

2015: Population variation in total genetic risk of Hirschsprung disease from common RET, SEMA3 and NRG1 susceptibility polymorphisms, **(with Ashish Kapoor, Qian Jiang, Sumantra Chatterjee, Maria X. Sosa, Courtney Berrios, Aravinda Chakravarti)**, Human Molecular Genetics, Volume 24 Issue 10.

## Presentations

Dec 2019: Problems of roughness, geometry and random fluctuations, Haussdorff Research Institute for Mathematics, Bonn, Germany.
*Path Confinement for the Continuous Polymer Measure.*

Oct 2019: INFORMS Annual Meeting, Seattle.
*Functional Limits for Stochastic Fluid Flow Models.*

Apr 2019: AMS Sectional Meeting, University of Connecticut Hartford.
*Quenched Asymptotics for A 1-D Stochastic Heat Equation driven by a Rough Spatial Noise.*

Nov 2018: Purdue Probability Seminar.
*Quenched Asymptotics for a 1-D Stochastic Heat Equation driven by a Rough Spatial Noise.*

Jun 2018: 40th Conference on Stochastic Processes and their Applications, Gothenburg.
*Rough Differential Equations with Power Type Nonlinearities.*

Oct 2017: Stochastics/Probability Seminar, University of Tennessee Knoxville.
*Rough Differential Equations with Power Type Nonlinearities.*

## Grants, honors and awards

2020: Bob and Marjorie McLean Scholarship, Purdue Department of Statistics.

2020: I. W. Burr Award, Purdue Department of Statistics.

2020: William J. Studden Publication Award, Purdue Department of Statistics.

2019: Purdue Research Foundation Fellowship.

2019: American Mathematical Society Graduate Student Travel Grant.

2018: Institute of Mathematical Statistics Hannan Graduate Student Travel Award.

2017: Purdue Graduate Student Government Travel Award.

2016: Golden Key International Honor Society membership.

2015: Ross Fellowship, Purdue University Graduate School.

2011: Contingency grant for academic excellence, Indian Statistical Institute.

2010: Senior JBNSTS Scholarship recipient, West Bengal, India.

2010: INSPIRE Scholarship, DST, Govt. of India.

## References


1. **Kiseop Lee**, Associate Professor, Department of Statistics, Purdue University.
   Phone: 765-496-3698. Email: kiseop@purdue.edu

2. **Samy Tindel**, Professor, Department of Mathematics, Purdue University.
   Phone: 765-496-2648. Email: stindel@purdue.edu

3. **Harsha Honnappa**, Assistant Professor, School of Industrial Engineering, Purdue University.
   Phone: 765 496-0403. Email: honnappa@purdue.edu

4. **Laura Cayon**, Continuing Lecturer, Department of Statistics, Purdue University.
   Phone: 765-494-4279. Email: cayon@purdue.edu