Prakash Chakraborty

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Born: 1991.
Nationality: Indian.

Current position

2020-: Byrne Research Assistant Professor, Dept. of Mathematics, University of Michigan.

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.

Research interests

Applied Probability, Machine Learning in Mathematical Finance, Stochastic Control and applications in Mean Field Games, Rough Path Theory and applications in Reinforcement Learning.

Teaching Experience

2021: *Instructor* for Math 472, **Numerical Methods with Financial Applications** (Masters in Quant Finance section), Dept. of Mathematics, University of Michigan.

2021: *Instructor* for Math 526, **Discrete State Stochastic Processes**, Dept. of Mathematics, University of Michigan.

2020: *Instructor* for Math 472, **Numerical Methods with Financial Applications**, 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

2021: Treasurer and Board Member at *University of Michigan Postdoctoral Association*.

2020: Reviewer for *Operations Research Letters*, *Stochastic Models* and *AMS Mathematical Reviews*.

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 *Purdue University Grade Appeals Committee* appointed by the Committee on Student Affairs of the University Senate.

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.

2015: Ross Fellowship, Purdue University Graduate School.

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

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

Articles

PUBLICATIONS AND PREPRINTS

2021:   Mean Field Control And Finite Agent Approximation For Regime-Switching Jump Diffusions, **(with Erhan Bayraktar)**, Submitted, arXiv:2109.09134.

2021:   Optimal Dividends Under Model Uncertainty, **(with Asaf Cohen and Virginia Young)**, Submitted, arXiv:2109.09137.

2021:   Bond Prices Under Information Asymmetry and a Short Rate With Instantaneous Feedback, **(with Kiseop Lee)**, Accepted with minor revision at Methodology and Computing in Applied Probability, Manuscript available on request.

2019:   A Many-Server Functional Strong Law For A Non-Stationary Loss Model, **with Harsha Honnappa**, ORL 49, no. 3 (2021): 338-344, Operations Research Letters.

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.

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:   Strong Embeddings for Transitory Queueing Model, **(with Harsha Honnappa)**, arXiv:1906.06740, Accepted at Mathematics of Operations Research.

2019:   Tiered Spectrum Measurement Markets for joint Licensed and Unlicensed Secondary Access, **(with Arnob Ghosh and Vaneet Aggarwal)**, 10.1109/TNSE.2019.2921782, 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.

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)**, HMG Volume 24 Issue 10, Human Molecular Genetics.

Presentations

Oct 2020:   INFORMS Annual Meeting 2020, Remote.
Functional Limits for a Many-server Non-stationary Loss Model.

Oct 2020:   Financial/Actuarial Mathematics Seminar, University of Michigan.
Quenched Asymptotics for A 1-D Stochastic Heat Equation driven by a Rough Spatial Noise.

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 2019, 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.