

Purba Das

BYRNE RESEARCH ASSISTANT PROFESSOR, UNIVERSITY OF MICHIGAN

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Languages: Bengali (Native), English, Hindi.

Professional activity

Sep 2023-Present **Lecturer in financial mathematics**, King's College London

Aug 2022-June 2023 **Byrne Research Assistant Professor**, University of Michigan, Ann arbor.

Academic history

- 2018-2022 **Dphil in Mathematics**, University of Oxford
PhD thesis, Roughness properties of paths and signals, **Advisor: Prof. Rama Cont.**
- 2016-2018 **Masters**, Applications of Mathematics, Chennai Mathematical Institute (CMI), India.
Masters thesis, On completely mixed stochastic games, **Advisor: Prof. T Parthasarathy.**
- 2013-2016 **Undergraduate**, Honours in Mathematics and Computer Science. Chennai Mathematical Institute (CMI), India.

Publications and preprints

Applications of Schauder-type basis: Estimating Hölder exponent, Mimicking fractional Brownian

ERHAN BAYRAKTAR AND PURBA DAS AND DONGHAN KIM

Working paper 2023

Available on request

Level crossings of fractional Brownian motions

PURBA DAS AND RAFAŁ ŁOCHOWSKI AND TOYOMU MATSUDA AND NICOLAS PERKOWSKI

Working paper 2023

Available on request

Pathwise Dubins-Schwarz theorem

PURBA DAS

Working paper 2022+

Available on request

Estimating the roughness of a signal

RAMA CONT AND PURBA DAS

Working paper 2022

Available on request

Rough volatility: fact or artefact?

RAMA CONT AND PURBA DAS

2022

SSRN

Functions with quadratic variation along refining partitions

RAMA CONT AND PURBA DAS

2021

Journal of Mathematical Analysis and Applications

Pathwise quadratic variation and quadratic roughness

RAMA CONT AND PURBA DAS

2020

Bernoulli 29(1): 496-522 (February 2023). DOI: 10.3150/22-BEJ1466

On Completely Mixed Stochastic Games

PURBA DAS, T. PARTHASARATHY, G. RAVINDRAN.

2018

Operations Research Forum volume 3, Article number: 57 (2022)

Understanding Sea Ice Melting via Functional Data Analysis

PURBA DAS, ANANYA LAHIRI, SOURISH DAS

2018

Current Science, Volume 115, Issue 5, Pages 920–929.

Talks and poster presentations

Feb 2023	Invited talk , IFAM, University of Liverpool	Online
Sep 2022	Contributed talk , Financial mathematics seminar, University of Michigan	Ann Arbor, USA
June 2022	Contributed talk , Oxford-ETH Workshop on Mathematical & Computational Finance	Zurich
June 2022	Contributed talk , 11th world congress of the bachelier finance society	Online
May, 2022	Contributed talk , 15th Berlin-Oxford Young Researchers Meeting on Applied Stochastic Analysis	Berlin, Germany
May, 2022	Invited talk , Dynamic systems / stochastics seminar, Free University, Berlin	Berlin, Germany
April, 2022	Invited talk , IRTG Graduate Student Seminar, Technische Universität Berlin	Berlin, Germany
Apr, 2022	Invited talk , Mathematical finance seminar, Imperial college London	London, UK
Jan, 2022	Invited talk , Mathematical finance seminar, University of Michigan	Michigan, USA
Oct, 2021	Contributed talk , Mathematical and computational finance internal seminar	Oxford, UK
Oct, 2021	Contributed talk , Junior female researchers in probability	Berlin, Germany
Aug, 2021	Contributed talk , 6th Berlin Workshop for Young Researchers on Mathematical Finance	Online
July, 2021	Contributed talk , Bernoulli-IMS 10th World Congress in Probability and Statistics	Online
July, 2021	Contributed talk , Young Researcher's Session, Statistical Methods in Finance 2021	Online
Jan 2020	Contributed talk , Bachelier Colloquiums, Mathematical Finance and stochastic calculus	Metabief, France
July 2019	Poster presentation , LMS Research School on Probability	Bath, UK
March 2019	Contributed Talk , Oxford-ETH Workshop on Mathematical Finance.	Oxford, UK
April 2018	Invited Talk , Internal Seminar at Indian statistical Institute.	Chennai, India
April 2018	Research seminar talk , Chennai Mathematical Institute (CIM), India.	Chennai, India
March 2018	Invited talk , Research seminar, Indian Institute of Technology, India.	Chennai, India
Dec, 2017	Poster presentation , International conference on statistics.	Hydrabad, India
Sep 2016	Contributed talk , Workshop on Linear Complementarity and Generalisations.	ISI Chennai, India

Teaching

Winter 2023	Primary instructor: MATH 526- Discrete stochastic process , Department of mathematics, University of Michigan.
Fall 2022	Primary instructor: MATH 423- Mathematics of Finance , Department of mathematics, University of Michigan.
HT 2022	Teaching Assistance: Integration , Queens college, University of Oxford.
MT 2021	Tutor: Probability, measure and martingale , Mathematical Institute, University of Oxford.
TT 2021	Tutor: Continuous Martingales and Stochastic Calculus , Mansfield College, University of Oxford.
HT 2021	Tutor: Continuous martingale and Stochastic calculus , Mathematical Institute, University of Oxford.
HT 2021	Tutor: Optimisation , Mathematical Institute, University of Oxford.
HT 2021	Tutor: Stochastic calculus , Mathematical Institute, University of Oxford.
MT 2020	Tutor: Probability- Measure and Martingales , Mathematical Institute, University of Oxford.
HT 2020	Teaching Assistance: Optimisation , Mathematical Institute, University of Oxford.
HT 2020	Teaching Assistance: Continuous martingale and stochastic calculus , Mathematical Institute, University of Oxford.
MT 2019	Teaching Assistance: Stochastic Differential Equations , Mathematical Institute, University of Oxford.
MT 2019	Teaching Assistance: Probability, Measure and Martingales , Mathematical Institute, University of Oxford.
HT 2019	Teaching Assistance: Continuous Optimisations , Mathematical Institute, University of Oxford.
2018	Teaching Assistance: Game Theory , Chennai Mathematical Institute.
2017	Teaching Assistance: Regression and Classification , Chennai Mathematical Institute, India.
2016	Teaching Assistance: Optimisation techniques , Chennai Mathematical Institute, India.
2016	Teaching Assistance: Financial Risk Management , Chennai Mathematical Institute, India.

Reading and research projects

May-July 2016	On Completely mixed Stochastic Games , Summer internship at Chennai Mathematical Institute.	<i>T. Parthasarathy</i>
May-July 2016	Functional Data analysis , Summer internship at Chennai Mathematical Institute.	<i>Sourish Das</i>
May-July 2015	Bimatrix Games , Summer internship at Chennai Mathematical Institute.	<i>T. Parthasarathy</i>
Dec 2014	Characteristic function and moment generating function , Winter internship at Indian statistical Institute.	<i>Prof. Krishanu Maulik</i>
June-July 2014	Introduction on Markov chain and Poisson process , Summer internship at Chennai Mathematical Institute.	<i>Nandini Karnan</i>
May-June 2014	Graph algorithms , Summer internship at Indian statistical Institute.	<i>Krishnendu Mukopadhyaya</i>
Dec 2013	Introduction of graph theory and graph algorithms , Winter internship at Indian statistical Institute.	<i>Krishnendu Mukopadhyaya</i>

Scholarships

2018-2022	Mathematical Institute Studentship at University of Oxford , A full waiver of the tuition fees and monthly fellowship towards living cost
2016-2018	Postgraduate studentship at Chennai Mathematical Institute, India , A full waiver of the tuition fees and monthly fellowship towards living cost
2013-2016	Undergraduate studentship at Chennai Mathematical Institute, India , A full waiver of the tuition fees and monthly fellowship towards living cost

Awards and other activities

July 2022	Research visit at Warsaw school of economics, Hosted by Rafał Łochowski
Apr-May 2022	Research visit at Freie Universität Berlin, Hosted by Nicholas Perkowski
Jun 2021	Best student paper at Statistical Methods in Finance 2021.
2020-2021	Organising committee for Mathematrix
2020-2021	Organising committee for Women's coffee
March 2018	First Prize for the best poster at 'Tata Consultancy Services (TCS) Poster Competition'.
Dec 2017	Honourable mention for the poster presentation at International conference on statistic.
2016	Organising committee for Annual Fest in Chennai Mathematical Institute

Computer skills:

Programming Languages: C, C++, Java, Python, R.

Packages: LaTeX, Matlab, Scilab.