Muhammad Usama Nadeem

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CURRENT EMPLOYMENT

Postdoctoral Researcher   University of Edinburgh (Professor Tadahiro Oh's Group)

EDUCATION

University of Edinburgh, Edinburgh, UK   Enrolled: Sept 20 — Completed: June 24
Ph.D. Mathematics
Supervisor: Professor Yvain Bruned
Thesis: On discrete and quasilinear variants
of the generalised KPZ equation

London School of Economics, London, UK   Enrolled: Sept 18 — Completed: July 19
M.Sc. Financial Mathematics
Grade Awarded: Distinction
£5,000 Grant Awarded

London School of Economics, London, UK   Enrolled: Sept 15 — Completed: July 18
B.Sc. Actuarial Science
Grade Awarded: First Class Honours
Top 1% of the class

PUBLICATIONS

1. Y. Bruned, M. Gerencsér, U. Nadeem, "Quasi-generalised KPZ equation", 57 pages, arXiv:2401.13620.

2. Y. Bruned, U. Nadeem, "Convergence of space-discretised gKPZ via regularity structures." Ann. Appl. Probab. 34 (2) 2488 - 2538, April 2024. doi:10.1214/23-AAP2029.

3. Y. Bruned, U. Nadeem, "Diagram-free approach for convergence of trees based model in regularity structures." J. Math. Soc. Japan Advance Publication 1 - 31, March, 2024. doi:10.2969/jmsj/91129112.

TALKS AND READING GROUPS

03/23 - 05/23   Contributed various talks to reading group on *Rough Paths*.

03/23 - 05/23   Contributed various talks to reading group on *Signatures and Machine Learning*.

09/22 - 11/22   Contributed various talks to reading group on *Malliavin Calculus*.

RESEARCH STAYS, SUMMER SCHOOLS, & WORKSHOPS

11/23   *Mini-Workshop: Combinatorial and Algebraic Structures in Rough Analysis and Related Fields*, Oberwolfach Research Insitutute for Mathematics.

10/23   Short stay at Institut Élie Cartan de Lorraine in Nancy, France. Invited by Yvain Bruned.

05/23   *PDEs and Randomness* summer school at MPI MiS in Leipzig, Germany. Attended online due to visa problems.

03/22   Short stay at the Max Planck Institute for Mathematics in the Sciences (MPI MiS) in Leipzig, Germany. Invited by Felix Otto.

CONFERENCES

06/23   11th International Conference on Stochastic Analysis and its Applications (ICSAA), ICMS, UK.

09/22   Geometry, Sochastics, and Dynamics, Imperial College London, UK.
06/22   Harmonic Analysis, Stochastics and PDEs, ICMS, UK.

11/21   Higher Structures Emerging from Renormalisation, ESI, Austria.

SKILLS

Programming   C++, Python, R, MATLAB, and LaTeX.

IT Proficiency   Excel, Word, Powerpoint, and Access.

Languages   English (Fluent), Punjabi (Native), Urdu (Native), Hindi (Fluent), Persian/Dari (Beginner).

WORK EXPERIENCE

08/22   *Maching Learning Consultant* at Legal Utopia. Lead research on Deep Learning techniques for evaluating legal claims.

04/22   *Technical Consultant* at Smart Data Foundry. Led research into ML solutions to problems of Web Scouring, generating executive summaries, and populating predetermined lists.

12/19 - 05/20   *Actuarial Analyst* at Nauman Associates. Led research into ML methods for Credit Risk Modelling in the context of IFRS-9.

TEACHING EXPERIENCE

23-24   Tutoring for *Introduction to Linear Algebra* (UG)
Tutoring for *Introduction to Data Science* (UG)
Tutoring for *Stochastic Modelling (OR)* (PG)

22-23   Tutoring for *Introduction to Linear Algebra* (UG)
Tutoring for *Introduction to Data Science* (UG)
Tutoring for *Stochastic Modelling (OR)* (PG)
Tutoring for *Discrete Time Finance* (PG)
Tutoring for *Financial Mathematics* (UG)
Tutoring for *Calculus and its Application* (UG)
Tutoring for *Proofs and Problem Solving* (UG)

21-22   Tutoring for *Probability, Measure, and Finance* (UG)
Tutoring for *Stochastic Modelling* (UG)
Tutoring for *Discrete Time Finance* (PG)
Tutoring for *Linear Analysis* (UG)
Tutoring for *Calculus and its Application* (UG)
Tutoring for *Metric Spaces* (UG)

20-21   Tutoring for *Financial Mathematics* (UG)
Tutoring for *Risk Neutral Asset Valuation* (PG).