

## Curriculum Vitae

Jacob Butt

### Education

University of Sussex Brighton

PHD MATHEMATICS 2020 - present

- Advisors: Dr. Nicos Georgiou and Prof. Enrico Scalas.
- The project studied a space-time discontinuous TASEP model, where a law of large numbers was proved; as well as a time-fractional queue model using Mittag-Leffler inter-event times, where three differing versions of the model were studied and results obtained for each.
- Date of viva examination: 18th December 2023.

University of Warwick Coventry

MMATHSPHYS (EQF LEVEL 7) - 1ST CLASS HONOURS 2014 - 2018

- Thesis Advisor: Associate prof. Ben McMillan; The edge of chaos in Tokamak plasmas
- Studies included topics on Brownian motion and statistical mechanics, magneto-hydrodynamics and fluid mechanics, functional analysis and partial differential equations. More information including educational transcripts are available upon request.

### Publications

Butt, J., Georgiou, N. & Scalas, E. Queuing models with Mittag-Leffler inter-event times. *Fract Calc Appl Anal* 26, 1465–1503

(2023). <https://doi.org/10.1007/s13540-023-00161-4>

### Research skills and experience

My main research interest and experience is on the field of interacting particle systems and other statistical me-

chanical models. I have specifically worked on hydrodynamic limits of TASEP and last passage models during my

PhD with a paper on this subject being edited with the aim of publishing during the next year. I also have experi-

ence with queue models and techniques from fractional calculus, and have participated in courses and reading

groups on some related topics such Monte Carlo simulation techniques, Lie groups/algebras, and large deviation

principles.

I have had the opportunity to present many of the results from my work in academic seminars at the University

of Sussex, as well as at some student conferences. I was also a participant in the Fractional differential Equations

(FDE2) 2022 Programme hosted by the Isaac Newton Institute, Cambridge, where I was able to give an informal

presentation as well.

#### Teaching Experience

During my time at the university of Sussex I have acted as a teaching assistant to a number of undergraduate

courses, responsibilities centered around small group teaching and marking problem sets. The courses taught

include:

Algebra, 2nd year course

Analysis, 1st year course

Calculus of several variables, 2nd year course

Advanced numerical analysis, 3rd year course

Partial differential equations, 3rd year course

dichiaro di essere consapevole che il presente *curriculum vitae* sarà pubblicato sul sito istituzionale dell'Ateneo, nella Sezione "Amministrazione trasparente", nelle modalità e per la durata prevista dal d.lgs. n. 33/2013, art. 15.