Curriculum Vitae

David Geldbach

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PROFESSIONAL EXPERIENCE

University of Oxford **Oxford, UK**

DPhil/PhD student in Statistics Oct 2021 - Current

- Analysis of stochastic interacting particle systems
    - Understanding strategies of exceptional particles
    - Theoretical models for spatial genetics, chemical reactions, statistical physics
    - Simulation of stochastic processes
- Awarded runner up for G-Research prize in quantitative research worth 3300£

Lady Margaret Hall **Oxford, UK**

Stipendiary Lecturer at an Oxford college Sep 2023 - Current

- Teaching courses on Statistics, Probability, Integration, Linear Algebra
- Admissions interviews for undergraduate maths students

EDUCATION

Ludwig-Maximilians-Universität **Munich, Germany**

M.Sc. & B.Sc. in Mathematics Oct 2016 – July 2021

- Master Thesis: *Ergodicity of the Dynamical XY-Model*
- Bachelor Thesis: *The Scaling Limit of the Erdös-Rényi Graph*
- Exchange terms at NUS Singapore and ÉNS de Lyon

SIDE PROJECTS

- Competed in a python coding challenge and won 3500$
    - Programming strategies in a 1v1 tower defence game using techniques from deep learning and reinforcement learning
- Supported climate researchers with artificial data, understanding the effect of mountain ranges on the speed of climate change (search algorithms implemented in python)
- Prediction of the effect of small molecules in electroplating (deep learning, graph representations)

PUBLICATIONS

(In mathematical articles the order of authors is always alphabetical.)

- David Geldbach, *The limiting measure of hyperbolic branching Brownian motion,* (in preparation).
- Julien Berestycki (Oxford), David Geldbach, Michel Pain (CNRS, Toulouse), *Polynomial slowdown in space-inhomogeneous branching Brownian motion*, preprint (2025), 53pp, arXiv:2506.10623.
- Julien Berestycki (Oxford), Nina Gantert (TU Munich), David Geldbach, Quan Shi (Chinese Academy of Sciences), *Biased branching random walks on Bienaymé-Galton-Watson trees*, preprint (2025), 29pp, arXiv:2502.07363.
- David Geldbach, *Continuum asymptotics for tree growth models,* preprint (2023), 39pp, arXiv:2309.04336.

ACADEMIC ACTIVITIES

- Organised a conference: *Oxford Probability Workshop: Random Discrete Structures*
    - March 2025, £10.5k funding awarded, 60 participants
- Organised weekly Junior Probability Seminar June 2022 - June 2024
- Delivered talks on conferences in the UK, France, Netherlands, Canada and Germany.