Benjamin A. Robinson

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Academic Employment

2024–2030 **Postdoc Assistant**, *Department of Statistics, University of Klagenfurt, Austria*.

2020–2024 **Postdoc**, *Faculty of Mathematics, University of Vienna, Austria*.
Working in the Mathematical Finance and Stochastic Analysis group of Mathias Beiglböck and Walter Schachermayer. Funded by the Austrian Science Fund (FWF) [10.55776/Y782], [10.55776/P35519], [10.55776/P34743].

2020 **Research Associate**, *Institute for Mathematical Innovation, University of Bath, UK*.
Conducted research on mathematical and statistical aspects of interdisciplinary and industrial projects, collaborating with academics from varied fields and external partners.

2020 **Research Assistant**, *Department of Psychology, University of Bath, UK*.
Provided data analysis, modelling and programming expertise to a collaborative project with NHS RUH Bath on sustainable transport — EPSRC *Reimagining Recruitment* grant EP/S012168/1.

Education

2020 **PhD in Statistical Applied Mathematics**, *University of Bath, UK*.
Stochastic Control Problems for Multidimensional Martingales, supervised by Alexander Cox. Funded by EPSRC Centre for Doctoral Training in Statistical Applied Mathematics at Bath (SAMBa) EP/L015684/1. Member of leading probability research group Prob-L@b.

2016 **MRes in Statistical Applied Mathematics**, *Distinction, University of Bath, UK*.
Graduate-level courses: *Applied SDEs, Rough Paths, Optimal Stochastic Control and BSDEs, Lévy Processes, Applied Statistical Inference, Bayesian and Large Scale Methods, Scientific Computing, Numerical Solution of Elliptic PDEs, Inverse Problems and Data Assimilation, Sobolev Spaces, Advanced PDEs*.
Masters Dissertation: *Constrained Optimal Stopping Problems*, supervised by Alexander Cox.

2015 **MSci in Mathematics**, *First Class, University of Bristol, UK*.
Masters Dissertation: *Ergodicity of Stochastic Processes and the Markov Chain Central Limit Theorem*, supervised by Márton Balázs.

Publications

[1] Gudmund Pammer, Benjamin A. Robinson, and Walter Schachermayer. A regularized Kellerer theorem in arbitrary dimension. *Annals of Applied Probability*. To appear.

[2] Alexander M. G. Cox and Benjamin A. Robinson. SDEs with no strong solution arising from a problem of stochastic control. *Electronic Journal of Probability*, 28:1–24, 2023.

[3] Alexander M.G. Cox and Benjamin A. Robinson. Optimal control of martingales in a radially symmetric environment. *Stochastic Processes and their Applications*, 159:149–198, 2023.

[4] Benjamin A. Robinson and Michaela Szölgyenyi. Bicausal optimal transport for SDEs with irregular coefficients. *arXiv:2403.09941*, 2024.

[5] Julio Backhoff-Veraguas, Sigrid Källblad, and Benjamin A. Robinson. Adapted Wasserstein distance between the laws of SDEs. *arXiv:2209.03243*, 2022.

Supervision

2024 **MSc Mathematics**, *University of Vienna*, Ralf Stoiber *(with Julio Backhoff-Veraguas)*, The Skorokhod Embedding Problem and its Financial Applications.

Teaching

2024 Summer	**Stochastic Processes**, *Master, Department of Statistics, University of Klagenfurt*. Lecturer — Delivering lectures and exercise classes, preparing course material.
	Methodology 2: Statistics, *Bachelor, Deparment of Statistics, University of Klagenfurt*. Teaching Assistant (TA) — Delivering exercise classes and preparing exercise sheets.
2023 Winter	**Stochastics for Engineers**, *Bachelor, Department of Statistics, University of Klagenfurt*. Teaching Assistant — Delivering online exercise classes and preparing exercise sheets.
2019 Winter	**Mathematics and Statistics**, *Mathematics Resource Centre (MASH), University of Bath*. Senior Peer Tutor — Leading a team of tutors, running drop-in sessions for first year mathematics undergraduates, providing mathematical and statistical support at drop-in sessions for all disciplines.
2016 Winter	**Financial Derivatives**, *Master, School of Management, University of Bath*, TA.
2015–2019	**Analysis 1, Probability 1, Analysis 2**, *Bachelor, Department of Mathematical Sciences, University of Bath*, TA.
2015 Summer	**Statistics 1**, *Bachelor, School of Mathematics, University of Bristol*, TA.
	Linear Algebra 1B, *Bachelor, School of Mathematics, University of Bristol*, TA.
2014 Winter	**Probability 1**, *Bachelor, School of Mathematics, University of Bristol*, TA.
	Linear Algebra 1A, *Bachelor, School of Mathematics, University of Bristol*, TA.

Grants and Awards

2024	**Scientific Research Network of The Research Foundation Flanders Travel Grant**. Grant to attend 21st *Winter School on Mathematical Finance*
2024	**Centre international de rencontres mathémathiques (CIRM) Travel Grant**. Grant to attend research school *Stochastic and Deterministic Analysis for Irregular Models*
2023	**Scientific Research Network of The Research Foundation Flanders Travel Grant**. Grant to attend 20th *Winter School on Mathematical Finance*
2019	**University of Leeds Travel Grant**. Grant to attend 2nd *Leeds Conference on Stochastic Control and Games under Ambiguity*
2018	**Hausdorff Centre for Mathematics Travel Grant**. Grant to attend *Hausdorff School: Optimal Transport Meets Economic Theory*
2017–2018	**Grants for SIAM UKIE National Student Chapter Conference**, 6,350 GBP. Successfully applied for grants to organise this national conference from SIAM; the IMA; the University of Bath Doctoral College, Institute for Mathematical Innovation, Dept. Math. Sci.
2017	**SIAM Student Chapter Certificate of Recognition**, *University of Bath*.
2015	**Howell Peregrine Prize for Best Undergraduate Project**, *University of Bristol*.

Academic Service

2022–present	**Referee**, *Annals of Applied Probability, Mathematics of Operations Research, Stochastic Analysis and Applications*.
Jun 2018	**Organiser of SIAM UKIE National Student Chapter Conference**, *University of Bath*.
2017–2018	**Organiser of Postgraduate Seminar Series**, *Dept. Math. Sciences, University of Bath*.
Jun 2017	**Organiser of SAMBa Summer Conference**, *University of Bath*.
Mar 2017	**Organiser of Bath SIAM-IMA Student Conference**, *University of Bath*.
2016–2018	**Treasurer of University of Bath SIAM-IMA Student Chapter**, *University of Bath*.

Programming and Languages

Python, R, MATLAB, Fortran, C, HTML, CSS, SQL.

English (Native), German (C1.1), French (B2).

Seminars, Conferences and Workshops

Feb 2024 **Probability Seminar**, *University of Leeds, UK*, Invited Talk.

Jan 2024 **21st Winter School on Mathematical Finance**, *Soesterberg, The Netherlands*, Poster.

Jan 2024 **Research School: Stochastic and Deterministic Analysis for Irregular Models**, *CIRM, France*, Contributed Talk.

Nov 2023 **Vienna Probability Seminar**, *Institute of Science and Technology, Austria*, Invited Talk.

Sep 2023 **11th Austrian Stochastic Days**, *University of Klagenfurt, Austria*, Contributed Talk.

Jun 2023 **SIAM Conference on Financial Mathematics and Engineering**, *Philadelphia, USA*, Minisymposium *Optimal Transport*, Invited Talk.

May 2023 **Mathematical Finance and Stochastics**, *San Sebastian, Spain*, Contributed Talk.

May 2023 **AAU Doctoral Seminar**, *Universität Klagenfurt, Austria*, Invited Talk.

Mar 2023 **German Probability and Statistics Days**, *Essen, Germany*, Contributed Talk.

Jan 2023 **20th Winter School on Mathematical Finance**, *Soesterberg, The Netherlands*, Poster.

Sep 2022 **10th Austrian Stochastic Days**, *University of Vienna, Austria*, Contributed Talk.

July 2022 **PIMS-IFDS-NSF Summer School on Optimal Transport**, *University of Washington, Seattle, USA*, Contributed Talk.

May 2022 **Stochastic Games and Martingale Optimal Transport**, *Università degli Studi di Milano, Italy*, Contributed Talk.

Apr 2021 **Vienna Seminar in Mathematical Finance and Probability**, *Vienna*, Invited Talk.

Aug 2020 **Bernoulli-IMS One World Symposium**, *Online*, Prerecorded Talk.

Jun 2020 **Internal Probability Seminar**, *University of Bath (Online)*, Invited Talk.

Apr 2020 **Probability Seminar**, *University of Manchester*, Invited Talk — *Cancelled*.

Jan 2020 **Leeds Winter School on Theory and Practice of Optimal Stopping and Free Boundary Problems**, *University of Leeds, UK*, Contributed Talk.

Apr 2019 **2nd Leeds Conference on Stochastic Control and Games under Ambiguity**, *University of Leeds*, Contributed Talk.

Jul 2018 **Hausdorff School: Optimal Transport Meets Economic Theory**, *Hausdorff Centre for Mathematics, Universität Bonn, Germany*, Invited Participant.

Sep 2017 **Workshop on Martingale Optimal Transport**, *University of Oxford*, Invited Participant.

Sep 2017 **Conference on Stochastic Control, Ambiguity and Games**, *University of Leeds*, Poster.

Jun 2017 **BUC-VIII: Stochastic Optimal Control**, *CIMAT, Mexico*, Contributed Talk.

2015-2018 **Student Seminars**, *Dept. of Mathematical Sciences, University of Bath, UK*.

Industrial Research Projects

Participated in five workshops at University of Bath, UK. Collaborated with industrial partners to formulate mathematical problems from applied challenges, presenting outcomes orally and in research proposals.

Jan 2019 **Optimal Stopping for Early Drought Detection**, *Willis Towers Watson*, ITT9.
Investigated analytical and numerical properties of optimal stopping problems for time series climate data to minimise expected detection time, constraining probability of false alarm.

Jun 2017 **Bayesian Inference on Nuclear Magnetic Resonance**, *Schlumberger*, ITT6.
Adapted C code for Bayesian inference with atomic priors in order to estimate relaxation times for nuclear magnetic resonance in rocks and to quantify the uncertainty.

Jan 2017 **Modelling Dermal Absorption of Chemicals**, *Syngenta*, ITT5.
Investigated application of random walk models to describe the absorption of chemical particles through the inhomogeneous media of human skin and leaves of plants.

Jun 2016 **Optimising the Drug Development Process**, *AstraZeneca*, ITT4.
Designed a Bayesian decision framework for the end-to-end drug development process and investigated the application of measure-valued optimal stopping to adaptive clinical trials.

Jan 2016 **Developing a Model for Sea Ice**, *Met Office*, ITT3.
Reconstructed historical sea ice concentrations using a Bayesian hierarchical model, incorporating latent Gaussian random fields, implemented in R-INLA.