

# Jacob Armstrong Goodall

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## Education

- 09/21–10/25 **PhD in Mathematics**, *MAC-MIGS CDT, University of Edinburgh and Heriot-Watt University*, Edinburgh, United Kingdom  
Title Numerical Schemes and Normal Forms for the Nonlinear Schrödinger equation.  
Supervisors Professor Yvain Bruned
- 10/19–10/20 **Master of Science in Mathematics (Pass with Distinction)**, *University of Warwick, Mathematics Institute*, Coventry, United Kingdom  
Scholarship Warwick Taught Master's Scholarship (£10,000 Tuition Fees Covered by the University).  
Title Metrics Between Probability Distributions on Countable Products of Polish Spaces  
Supervisor Professor Robert MacKay
- 09/16–09/19 **Bachelor of Science in Mathematics (First Class Honours)**, *University of Manchester, School of Mathematics*, Manchester, United Kingdom
- 04/14–04/16 **Open Degree (BSc Mathematics)**, *The Open University*, Milton Keynes, United Kingdom

## Publications and Preprints

- Publication Dobrushin and Steif Metrics are Equal. *J Theor Probab* 38, 66 (2025). Armstrong-Goodall, J., MacKay, R.S. [doi:10.1007/s10959-025-01438-5](https://doi.org/10.1007/s10959-025-01438-5)
- Preprint Birkhoff Normal Form via Decorated Trees. Armstrong-Goodall, J., Bruned, Y. [arXiv:2505.04547](https://arxiv.org/abs/2505.04547).
- Preprint Low regularity symplectic schemes for stochastic NLS. Armstrong-Goodall, J., Bruned, Y. [arXiv:2410.22359](https://arxiv.org/abs/2410.22359) *Submitted*.
- Preprint Resonance Based Schemes for SPDEs. Armstrong-Goodall, J., Bruned, Y. [arXiv:2312.16690](https://arxiv.org/abs/2312.16690) *Submitted*.

## Small Projects

- Project Quantum Annealing Dynamics with A. Istratuca, R. A. Lascu, supervised by B. Leimkuhler [Link to Report](#) *Unpublished*.
- Project Model Selection by Simulation with A. Istratuca, R. A. Lascu, Supervised by D. Siska, L. Szpruch and T. Matrai in Collaboration with Moody's Analytics

## Organisation

- Seminars 'This is What We Do' Seminar Series (January - March 2021). Co-organiser with Elliot Addy.
- Colloquium MAC-MIGS Opening Colloquium (October 2022). Co-organiser with Chris Oldnall and Theo Lavier.
- Research Afternoon Time Quantized Numerical Integrators (February 2023). Co-organiser with Yvain Bruned and Simon Malham.

## Participation

- Spring School YMCN Spring School: Recent Advances in SPDEs, University of Münster, March '25
- Workshop Bielefeld-Durham-Edinburgh-Swansea Stochastic Analysis Network Workshop on Stochastic Analysis and Ergodic Theory, University of Durham, December '24
- Summer School 13th Cornell Probability Summer School, Cornell University, June '24
- Summer School Analysis and PDE: Strichartz and resolvent estimates, BCAM-UPV/EHU, June '24

Conference	Decorated Tree-like structures for singular dynamics, Institut Elie Cartan de Lorraine, May '24
Conference	Recontre ANR, Laboratoire de Mathematiques de Bretagne Atlantique, May '24
Conference	Hopf Algebras, Operads, Deformations for Singular Dynamics, Institut Elie Cartan de Lorraine, June '23
Conference	GdR TRAG, Université PSL, June '23
Summer School	51st St-Flour Summer School in Probability, June '23
Conference	16th Oxford-Berlin Young Researchers Meeting on Applied Stochastic Analysis, University of Oxford, Dec '22
Workshop	ICMS and MAC-MIGS Modelling Camp 2022, ICMS Edinburgh, May '22

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## Talks

Summer School June '24	13th Cornell Probability Summer School Title: Low Regularity Numerical Schemes for SPDE
Conference Speaker June '24	Recontre ANR, Laboratoire de Mathematiques de Bretagne Atlantique Title: Resonance based numerical schemes for Dispersive SPDE, May '24
Conference Speaker June '23	Hopf Algebras, Operads, Deformations for Singular Dynamics, Institut Elie Cartan de Lorraine Title: Low Regularity Numerical Schemes for SPDE
Conference Speaker June '23	GdR TRAG, Université PSL Title: Low Regularity Numerical Schemes for SPDE
Summer School June '23	51st St-Flour Summer School in Probability Title: Low Regularity Numerical Schemes for SPDE
Conference Speaker Dec '22	Oxford-Berlin Young Researchers' Meeting on Applied Stochastic Analysis Title: Dobrushin and Steif Metrics are Equal

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## Other Training

Training	Edinburgh innovations Pre-accelerator Entrepreneurship Training, University of Edinburgh
Training	Postdoc2Innovators(P2i) Entrepreneurship Training, Online, provided by University of Cambridge

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## Teaching

Semester 1 22-23	Facets of Mathematics
Semester 1 23-24	Foundations of Probability
Semester 1 23-24	Advanced Mathematics for Economics
Semester 1 23-24	Stochastic Modelling

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## Visitations

01/09/24 – 31/08/25	<b>Research Visit</b> , <i>Institut Elie Cartan de Lorraine</i> , Nancy, Long research stay in group of Professor Yvain Bruned.
20/06/22 – 03/07/22	<b>Research Visit</b> , <i>Max Planck Institute for Mathematics in the Sciences</i> , Leipzig, Short research stay in group of Professor Felix Otto.

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## Computer skills

<b>OS:</b>	Linux Ubuntu	<b>Scientific:</b>	Python, C++
<b>DevOps:</b>	Git, GitHub	<b>Typography:</b>	L <sup>A</sup> T <sub>E</sub> X
<b>Web design:</b>	HTML, CSS, JavaScript		

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## Community Building

09/22 – 08/24	<b>ResLife Resident Assistant</b> , <i>O'Shea South</i> , University of Edinburgh Halls of Residence.
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## References

**Yvain Bruned**

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**Andrew Clausen** (Teaching Reference)

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**Robert MacKay**

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