

# Saifuddin (Saif) Syed

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**Date of Birth** July 28, 1992  
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April 8, 2023

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## ACADEMIC AFFILIATIONS AND EDUCATION

- 2023 – **Florence Nightingale Bicentenary Fellow and Tutor.**  
*University of Oxford, Department of Statistics.*  
Computational statistics and machine learning (OxCSML).
- 2022 – **Next-Generation Event Horizon Telescope.**  
Member of the Algorithms and Inference Working Group.
- 2022 – 2023 **Postdoctoral Researcher.**  
*University of Oxford, Department of Statistics.*  
Supervised by Arnaud Doucet.  
Funded by the CoSInES project.
- 2017 – 2022 **PhD in Statistics.**  
*University of British Columbia, Department of Statistics.*  
Supervised by Alexandre Bouchard-Côté.  
Thesis: “Non-reversible parallel tempering on optimized paths”.
- 2014 – 2016 **MSc in Mathematics.**  
*University of British Columbia, Department of Mathematics.*  
Supervised by Ed Perkins.  
Thesis: “Spatial diffusions with singular drifts: The construction of super Brownian motion with immigration at unoccupied sites”.
- 2010 – 2014 **BMath in Mathematics.**  
*University of Waterloo, Faculty of Mathematics.*  
Double major in pure mathematics and applied mathematics.  
Graduated with distinction on the Dean’s honours list.

## PUBLICATIONS

- [1] Nikola Surjanovic, **Saifuddin Syed**, Trevor Campbell, and Alexandre Bouchard-Côté. “Parallel tempering with a variational reference” (2022), arXiv:2206.00080.  
*Conference on Neural Information Processing Systems (NeurIPS).*
- [2] Trevor Campbell, **Saifuddin Syed**, Chiao-Yu Yang, Michael I. Jordan, and Tamara Broderick. “Local exchangeability.” (2022), arXiv:1906.09507.  
*Accepted in Bernoulli.*
- [3] **Saifuddin Syed\***, Vittorio Romaniello\*, Trevor Campbell, and Alexandre Bouchard-Côté. “Parallel tempering on optimized paths” (2021), arXiv: 1905.02939.  
*International Conference on Machine Learning (ICML), PMLR 139:10033-10042, 2021.*
- [4] **Saifuddin Syed**, Alexandre Bouchard-Côté, George Deligiannidis, and Arnaud Doucet. “Non-reversible parallel tempering: a scalable highly parallel MCMC scheme” (2021), arXiv:1905.02939.  
*Journal of the Royal Statistical Society (Series B), DOI:10.1111/rssb.12464.*

\* denotes equal author contribution (shared first-authorship).

## PRIZES, SCHOLARSHIPS AND OTHER HONOURS

2023	ISBA Savage Award: Theory and Methods (Finalist).
2023	SSC Pierre Robillard Award.
2023 – 2026	Florence Nightingale Bicentennial Fellowship.
2023 – 2025	NSERC Postdoctoral Fellowship.
2022	ISBA 2022 World Meeting Travel Award.
2021	Marshall Prize.
2017 – 2021	UBC Four Year Fellowships (FYF) For PhD Students.
2020	NeurIPS Top Reviewer (Top 10%).
2017 – 2020	NSERC Canada Graduate Scholarship Doctorate Award (CGS-D).
2017 – 2020	UBC Faculty of Science Graduate Award.
2017	Anona Thorne and Takao Tanabe Graduate Entrance Scholarship in Statistics.
2015 – 2016	NSERC Alexander Graham Bell Canada Graduate Scholarship (CGS-M).
2010 – 2014	Queen Elizabeth II Aiming for the Top Scholarship.
2010 – 2014	University of Waterloo Math Faculty Dean’s Honours List.
2013	NSERC Undergraduate Student Research Award (USRA).
2011	University of Waterloo Research Award.
2011	University of Waterloo President’s Scholarship.

## TEACHING EXPERIENCE

2022	<b>Teaching Assistant.</b> <i>University of Oxford, Sommerville College.</i> M3 Probability, Prelim probability for a general audience.
2018 – 2021	<b>Teaching Assistant.</b> <i>University of British Columbia, Department of Statistics.</i> STAT 547C, Topics in probability for statistics. Duties: Office hours, grading, and guest lectures.
2013 – 2020	<b>Private Math Tutor.</b> <i>Self-employed.</i> Privately tutored 100+ unique students one-on-one with 2-5 regular clients per term. Courses ranged from first year calculus to graduate complex analysis.
2015 – 2016	<b>Recitation Instructor.</b> <i>University of British Columbia, Department of Mathematics.</i> MATH 100V/101V, Differential/Integral Calculus (Vantage College). Taught one section of approximately 25 students for 2 terms. Duties: lecturing, managing office hours, and 4 teaching assistants.
2015	<b>Instructor.</b> <i>University of British Columbia, Department of Mathematics.</i> MATH 105, Integral calculus for commerce and social sciences. Taught one section of approximately 80 students for 1 term. Duties: lecturing, creating assignments, managing office hours, a teaching assistant.
2015	<b>Workshop Instructor.</b> <i>Beat Your Course Inc.</i> Led exam review workshops in differential equations, and multivariate calculus.
2014 – 2015	<b>Instructor.</b> <i>BrainBoost Education.</i> Taught Grade 5-12 students with learning disabilities (e.g. autism, dyslexia, etc).
2014	<b>Teaching Assistant.</b> <i>University of British Columbia, Department of Mathematics.</i> MATH 220, Mathematical proof. Math learning centre tutor.

## RELEVANT EXPERIENCE AND SERVICE

2023 –	<b>Seminar Organizer.</b> <i>OxCSML seminar, Univeristy of Oxford.</i> Weekly seminar series for computational statistics and machine learning group.
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- 2023 **Workshop Organizer**, *Black Hole Initiative, Harvard University*.  
 “Algorithms and inference for the Next-Generation Event Horizon Telescope.”  
 Goal: Create collaborations between AI methods researchers and the ngEHT.
- 2023 **Workshop Organizer**. *CoSInES + Bayes4Health, University of Warwick*.  
 “Optimal transport masterclass.”  
 Goal: Outline recent research using optimal transport for Monte Carlo methods.
- 2022 – 2023 **Seminar Organizer**. *CoSInES seminar*.  
 Bi-weekly seminar series to showcase international computational statistics research.
- 2020, 2022 **Reviewer**. *Statistics and Computing*.
- 2022 **Admission Interviewer**. *University of Oxford, Somerville College*.  
 Interviewing prospective undergraduate students for admission to Somerville College.
- 2020 **Reviewer**. *Biometrika*.
- 2020 **Reviewer**. *Conference on Neural Information Processing Systems (NeurIPS)*.
- 2018 **Reviewer**. *Association for Uncertainty in Artificial Intelligence (UAI)*.
- 2012 – 2014 **General Manager & Co-editor-in-chief**. *Waterloo Math Review (WMR)*.  
 The WMR was a Canada-wide journal to showcase undergraduate math research.  
 Duties: Manage submissions, reviewers, design journal, and distribute across Canada.
- 2013 **Research Assistant**. *University of Waterloo, Department of Pure Mathematics*.  
 Supervised by Spiro Karigiannis.
- 2012 **Actuarial Analyst Intern**. *Desjardins General Insurance Group*.  
 Completed P/1 and FM/2 exams from the Society of Actuaries.
- 2011 **Research Assistant**. *University of Waterloo, Department of Pure Mathematics*.  
 Supervised by Kevin Hare.

#### NOTABLE TALKS

- 2023 **JSM 2023**. *Toronto, Canada*.  
 (Upcoming Invited Conference) “ISBA Savage Award Finalist: Theory and Methods.”
- SMC Down Under Workshop**. *Brisbane, Australia*.  
 (Upcoming Invited Keynote) “Annealing algorithms.”
- SSC Annual Meeting 2023**. *Ottawa, Canada*.  
 (Upcoming Invited Keynote) “Pierre Robillard Award”
- Bayes4Health & CoSInES Workshop**. *Oxford, UK*.  
 (Invited Conference) “Annealing algorithms.”
- BayesComp 2023**. *Levi, Finland*.  
 (Upcoming Invited Conference) “Parallel tempering on optimized paths.”
- Johns Hopkins Biostats Seminar**. *Remote*.  
 (Invited Seminar) “Non-reversible parallel tempering.”
- 2022 **CMStatistics 2022**. *London, UK*.  
 (Invited Conference) “Parallel tempering with a variational reference.”
- NeurIPS 2022**. *New Orleans, USA*.  
 (Invited Poster) “Parallel tempering with a variational reference.”
- Harvard University Black Hole Initiative**. *Cambridge, United States*.  
 (Invited Seminar) “Non-reversible parallel tempering and the EHT.”
- ISBA 2022 World Meeting**. *Montreal, Canada*.  
 (Invited Conference) “Non-reversible parallel tempering.”
- University of Montreal Department of Statistics**. *Montreal, Canada*.  
 (Invited Seminar) “Non-reversible parallel tempering on optimized paths.”

- University of Oxford OxCSSL Seminar.** *Oxford, UK.*  
(Invited Seminar) “Non-reversible parallel tempering on optimized paths.”
- CoSInES Seminar.** *Remote.*  
(Invited Seminar) “Non-reversible parallel tempering.”
- Queensland University of Technology.** *Remote.*  
(Invited Seminar) “Non-reversible parallel tempering on optimized paths.”
- UBC Department of Statistics.** *Remote.*  
(Invited Seminar) “Non-reversible parallel tempering on optimized paths.”
- Simon Fraser University Department of Statistics.** *Burnaby, Canada.*  
(Invited Seminar) “Non-reversible parallel tempering on optimized paths.”
- 2021 **MCM 2021.** *Remote.*  
(Contributed Conference) “Parallel tempering on optimized paths.”
- ICML 2021.** *Remote.*  
(Invited Poster) “Parallel tempering on optimized paths.”
- ISBA 2021 World Meeting.** *Remote.*  
(Contributed Conference) “Parallel tempering on optimized paths.”
- Riskfuel Analytics Inc.** *Remote.*  
(Invited Seminar) “Parallel tempering on optimized paths.”
- 2020 **CAIDA: BC’s AI Showcase.** *Remote.*  
(Contributed Poster) “Non-reversible parallel tempering.”
- MURI Seminar.** *Remote.*  
(Invited Seminar) “Non-reversible parallel tempering.”
- 2019 **University of Bristol Department of Mathematics.** *Bristol, UK.*  
(Invited Seminar) “Non-reversible parallel tempering: scaling and optimality.”
- CMStatistics 2019.** *London, UK.*  
(Invited Conference) “Non-reversible parallel tempering.”
- University of Oxford OxCSSL Seminar.** *Oxford, UK.*  
(Invited Seminar) “Non-reversible parallel tempering.”
- MCM 2019.** *Sydney, Australia.*  
(Invited Conference) “Non-reversible parallel tempering: scaling and optimality.”
- 1QBit Information Technologies Inc.** *Vancouver, Canada.*  
(Invited Seminar) “Non-reversible parallel tempering: scaling and optimality.”
- Microsoft Research.** *Redmond, USA.*  
(Invited Seminar) “Optimal scaling of parallel tempering.”
- 2018 **UBC/SFU Joint Statistics Seminar.** *Vancouver, Canada.*  
(Contributed Conference) “Scaling laws of parallel tempering.”
- SSC 2018 Annual Meeting.** *Montreal, Canada.*  
(Contributed Conference) “Scaling laws of parallel tempering.”