

# Saifuddin (Saif) Syed

**Phone** +44 7467 304999  
**Email** saifuddin.syed@stats.ox.ac.uk  
**Website** www.saifsyed.com  
**Date of Birth** July 28, 1992  
**Citizenship** Canada & Pakistan

November 12, 2022

31 Hayes Close  
Oxford, United Kingdom  
OX4 0DZ

## EDUCATION

- 2022 – **Postdoctoral Researcher.** *University of Oxford, Department of Statistics.*  
Supervised by Arnaud Doucet.  
Computational statistics and machine learning group (OxCSML).  
Funded by the CoSInES project.
- 2022 – 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.

## OTHER ACADEMIC AFFILIATIONS

- 2022 – **CoSInES project.** *United Kingdom.*  
Collaboration of researchers across the UK doing research in COmputational Statistical INFerence for Engineering and Security.
- 2022 – **ngEHT Collaboration.** *International.*  
Member of the Algorithms and inference working group for the Next-Generation Event Horizon Telescope.

## PUBLICATIONS

- [1] Nikola Surjanovic, **Saifuddin Syed**, Trevor Campbell, and Alexandre Bouchard-Côté. “Parallel tempering with a variational reference” (2022), arXiv:2206.00080.  
*Accepted in the 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

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> Probability theory.
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 – 2021	<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>Workshop Organizer,</b> <i>Black Hole Initiative, Harvard University.</i> “Algorithms and inference for the Next-Generation Event Horizon Telescope.” Goal: Create collaborations between AI methods researchers and the ngEHT.
2023	<b>Workshop Organizer.</b> <i>CoSInES + Bayes4Health, University of Warwick.</i> “Optimal transport masterclass.” Goal: Outline recent research using optimal transport for Monte Carlo methods.

- 2022 – **Seminar Organizer.** *CoSInES seminar.*  
Bi-weekly seminar series to showcase international computational statistics research.
- 2020 – **Reviewer.** *Statistics and Computing.*
- 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.

#### TALKS

- 2023 **Bayes Comp 2023.** *Levi, Finland.*  
(Upcoming Invited Conference) “Geometric tuning of SMC Samplers.”
- 2022 **CMStatistics 2022.** *London, UK.*  
(Upcoming Invited Conference) “Parallel tempering with a variational reference.”
- NeurIPS 2022.** *New Orleans, USA.*  
(Upcoming 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 OxCMSL 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 OxCsML 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."