Saifuddin (Saif) Syed

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Date of Birth July 28, 1992
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November 8, 2022

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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 and MURI grants.

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).*

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 — **Teaching Assistant**. *University of Oxford, Sommerville College.*
Probability theory

2018 – 2021 — **Teaching Assistant**. *University of British Columbia, Department of Statistics.*
STAT 547C, Topics in probability for statistics.

2013 – 2021 — **Private Math Tutor**. *Self-employed.*
Privately tutored 100+ unique students one-on-one.
Courses ranged from first year calculus to graduate complex analysis.

2015 – 2016 — **Recitation Instructor**. *University of British Columbia, Department of Mathematics.*
MATH 100V/101V, Differential/Integral Calculus (Vantage College).
Taught one section of 25 students for 2 terms.
Duties: lectures, office hours, managing teaching assistants.

2015 — **Instructor**. *University of British Columbia, Department of Mathematics.*
MATH 105, Integral calculus for commerce and social sciences.
Taught one section of 77 students for 1 term.
Duties: lecturing, creating assignments, manage office hours, TA, and grades.

2015 — **Workshop Instructor**. *Beat Your Course Inc.*
Led exam review workshops in differential equations, and multivariate calculus.

2014 – 2015 — **Instructor**. *BrainBoost Education.*
Taught Grade 5-12 students with learning disabilities (e.g. autism, dyslexia, etc.)

2014 — **Teaching Assistant**. *University of British Columbia, Department of Mathematics.*
MATH 220, Mathematical proof.
Math learning centre tutor

Other Relevant Employment

2017 – 2022 — **Research Assistant**. *University of British Columbia, Department of Statistics.*

2014 – 2016 — **Research Assistant**. *University of British Columbia, Department of Mathematics.*

2012 – 2014 — **General Manager & Co-editor-in-chief**. *Waterloo Math Review (WMR).*
The WMR was a journal spotlighting Canadian undergraduate math research

2013 — **Research Assistant**. *University of Waterloo, Department of Pure Mathematics.*

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.*

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TALKS

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2023	**Bayes Comp 2023**. *Levi, Finland.*
	(Upcoming Invited Conference) "Optimal 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 OxCSML 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."