Ameer Dharamshi

PhD Candidate · Biostatistics

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Education

University of Washington — *Seattle, WA, USA*
PhD in Biostatistics — *September 2022 - Present*
- Advisors: Daniela Witten and Jon Wakefield

University of Toronto — *Toronto, ON, Canada*
MSc in Statistical Sciences — *September 2019 - June 2020*

University of Waterloo — *Waterloo, ON, Canada*
BMath in Mathematics/CPA — *September 2013 - June 2018*
- Minors in Statistics and Computer Science

Professional Experience

2024-Present   **Research Consultant**, Department of Demography, University of California Berkeley
2022-Present   **Graduate Research Assistant**, Department of Biostatistics, University of Washington
2020-2022   **Research & Data Consultant**, Global Education Monitoring Report, UNESCO
2021-2022   **Part-time Researcher**, Bayesian Demography Lab, University of Toronto
2018-2019   **Consultant**, Deloitte Canada

Publications

Published

Wu, Y., **Dharamshi, A.**, & Wakefield, J. (2025). Small Area Estimation of Education Levels in Low- and Middle-Income Countries. *To appear in Annals of Applied Statistics*. Available from: `https://arxiv.org/abs/2502.07946`.

Dharamshi, A., Neufeld, A., Gao, L. L., Witten, D., & Bien, J. (2025). Thinning a Wishart Random Matrix. *To appear in Biometrika*. Available from: `https://doi.org/10.1093/biomet/asaf081`.

Dharamshi, A., Neufeld, A., Gao, L. L., Bien, J., & Witten, D. (2025). Decomposing Gaussians with Unknown Covariance. *To appear in Biometrika*. Available from: `https://doi.org/10.1093/biomet/asaf057`.

Dharamshi, A., Alexander, M., Winant, C., & Barbieri, M. (2025). Jointly estimating subnational mortality for multiple populations. *Demographic Research*, 52, 71-110. Available from: `https://doi.org/10.4054/DemRes.2025.52.3`

Neufeld, A., **Dharamshi, A.**, Gao, L. L., Witten, D., & Bien, J. (2025). Discussion of "Data fission: splitting a single data point". *Journal of the American Statistical Association: Theory & Methods*, 120(549), 151-157. Available from: `https://doi.org/10.1080/01621459.2024.2421998`.

Dharamshi, A., Neufeld, A., Motwani, K., Gao, L. L., Witten, D., & Bien, J. (2025). Generalized data thinning using sufficient statistics. *Journal of the American Statistical Association: Theory & Methods*, 120(549), 511-523. Available from: `https://doi.org/10.1080/01621459.2024.2353948`.

Neufeld, A., **Dharamshi, A.**, Gao, L. L., & Witten, D. (2024). Data thinning for convolution-closed distributions. *Journal of Machine Learning Research*, 25(57), 1-35. Available from: `https://doi.org/10.48550/arXiv.2301.07276`.

Dharamshi, A., Ngo, V., & Rosenthal, J. S. (2024). Sampling by divergence minimization. *Communications in Statistics - Simulation and Computation*, 53(12), 6071-6095. Available from: `https://doi.org/10.1080/03610918.2023.2199352`.

Dharamshi, A., Barakat, B., Alkema, L., & Antoninis, M. (2022) A Bayesian model for estimating Sustainable Development Goal indicator 4.1.2: School completion rates. *Journal of the Royal Statistical Society: Series C (Applied Statistics)*, 71(5), 1822–1864. Available from: `https://doi.org/10.1111/rssc.12595`.

Dharamshi, A., Richards, M., Childress, S., Lee, B., & Casey, D., (2026). Estimating Residential Displacement in the Central Puget Sound Region using Household Survey Data. *ArXiv preprint*. Available from: `https://arxiv.org/abs/2603.06437`.

Dharamshi, A., Gao, P., & Wakefield, J. (2025). Exact variance estimation for model-assisted survey estimators using U- and V-statistics. *ArXiv preprint*. Available from: `https://arxiv.org/abs/2502.11032`.

Dharamshi, A., Antoninis, M., Montoya, S., & Barakat, B. (2023). A Bayesian cohort model for estimating out-of-school rates and populations. *SocArXiv preprint*. Available from: `https://osf.io/preprints/socarxiv/sqwb2/`

Scholarships & Awards

2026-2028	**NSERC CPRA (Declined)**, Natural Sciences and Engineering Research Council of Canada	*140,000 CAD*
2024-2027	**NSF-HNDS - Senior Investigator (PI: Magali Barbieri, University of California Berkeley)**, National Sciences Foundation	*791,403 USD (49,500 to AD)*
2024	**Student Paper Award**, JSM Statistical Learning and Data Science Section	*1,000 USD*
	CSSS Travel Award (EPC 2024), University of Washington	*500 USD*
2023-2026	**NSERC PGS D**, Natural Sciences and Engineering Research Council of Canada	*96,250 CAD*
2022	**Top Scholar Recruitment Award**, University of Washington	*7,500 USD*
	Faculty of Arts and Science Doctoral Recruitment Award (Declined), University of Toronto	*5,000 CAD*
2013-2017	**Faculty of Mathematics Entrance Scholarship**, University of Waterloo	*5,000 CAD*
2013	**President's Scholarship of Distinction**, University of Waterloo	*5,000 CAD*

Presentations

Invited Talks

Testing hypotheses via orthogonalization

1. Bocconi University (February 2025)

Expanding the scope of post-selection inference

1. McGill University (December 2025)
2. ETH Zürich (December 2025)
3. University of Toronto (December 2025)
4. NUS-IMS Young Mathematical Scientists Forum - Statistics and Data Science 2025 (November 2025)
5. University of Cambridge (November 2025)

Estimating Residential Displacement in Puget Sound using Household Survey Data

1. Public Health Seattle & King County (June 2025)

Data thinning with applications in the health sciences

1. SSC Annual Meeting 2024 (April 2024)

Generalized data thinning using sufficient statistics

1. JSM 2024 (August 2024)
2. G-Research ML College Talk (August 2023)
3. International Seminar on Selective Inference (April 2023)

Estimating SDG 4 Indicators with a Bayesian Modelling Framework: Completion and Out-of-School Rates

1. 9th Annual Meeting of the Technical Cooperation Group on SDG4 Indicators: Joint EMIS and Surveys Working Group (November 2022)

A Bayesian Cohort Model for Estimating SDG Indicator 4.1.4: Out-of-School Rates

1. STAB Working Group, University of Washington (November 2022)
2. Bayes Working Group, University of Massachusetts Amherst. (December 2021)
3. 8th Annual Meeting of the Technical Cooperation Group on SDG4 Indicators (TCG): Household Surveys Working Group (October 2021)

Adjusted Bayesian Completion Rates (ABC)

1. Bayes Working Group, University of Massachusetts Amherst (June 2021)

CONTRIBUTED PRESENTATIONS

Estimating subnational fertility rates with a principal component-based Bayesian spatiotemporal model

1. International Population Conference 2025 (July 2025)

Estimating the Composition of the Cystic Fibrosis Pulmonary Microbiome

1. North American Cystic Fibrosis Conference 2024 (September 2024)

A Principled Approach to Model Validation in the Context of Estimating Age-Specific Rates

1. European Population Conference 2024 (Poster) (June 2024)

A Bayesian Hierarchical Model for Jointly Estimating Subnational Mortality for Multiple Populations

1. PAA Annual Meeting. (April 2022)
2. 6th HMD Symposium (June 2022)
3. European Population Conference 2022 (June 2022)

CSEye: A Proposed Solution for Accurate and Accessible One-to-Many Face Verification

1. AAAI-2019 (Poster) (January 2019)

Teaching Experience

University of Washington

Spring 2024 **DATA 558: Statistical Machine Learning for Data Scientists**, Teaching Assistant
Winter 2024 **BIOST 515: Biostatistics II**, Teaching Assistant

University of Toronto

Summer 2020 **STA 302: Methods of Data Analysis I**, Teaching Assistant
Winter 2020 **STA 238: Probability, Statistics and Data Analysis II**, Teaching Assistant
Fall 2019 **STA 237: Probability, Statistics and Data Analysis I**, Teaching Assistant

University of Waterloo

Summer 2015 **MATH 127: Calculus 1 for the Sciences**, Teaching Assistant
Fall 2014 **MATH 135: Algebra for Honours Mathematics**, Teaching Assistant

Outreach & Professional Development

PEER REVIEW

Journal of the American Statistical Association - Theory & Methods, Electronic Journal of Statistics, Demographic Research, Population Health Metrics, Journal of Survey Statistics and Methodology, Survey Methodology

COMMUNITY SERVICE

2025-Present **Space Time Analysis Bayes (STAB) Research Group Organizer**, University of Washington
2024-Present **Biostatistics Student Seminar Organizer**, University of Washington
2023-Present **EPTEC Committee Member (Biostatistics Curriculum)**, University of Washington
2023-2024 **PARS Reviewer**, University of Washington
2022-2023 **Biostatistics EDI Committee Member**, University of Washington

Additional Information

- Technical Skills: R/RMarkdown, Stan, INLA, Python, SQL, C/C++, MATLAB, Julia
- General Skills: LaTeX and Microsoft Office
- Languages: English (native), French (basic)
- Hobbies: reading, squash, tennis, skating, baking