

Ameer Dharamshi

PHD STUDENT · BIOSTATISTICS

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Education

University of Washington

PHD IN BIOSTATISTICS

• Advisors: Daniela Witten and Jon Wakefield

Seattle, WA, USA

September 2022 - Present

University of Toronto

MSC IN STATISTICAL SCIENCES

Toronto, ON, Canada

September 2019 - June 2020

University of Waterloo

BMATH IN MATHEMATICS/CPA

• Minors in Statistics and Computer Science

Waterloo, ON, Canada

September 2013 - June 2018

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

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. (2023). Sampling by divergence minimization. *Communications in Statistics - Simulation and Computation*, 1-25. 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>.

PREPRINTS

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.**, Neufeld, A., Gao, L. L., Witten, D., & Bien, J. (2025). Thinning a Wishart Random Matrix. *ArXiv preprint*. Available from: <https://arxiv.org/abs/2502.09957>.
- Wu, Y., **Dharamshi, A.**, & Wakefield, J. (2025). Small Area Estimation of Education Levels in Low- and Middle-Income Countries. *ArXiv preprint*. Available from: <https://arxiv.org/abs/2502.07946>.
- 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

- 2024-2027 **NSF-HNDS - Senior Investigator (PI: Magali Barbieri, University of California Berkeley)**, National Sciences Foundation
- 2024 **Student Paper Award**, JSM Statistical Learning and Data Science Section
CSSS Travel Award (EPC 2024), University of Washington
- 2023-2026 **NSERC PGS D**, Natural Sciences and Engineering Research Council of Canada
- 2022 **Top Scholar Recruitment Award**, University of Washington
Faculty of Arts and Science Doctoral Recruitment Award (Declined), University of Toronto
- 2013-2017 **Faculty of Mathematics Entrance Scholarship**, University of Waterloo
- 2013 **President's Scholarship of Distinction**, University of Waterloo

Presentations

INVITED TALKS

2024

- Generalized data thinning using sufficient statistics*. JSM 2024. (August)
Data thinning with applications in the health sciences. SSC Annual Meeting 2024. (April)

2023

- Generalized data thinning using sufficient statistics*. G-Research ML College Talk. (August)
Generalized data thinning using sufficient statistics. International Seminar on Selective Inference. (April)

2022

- Estimating SDG 4 Indicators with a Bayesian Modelling Framework: Completion and Out-of-School Rates*. 9th Annual Meeting of the Technical Cooperation Group on SDG4 Indicators (TCG): Joint EMIS and Surveys Working Group. (November)
A Bayesian Cohort Model for Estimating SDG Indicator 4.1.4: Out-of-School Rates. STAB Working Group, University of Washington. (November)

2021

- Estimating Out-of-School Rates*. Bayes Working Group, University of Massachusetts Amherst. (December)
Out-of-School Rate Modelling. 8th Annual Meeting of the Technical Cooperation Group on SDG4 Indicators (TCG): Household Surveys Working Group. (October)
Adjusted Bayesian Completion Rates (ABC). Bayes Working Group, University of Massachusetts Amherst. (June)

CONTRIBUTED PRESENTATIONS

2025

Estimating subnational fertility rates with a principal component-based Bayesian spatiotemporal model. Oral presentation: International Population Conference 2025

2024

Estimating the Composition of the Cystic Fibrosis Pulmonary Microbiome. Poster and thematic poster session speaker: North American Cystic Fibrosis Conference 2024

A Principled Approach to Model Validation in the Context of Estimating Age-Specific Rates. Poster: European Population Conference 2024

2022

A Bayesian Hierarchical Model for Jointly Estimating Subnational Mortality for Multiple Populations. Oral presentations: European Population Conference 2022, 6th HMD Symposium, PAA Annual Meeting.

2019

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

COMMUNITY SERVICE

2024-Present **Student Seminar Organizer**, Department of Biostatistics, University of Washington

2023-Present **EPTEC Committee Member**, Department of Biostatistics, University of Washington

2023-Present **PARS Reviewer**, Department of Biostatistics, University of Washington

2022-2023 **EDI Committee Member**, Department of Biostatistics, 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, board games