Christian T. Covington

Contact Information	Department of Biostatistics Harvard University	Email: ccovington@g.harvard.edu Website: https://ctcovington.github.io

Research Interests

Model misspecification and uncertainty, valid statistical inference in adaptive settings, formal data privacy, scientific reform

Education

Harvard University, Cambridge, MA

PhD, Biostatistics, September 2022 -

University of Waterloo, Waterloo, ON, Canada

MMath, Computer Science, September 2020 - June 2022
Advised by Xi He and Gautam Kamath

Cornell University, Ithaca, NY, USA

BA, Statistical Science, January 2014 - May 2016

Honors and Awards

Harvard University Distinction in Teaching, 2023
University of Waterloo Graduate Excellence Award, 2020 - 2022
David R. Cheriton Graduate Scholarship, 2020 - 2022
Dr. Derick Wood Graduate Scholarship, 2020 - 2021
Cornell University Magna Cum Laude and Distinction in Statistical Science, 2016
Hunter R. Rawlings III Cornell Presidential Research Scholar, 2014 - 2016

Papers in preparation

Bayesian Model Criticism using Uniform Parameterization Checks
Christian Covington, Jeff Miller
ISBA World Meeting 2024 (Forthcoming)

Publications

Unbiased Statistical Estimation and Valid Confidence Intervals Under Differential Privacy
Christian Covington, Xi He, James Honaker, Gautam Kamath
Statistica Sinica: Special Issue on Data Privacy (TBA)

Differences in patient perceptions of integrated care among black, hispanic, and white Medicare beneficiaries
Emilia J Ling, Molly Frean, Jody So, Maike Tietschert, Nancy Song, Christian Covington, Hassina Bahadurazada, Sonia Khurana, Luis Garcia, Sara J Singer
Health Services Research (2021)

Patient experiences of integrated care in Medicare accountable care organizations and Medicare Advantage versus traditional fee-for-service
Molly Frean, Christian Covington, Maike Tietschert, Hassina Bahadurzada, Jodi So, Sara J Singer
Medical Care (2021)

Invertible promoters mediate bacterial phase variation, antibiotic resistance, and host adaptation in the gut
Xiaofang Jiang, A Brantley Hall, Timothy D Arthur, Damian R Plichta, Christian T Covington, Mathilde Poyet, Jessica Crothers, Peter L Moses, Andrew C Tolonen, Hera Vlamakis, Eric J Alm,

Ramnik J Xavier
Science (2019)

Variation in Patients' Perceptions of Integrated Care Among Medicare Beneficiaries By Level of Need
Nancy Song, Molly Frean, Christian Covington, Maike Tietschert, Emilia Ling, Hassina Bahadurzada, Michaela Kerrissey, Mark Friedberg, Sara Singer
AcademyHealth Annual Research Meeting (2019)

Teaching Experience

BST 240: Probability II **Fall 2024**
BST 210: Applied Regression Analysis **Fall 2023**

Professional Experience

Apple, Cupertino, CA **May 2021 - August 2021**
Summer Intern

- Developed differentially private algorithms for product teams.

Harvard University, Cambridge, MA **July 2019 - August 2020**
Research Fellow: Privacy Tools Project

- Part of core development team for the SmartNoise Rust library.
- Created software implementation of and extended theoretical results for differentially private Snapping Mechanism.

Broad Institute, Cambridge, MA **August 2018 - June 2019**
Associate Computational Biologist

- Wrote computational pipelines for preparation and analysis of biological data, including RNA-Sequencing and CRISPR screens.
- Created centralized storage and documentation of lab's computational resources.
- Contributed to automated system for CRISPR repair template design.

Harvard Laboratory for Systems Medicine, Cambridge, MA **July 2017 - August 2018**
Data Scientist

- Contributed to R package ehR to assist in analyzing electronic medical record data.
- Built machine learning models for research on physician testing decisions.

Harvard Business School, Boston, MA **July 2016 - June 2017**
Research Associate

- Helped develop simulation for research into dynamic strategic interactions.

Reviewing

NeurIPS (2021)
ICML (2021)