Lamin Juwara

Education

2018-2022 **PhD. (Computational Statistics Concentration)**, *Quantitative Life Sciences*, McGill University
Thesis Privacy-preserving regression methods for distributed biomedical data
Advisors Dr Paramita Saha-Chaudhuri (Biostatistics) and Prof Archer Yi Yang (Statistics)

2016-2018 **MSc. Biostatistics**, McGill University, Canada
Thesis Virtual Pooling as a Privacy-preserving Analysis Tool
Supervisor Dr Paramita Saha-Chaudhuri

2015-2016 **MSc. Mathematics**, Stellenbosch University, South Africa
Thesis Reverse-engineering T-cell proliferation dynamics
Supervisor Dr Wilfred Ndifon

2011-2015 **BSc. Mathematics (Hons)**, Kwame Nkrumah University of Science and Technology, Ghana
Thesis Representation Theory of Finite Groups
Supervisor Dr Richard Kena Boadi

Employment

07/22-07/24 **Postdoctoral Researcher**, Electronic Health Information Laboratory, University of Ottawa
- Designing and evaluating machine learning methods for mitigating covariate bias in real world data and randomized clinical trials.
- Applications of machine learning methods to synthetic data generation.

01/20-04/21 **Graduate Teaching Assistant in Statistics, Math 324**, McGill University
- Sampling distributions, point and interval estimation, hypothesis testing, analysis of variance, contingency tables, nonparametric inference, regression, and Bayesian inference.

01/19-06/22 **Biostatistician**, iMD Research Inc, Montreal QC
- Statistical consulting, Study design, data analysis, and report writing.

09/17-01/19 **Clinical Research Assistant**, Lady Davis Institute at the Jewish General Hospital , Montreal QC
- Study design, data analysis, report writing, and project management.

Summer 2017 **Visiting Research Scholar**, South African Centre for Epidemiological Modeling and Analysis
- Developed web based applications for HIV incidence estimation (UNAIDS project)
- R Shiny Framework

Awards and Grants

2019-2022 Graduate Excellence Award, Quantitative Life Sciences, McGill University ($40,500)

2018-2022 Mitacs Accelerate Fellowship for PhD Research, McGill University ($80,000)

June, 2021 Best poster, PhD category. Ninth Canadian Statistics Student Conference, 2021 (Cash Prize)

2016-2018 MasterCard Foundation Scholarship for MSc Biostatistics, McGill University ($100,000)

Feb., 2018 Best poster prize, 14th Annual Student Research Day of the Department of Epidemiology, Biostatistics and Occupational Health. McGill University, 2018 ($100)

July, 2016 The Martin Rees prize from the African Institute for Mathematical Sciences.

Toronto, Canada.
+(1) 514 318 4637 • *lamin.juwara@mail.mcgill.ca*

2015-2016 Postgraduate Scholarship for African Institute for Mathematical Sciences ($10,000).

June, 2015 Best graduating student, Department of Mathematics, Kwame Nkrumah University of Science and Technology, Ghana (CWA Rank: 1/140)

Peer reviewed articles

Statistical Methodology

1. Juwara L, Yang AY, Velly AM, Saha-Chaudhuri P (2023). Privacy-preserving analysis of time-to-event data under nested case-control sampling. Statistical Methods in Medical Research. [link]
2. Juwara L, Saha-Chaudhuri P (2022). A Hybrid Covariate Microaggregation Approach for Privacy-Preserving Logistic Regression. Journal of Survey Statistics and Methodology. [link]
3. Saha-Chaudhuri P, Juwara L (2021). Survival Analysis under the Cox Proportional Hazards model with Pooled Covariates. Statistics in Medicine. [link]

Machine Learning and Informatics

1. Juwara L, Hussuna AE Emam KE (2024). An Evaluation of Synthetic Data Augmentation for Mitigating Covariate Bias in Health Data. Patterns. Cell Press. [link]
2. Juwara L, ..., Saha-Chaudhuri P, Velly AM (2020). Predicting neuropathic pain after breast cancer surgery using machine learning. International Journal of Medical Informatics. [link]

Substantive Papers (selected)

1. Juwara L, Marisa Cressatti, ..., Hyman M. Schipper (2023). Development and internal validation of a prognostic model for loss of balance and falls in mid-to late-stage Parkinson?s disease. Neurological sciences. [link]
2. Muller-Bolla, ..., Juwara L, & Velly, A. M. (2023). Improving radiographic diagnosis of pulpo-periodontal complications in primary molars by training: Application in education and clinical research. European journal of dental education: official journal of the Association for Dental Education in Europe, 27(2), 360-367.
3. Liu, R. F., Juwara L., Ferrario, C., & Probst, S. M. (2022). Outcomes and Factors Associated with Completion of Radium-223 Therapy. Nuclear Medicine and Molecular Imaging, 56(5), 228-235.
4. Galindez, J. M., Juwara L., Cressatti, M., Gornitsky, M., Velly, A. M., & Schipper, H. M. (2021). Salivary heme oxygenase-1: a potential biomarker for central neurodegeneration. Journal of Central Nervous System Disease.
5. Cressatti M, Juwara L,..., Velly AM, Schipper HM (2020). Salivary miR-153 and miR-223 levels as diagnostic biomarkers of idiopathic Parkinson disease. Movement disorders. [link]

Presentations and Lectures

Invited Presentations (recent)

Nov., 2023 Evaluation of Synthetic Data Augmentation for Mitigating Covariate Bias in Real World Health Data, Synthetic Data Summit 2023, IET London.

April 2023 The Power of Big Data and Artificial Intelligence, National Oral Health Research Strategy Meeting 2023, Ottawa.

Mar., 2023 Mitigating the impact of data bias through synthetic data generators, QLS Seminar Series, Winter 2023, McGill University.

Contributed Presentations

1. Juwara L and El Emam K. Evaluation of Synthetic Data Augmentation for Mitigating Covariate Bias in Real World Health Data. T-CAIREM AI in Medicine Conference, Toronto, 2023.
2. Juwara L, Yang Y, and Saha-Chaudhuri P. Improving the efficiency of meta-analysis estimators for privacy-preserving Cox regression. QLS Research Day, Montreal, 2022. [*Oral presentation*]

3. Juwara L, Yang Y, and Saha-Chaudhuri P. Privacy-preserving Cox proportional hazards regression with aggregate covariates. Annual Canadian Statistics Student Conference, Virtual, 2021. [*Best poster, PhD category*]
4. Juwara L and Saha-Chaudhuri P. Predictive modeling under data privacy restrictions. Statistical Society of Canada annual Conference, Virtual, 2020. [*Poster + Travel award*]
5. Juwara L and Saha-Chaudhuri P. Microaggregation as a Privacy-Preserving Analytical Tool for Analysis of Confidential Distributed Data. International Society of Pharmacoepidemiology mid-year meeting, Toronto, 2018. [*Poster + Travel award*]

Public Service

2020 - Now Reviewer for Several Q1 Journals:
- JMIR AI and JMIR Medical Informatics
- International Journal of Medical Informatics
- Journal of Survey Statistics and Methodology (JSSM)
- Nature Communications (X1)
- PCORI expert reviewer for grants (X1)

Computing/Programming skills

Advanced	R, Python, MatLab, LaTeX, Linux, SAS, and Office suites
Intermediate	HTML, Visual Basics, and SPSS.
05/2019	Incidence estimation tools AIDS surveillance (UNAIDS) [link]
08/2018	Prevalence and Incidence Calculator: Calculates HIV incidence from prevalence survey data that include biomarkers of recent infection. UNAIDS [link]
2018-Now	Maintain several R-Packages (e.g. [link]) and Web-based tools [link]

Related Skills

Statistics, Mathematical Modeling, Outcomes Research, Study Design, Data Science, Pattern Recognition, High Performance Computing (HPC), SQL, Consulting, Communication, Problem Solving, and Building Relationships.

References

Dr. Paramita Saha-Chaudhuri
Associate Professor of Statistics
Department of Mathematics and Statistics, University of Vermont
email: SahaChaudhuri(DOT)work(AT)gmail(DOT)com
Telephone: +(1) 514.398-7518

Prof. Archer Yi Yang
Associate Professor of Statistics
Department of Mathematics and Statistics, McGill University
email: archer.yang at mcgill dot ca
Telephone: +1-514-398-4400 ext. 2793

Dr. Khaled El Emam
Professor, Faculty of Medicine, University of Ottawa.
email: kelemam@ehealthinformation.ca
Telephone: +1 6137975412