

## 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: Teaching & Research Experience

- 07/22–Now **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 **Data Analyst**, Lady Davis Institute at the Jewish General Hospital , Montreal QC  
  - Study design, analysis, and report writing.
- 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

## 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]

## Grants and Awards

- 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 Fellowship for Academic Excellence at AIMS-SA Graduation, Stellenbosch University
- 2015-2016 African Institute for Mathematical Sciences (AIMS) Postgraduate Scholarship, South Africa (\$10,000)
- June, 2015 Best graduating student, Department of Mathematics, Kwame Nkrumah University of Science and Technology, Ghana (CWA Rank: 1/140)

## 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.

Toronto, Canada.

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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 Frequent Reviewer for Several Q1 Journals:
- International Journal of Medical Informatics
  - Journal of Survey Statistics and Methodology (JSSM)
  - JMIR AI
  - JMIR Medical Informatics

## 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, Communication, Data Science, Pattern Recognition, Problem Solving, Build Relationships, Consulting, High Performance Computing (HPC), and Resolving Issues.

## References

### **Dr. Paramita Saha-Chaudhuri**

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 Department of Mathematics and Statistics, University of Vermont  
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### **Prof. Archer Yi Yang**

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 Department of Mathematics and Statistics, McGill University  
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### **Dr. Khaled El Emam**

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