Olayinka Imisioluwa Arimoro

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Medium: https://medium.com/@arimoroolayinka

Education

2024	PhD	University of Calgary	Biostatistics *Thesis:* Statistical methods for evaluating response shift in longitudinal studies *Supervisor:* Dr. Tolulope Sajobi
2024	MSc	University of Calgary	Biostatistics *(CGPA: 3.90)* *Thesis:* Unsupervised item response theory models for evaluating differential item functioning in epilepsy *Supervisors:* Drs. Tolulope Sajobi & Colin Josephson
2018	MSc	University of Lagos	Statistics *(Distinction)* *Thesis:* A statistical comparison of logistic regression and Naïve Bayes classification models using 10-fold cross-validation for hospital readmission *Supervisor:* Dr. Bridget Nkemnole
2015	BSc	University of Lagos	Mathematics and Education *(Second Class Upper Honors)* *Thesis:* Economic status of parents, a determinant on academic performance of senior secondary school students in mathematics in some selected schools in Lagos state *Supervisor:* Dr. Helen Odogwu

Honors, Awards & Scholarships
2024	University of Calgary PhD research scholarship ($35,000)
2024	First author publication award, Department of Community Health Sciences ($250)
2024	International Society for Quality of Life Research conference travel award ($2,757 USD)

2024	Finalist, student oral presentation, International Society for Quality of Life Research conference, *Tree-based item-response theory model for evaluating sample heterogeneity in patient-reported outcome measures: A web-based R Shiny implementation*
2024	Third place, student poster presentation, O'Brien Institute of Public Health innovative research event, *Mixture Item Response Theory Model for identifying differential item functioning in patients with epilepsy* ($100)
2024	University of Calgary graduate assistant (Teaching) Award ($8,894.41)
2023	University of Calgary graduate assistant (Teaching) Award ($17,788.82)
2023	Finalist, student poster presentation, International Society for Quality of Life Research conference, *Tree-based item-response theory model to test for differential item functioning in patient-reported outcomes: a simulation study*
2022-2024	University of Calgary masters research scholarship ($26,000)
2022-2024	University of Calgary international graduate tuition award ($3,060)
2022	University of Calgary MDCH program entrance award ($3,000)
2022	Tech trainer of the year (2021), Techtrend Africa
2020	Data science fellow, Information and Data Analytics Foundation (IDAF)
2019	Best graduating MSc. student, *Department of Mathematics, University of Lagos*
2019	Data Science Africa conference travel award ($200 USD)

Summary of Soft & Technical Skills

- Strong leadership, communication, and organizational skills
- Seven years of professional experience in STEM teaching and evaluation
- Five years of project experience in data analytics (data management, predictive analytics, and modeling)
- Advanced programming skills in R, MySQL, and PostgreSQL
- Intermediate programming skills in Git and GitHub, SAS, STATA, Power BI, and Python

Work Experience

A. Research Experience

2022 – Present   **Research Assistant**
Person-Centered Methods & Analytics Research Group, Department of Community Health Sciences, University of Calgary
Responsibilities: Analyze health utilities in patients with epilepsy in Alberta; develop tree-based structural equation model for assessing measurement invariance in patient-reported outcome measures; analyze results from the AcT

trial for health-related quality of life after thrombolysis in acute stroke; conduct systematic review and meta-analysis on clinical prediction in epilepsy care

B. Teaching Experience

2023 – 2024   **Teaching Assistant**
Health Data Science and Biostatistics Program, University of Calgary
DATA 621: Advanced Statistical Modeling
Number of Students: (2023 – 12; 2024 – 9); Credit Hours: 3 (Total: 204 hours)

2023   **Teaching Assistant**
Department of Community Health Sciences, University of Calgary
MDCH 610: Essentials of Biostatistics
Number of Students: 62; Credit Hours: 3 (Total: 204 hours)

2018 – 2021   **Instructor**
Bachelor of Economics, Department of Economics, college of humanities management and social sciences, Mountain Top University, Nigeria
ECO 409: Applied Statistics & **ECO 318:** Mathematical Economics II
Number of Students: (2018 – 12; 2019 – 9; 2020 – 8; 2021 – 12); Duration: 13 weeks with four contact hours per week

Professional Workshops & Short Courses Delivered

2023   **Teaching Assistant**
Patient-reported outcome measures: Psychometric Properties & Methods (Half-day workshop organized by the Economist Impact group, UK)
Number of Participants: 8

2023   **Teaching Assistant**
Introduction to R (Two-day workshop organized by the Centre for Health Informatics, University of Calgary)
Number of Participants: 9; Contact Hours: 6

2022   **Teaching Assistant**
Machine learning methods for differential item functioning in patient-reported outcomes (Half-day workshop delivered at the 29th annual conference of the International Society for Quality of Life, Prague, Czech Republic)
Number of Participants: 14

2020 – 2022	**Guided Project Instructor**
	Coursera Inc., CA, USA
	Project-based data science and management courses
	Number of courses: 39; Learners Enrollment: 100,000+

2020	**Facilitator**
	SQL for Data Analytics, Haptics Nigeria, Lagos state, Nigeria
	Number of participants:13; Contact Hours: 8

C. Professional Experience

2020 – 2021	**Statistical Analyst**
	Data Wrangling Limited, Lagos state, Nigeria
	Responsibilities: Prepared project reports and presented results to clients; developed and validated predictive models in R and Python; led a team to create and present materials on data projects and analytics strategies; implemented and deployed different machine learning and deep learning frameworks for various projects

2019 – 2020	**Data Science Fellow**
	Information and Data Analytics Foundation (IDAF), Lagos state, Nigeria
	Responsibilities: Developed and validated predictive models in R and Python; completed weekly deadlines of assignments and projects that involved data science methodologies; learned different machine learning and deep learning frameworks for various projects

Publications

Published Peer-Reviewed Manuscript (*n* = 5)

1. **Arimoro OI**, Wiebe S, Lin CQY, Josephson CB, Sajobi TT; Calgary Comprehensive Epilepsy Program. Health utilities of patients with epilepsy in a Canadian population. Epilepsia. 2024 Oct 7. doi: 10.1111/epi.18132. Epub ahead of print. PMID: 39373091.
2. **Arimoro OI**, Josephson CB, James MT, Patten SB, Wiebe S, Lix LM, Sajobi TT. Screening for depression in patients with epilepsy: same questions but different meaning to different patients. Qual Life Res. 2024 Sep 9. doi:10.1007/s11136-024-03782-1.
3. Ferro MA, **Arimoro OI**, Ayilara OF, Dhuga GK, Duncan L, Sajobi TT. Validating the Ontario Child Health Study Emotional Behavioural Scales-Brief Version (OCHS-EBS-B) in children with chronic physical illness. Child Care Health Dev. 2024;50(4):e13300. doi:10.1111/cch.13300.

4. Sajobi TT, **Arimoro OI**, Ademola A, Singh N, Bala F, Almehklafi MA, et al. Quality of life after intravenous thrombolysis for acute ischemic stroke: Results from AcT randomized controlled trial. *Stroke.* 2024;55(3):524-531. doi:10.1161/STROKEAHA.123.044690.
5. Jelinski D, **Arimoro OI**, Shukalek C, et al. Rates of 30-day revisit to the emergency department among older adults living with dementia: a systematic review and meta-analysis. *CJEM*. 2023;25(11):884-892. doi:10.1007/s43678-023-00578-z

Published Peer-Reviewed Abstracts (*n* = 7)
1. Okikiolu A, **Arimoro OI**, Singh N, Bala F, Ademola A, Almekhlafi M, Ganesh A, Buck B, Swartz R, Hill MD, Menon BK, Sajobi TT. Derivation and Validation of Utility Weights for the modified Rankin Scale from the AcT Thrombolysis Trial. Stroke. 2023;55(Suppl_1):13. doi: 10.1161/str.55.suppl_1.WP13
2. Sajobi TT, **Arimoro OI**, Sebille V, Sawatzky R, Lix LM. IRTrees: An exploratory item response theory model for evaluating response shift in patient-reported outcome measures. Quality of Life Research. 2023;32(Suppl 2):43. doi:10.1007/s11136-023-03530-x
3. Awosoga O, Lawal O, **Arimoro OI**, Santana M, Har B, Norris C, Graham M, James M, Wilton S, Sajobi TT. Measurement invariance of the hospital anxiety and depression scale in Canadian patients with coronary artery disease. Quality of Life Research. 2023;32(Suppl 2):99. doi:10.1007/s11136-023-03530-x
4. Ferro MA, **Arimoro OI**, Ayilara OF, Duncan T, Sajobi TT. Psychometric properties of the Ontario Child Health Study Emotional Behavioural Scales-Brief (OCHS-EBS-B) in children with chronic physical illness. Quality of Life Research. 2023;32(Suppl 2):216. doi:10.1007/s11136-023-03530-x
5. **Arimoro OI**, Lix LM, Patten SB, Wiebe S, Josephson CB, Sajobi TT. Tree-based item-response theory model to test for differential item functioning in patient-reported outcomes: a simulation study. Quality of Life Research. 2023;32(Suppl 2):129. doi:10.1007/s11136-023-03530-x
6. Sajobi TT, Ademola AA, **Arimoro OI**, Singh N, Bala F, Almekhlafi M, Schwartz R, Hill MD, Menon BK, et al. Health-Related quality of life of acute stroke patients: Results from the AcT trial. Stroke. 2023;54(Suppl_1):11. doi:10.1161/str.54.suppl_1.WMP11
7. Sajobi TT, **Arimoro OI**, Mayo NE, Sawatzky R, Nielsen LK, Sebille V, Juxin L, Bohm E, Awosoga OA, Norris CM, Wilton SB, James MT, Lix LM. Tree-based structural equation modelling for assessing measurement invariance in patient-reported outcome measures. Quality of Life Research. 2022;31(Suppl 2):10. doi:10.1007/s11136-022-03257-1

Peer-Reviewed Manuscript, under review (*n* = 1)
1. Sajobi TT, **Arimoro OI**, Mayo NE, Sawatzky R, Nielsen LK, Sebille V, Juxin L, Bohm E, Awosoga OA, Norris CM, Wilton SB, James MT, Lix LM. Tree-based structural equation modelling for assessing measurement invariance in patient-reported outcome measures. *PLOS One.*

Manuscript in preparation (*n* = 3)

1. **Arimoro OI**, Ademola A, Singh N, Bala F, Field TS, Almehklafi MA, et al. Evaluating differential item functioning of the EQ-5D in acute ischemic stroke: Results from the AcT Trial. *Manuscript in preparation (to be submitted to Quality of Life Research).*

2. *Sajobi TT, **Arimoro OI**, Sebille V, Sawatzky R, Lix LM. IRTrees: An exploratory item response theory model for evaluating response shift in patient-reported outcome measures. *Manuscript in preparation (to be submitted to Quality of Life Research).**

3. **Arimoro OI,** Lix LM, Patten SB, Sawatzky R, Sebille V, Liu J, Wiebe S, Josephson CB, Sajobi TT. Tree-based item-response theory model to test for differential item functioning in patient-reported outcomes: a simulation study. *Manuscript in preparation (to be submitted to Statistical Methods in Medical Research).*

Contributed Conference Presentations (* *presenter*)

A. Oral Presentation (n = 9)

1. **Arimoro OI***, Josephson CB, Ferro MA, Patten SB, Wiebe S, Lix LM, Sajobi TT. Tree-based item-response theory model for evaluating sample heterogeneity in patient-reported outcome measures: A web-based R Shiny implementation. Oral presentation at International Society for Quality of Life Research Conference, Cologne, Germany, October 2024.

2. **Arimoro OI***, Ademola A, Singh N, Bala F, Field TS, Almehklafi MA, Hill MD, Menon BK, Sajobi TT. Evaluating differential item functioning of the EQ-5D in acute ischemic stroke: Results from the AcT Trial. Oral presentation at International Society for Quality of Life Research Conference, Cologne, Germany, October 2024.

3. Sajobi TT, **Arimoro OI***, Sebille V, Sawatzky R, Lix LM. IRTrees: An exploratory item response theory model for evaluating response shift in patient-reported outcome measures. Oral presentation at International Society for Quality of Life Research Conference, Calgary, Alberta, Canada, October 2023

4. Awosoga O*, Lawal O, **Arimoro OI**, Santana M, Har B, Norris C, Graham M, James M, Wilton S, Sajobi TT. Measurement invariance of the hospital anxiety and depression scale in Canadian patients with coronary artery disease. Oral presentation at International Society for Quality of Life Research Conference, Calgary, Alberta, Canada, October 2023

5. **Arimoro OI***. Depression in epilepsy: Same questions, different meanings. Oral presentation at the University of Calgary's Graduate Research Peer Beyond Conference, Taylor Institute, University of Calgary, Canada, February 2023

6. **Arimoro OI*,** Josephson CB, Patten SB, Wiebe S, Lix LM, Sajobi TT. Depression in epilepsy: Same questions, but different meanings to different people. Oral presentation at the Canadian Black Scientists Network BE-STEMM Virtual Conference, February 2023

7. **Arimoro OI*,** Josephson CB, Patten SB, Wiebe S, Lix LM, Sajobi TT. Tree-based item-response theory model for evaluating differential item functioning in patient-reported outcomes. Oral

presentation at the annual International Conference on Health Policy Statistics, Scottsdale, Arizona, USA, January 2023

8. Sajobi TT*, **Arimoro OI**, Mayo NE, Sawatzky R, Nielsen LK, Sebille V, Juxin L, Bohm E, Awosoga OA, Norris CM, Wilton SB, James MT, Lix LM. Tree-based structural equation modelling for assessing measurement invariance in patient-reported outcome measures. Oral presentation at the annual conference of the International Society for Quality of Life Research, Prague, Czech Republic, October 2022

9. **Arimoro OI***, Lin QY C, Wang M, Josephson CB, Wiebe S, Sajobi TT. Health Utilities in Patients with Epilepsy in Alberta. Oral presentation at the annual Calgary Comprehensive Epilepsy Program Research/Hotchkiss Brain Institute retreat, University of Calgary, Canada, October 2022

B. Poster Presentation (n = 7)

1. **Arimoro OI***, Josephson CB, Patten SB, Wiebe S, Lix LM, Sajobi TT. Mixture Item Response Theory Model for identifying differential item functioning in patients with epilepsy. Poster presentation at the O'Brien Institute of Public Health Innovative Research Event, HRIC Atrium, Cumming School of Medicine, University of Calgary, Canada, April 2024

2. Okikiolu A*, **Arimoro OI**, Singh N, Bala F, Ademola A, Almekhlafi M, Ganesh A, Buck B, Swartz R, Hill MD, Menon BK, Sajobi TT. Derivation and Validation of Utility Weights for the modified Rankin Scale from the AcT Thrombolysis Trial. Poster presentation at the annual International Stroke Conference, Phoenix, Arizona, USA, February 2024

3. Ferro MA*, **Arimoro OI**, Ayilara OF, Duncan T, Sajobi TT. Psychometric properties of the Ontario Child Health Study Emotional Behavioural Scales-Brief (OCHS-EBS-B) in children with chronic physical illness. Poster presentation at International Society for Quality of Life Research Conference, Calgary, Alberta, Canada, October 2023

4. **Arimoro OI***, Lix LM, Patten SB, Wiebe S, Josephson CB, Sajobi TT. Tree-based item-response theory model to test for differential item functioning in patient-reported outcomes: a simulation study. Poster presentation at International Society for Quality of Life Research Conference, Calgary, Alberta, Canada, October 2023

5. **Arimoro OI***, Josephson CB, Patten SB, Wiebe S, Lix LM, Sajobi TT. Mixture Item Response Theory Model for identifying differential item functioning in patients with epilepsy. Poster presentation at the Canadian Society for Epidemiology and Biostatistics Conference, Halifax, Nova Scotia, Canada, June 2023

6. Sajobi TT, Ademola AA*, **Arimoro OI**, Singh N, Bala F, Almekhlafi M, Schwartz R, Hill MD, Menon BK, AcT Trial Investigators. Quality of life outcomes in acute stroke trials: Same questions, but different meaning to different patients. Poster presentation at the Society for Clinical Trials Conference, Baltimore, Maryland, USA, May 2023

7. Sajobi TT*, Ademola AA, **Arimoro OI**, Singh N, Bala F, Almekhlafi M, Schwartz R, Hill MD, Menon BK, AcT Trial Investigators. Health-Related quality of life of acute stroke patients: Results from

the AcT trial. Poster presentation at the annual European Stroke Organisation Conference, Munich, Germany, May 2023

C. Invited Presentation (n = 2)
1. **Arimoro OI*.** Logistic Regression. Invited guest lecture delivered during the MDCH 610: Essentials of Biostatistics course, November 2023
2. **Arimoro OI*.** AI-Empowered solutions for quality assessment and control in healthcare delivery. Invited oral presentation at Open Data Science, Lagos Nigeria Meetup, June 2020

Unpublished Research/Scientific Reports (*n* = 3)

1. Anwunah SJ, **Arimoro OI**, Adaramola O, Medeiros T. System for health improvement measures: a case study of evaluating patients experience in lagoon hospitals [Fellowship Capstone Project]. Lagos (NG): Information and Data Analytics Foundation; 2020
2. **Arimoro OI**, Nkemnole B. A statistical comparison of logistic regression and Naïve Bayes classification models using 10-fold cross-validation for hospital readmission [master's thesis]. Lagos (NG): University of Lagos; 2019
3. **Arimoro OI**, Odogwu H. Economic status of parents, a determinant on academic performance of senior secondary school students in Mathematics in some selected schools in Lagos State [Undergraduate thesis]. Lagos (NG): University of Lagos; 2015

Memberships
• International Society for Quality of Life Research
• Canadian Black Scientists Network BE-STEMM
• Canadian Society for Epidemiology and Biostatistics

Journal Peer Reviewer
2024   Quality of Life Research. *Completed Assignment: 1*
2024   Journal of the American Heart Association. *Completed Assignment: 1*

Selected Professional Development Courses
• Qualitative research: "Tips, tricks, and pitfalls" of common methodologies used in health-related quality of life research & PRO measurement, *conference workshop at the International Society for Quality of Life Research Conference, 2024*
• Structural equation modeling with health data, *conference workshop at the International Conference on Health Policy Statistics, 2023*
• Statistical methods for electronic health record data, *conference workshop at the International Conference on Health Policy Statistics, 2023*
• Analysis of complex health survey data, *conference workshop at the International Conference on Health Policy Statistics, 2023*
• TI 0923 - 005 Classroom Management Strategies for TAs, *Taylor Institute, University of Calgary, 2022*

- TI 0943 - 001 Providing Feedback to Students, *Taylor Institute, University of Calgary, 2022*
- TI 0923 - 006 Student Assessment and Feedback Strategies for TAs, *Taylor Institute, University of Calgary, 2022*
- Amazon Web Services Machine Learning Specialty Certification, *Amazon Web Services, 2020 – 2023*
- Amazon Web Services Cloud Practitioner, *Amazon Web Services, 2020 – 2023*
- AI for medicine specialization, *deeplearning.ai (Coursera), 2020*
- Fundamentals of statistics, *Massachusetts Institute of Technology (edX), 2020*
- Probability: The science of uncertainty and data, *Massachusetts Institute of Technology (edX), 2020*
- Biostatistics in public health specialization, *Johns Hopkins University, (Coursera), 2018*
- Statistical analysis with R for public health specialization, *Imperial College London, (Coursera), 2018*
- Best practices for biomedical research data management, *Harvard Medical School and NIH Big Data to Knowledge, (Canvas Network), 2018*

Selected Leadership and Volunteer Experience
Department/University

- Co-chair, department of Community of Health Sciences Students' Executive (CHSSE), *University of Calgary, 2023 – 2024*
- Student member, the search committee inclusive excellence cluster hiring initiative, *Cumming School of Medicine, University of Calgary, 2023*
- First-year representative, department of Community of Health Sciences Students' Executive (CHSSE), *University of Calgary, 2022 – 2023*
- Graduate student representative, department of Mathematics (Statistics Option), *University of Lagos, 2018 – 2020*

National

- Facilitator of free online classes on introduction to data science, statistics, R and SQL, *2018 – 2020*

International

- Abstract reviewer, *International Society for Quality of Life Research Conference, 2024*
- Data science mentor, *Data Scientists Network, 2020 – 2021*
- Lead strategist and visioner of a nonprofit organization, *Predicare Steun Academy, 2018 – Present*