Amos Ochieng Okutse

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EDUCATION

Brown University, Providence, Rhode Island, RI, USA

ScM. in Biostatistics — Sep 2021 – Present

Jomo Kenyatta University of Agriculture & Technology, Juja, Nairobi, Kenya

BSc. in Biostatistics — Sep 2016 – Apr 2021
[First Class Honours]

Butula Boys High School, Butula, Busia, Kenya

Kenya Certificate of Secondary Education (KCSE) — Feb 2012 – Nov 2015
Grade: B+ (plus)

Butula Boys Primary School, Butula, Busia, Kenya

Kenya Certificate of Primary Education (KCSE) — Jan 2010 – Dec 2011
Cumulative Score: 346 / 500

TECHNICAL SKILLS

R Programming, Microsoft Word, Microsoft Excel, Microsoft PowerPoint, SAS™ Base Programming, Statistical Package for Social Sciences (SPSS), Basic Database Management (MySQL), LaTeX Document Typesetting, WinBUGS, Stata, GeoDa.

RESEARCH EXPERIENCE

Kenya Agricultural & Livestock Research Organization, Non-ruminant Research Institute, Kakamega, Kenya

Research and Data Intern, Biometry Department — May 2019 – Jul 2019

- Designed and analyzed sample surveys, successfully interpreting the findings to draw conclusions for managerial action and strategy
- Performed the analysis of variance using Statistical Analysis System (SAS) to explore the resistance of different bean species to bacterial blight
- Performed sample size calculations and collected data using questionnaires on the performance of the 2019 Kenya Agricultural Show
- Carried out comprehensive literature reviews to identify gaps in the fund of knowledge and evaluated research problems
- Designed and analyzed experiments employing statistical techniques for hypothesis testing to validate data and draw relevant interpretations
- Presented data analysis findings and conclusions to the management to improve strategies and operations
- Utilized IBM SPSS, R, and SAS to analyze data using appropriate statistical and machine learning models
- Used advanced Microsoft Excel to perform data explorations and analytics

PUBLICATIONS

PEER-REVIEWED JOURNALS

[1] **Okutse, A. O.**, & Nyongesa, K. W. (2021). Differential Expression Analysis for the Identification of Survival Associated Genes in Primary Bladder Cancer using Micro-array Data. *International Journal of Undergraduate Research and Creative Activities*, *13*(1). https://doi.org/10.7710/2168-0620.0306

[2] **Okutse, A. O.** (2020). Impact of Sleeping Duration on the Risk of Breast Cancer: A Systematic Review and Meta-Analysis of Population-Based Cohort Studies. *Reinvention: An International Journal of Undergraduate Research*, *13*(1). https://doi.org/10.31273/reinvention.v13i1.530

UNDER REVIEW/PREPARATION

[3] **Okutse, A. O.**, & Athiany, H. (2021). Trends of Socioeconomic Disparities in the Kenyan Child Malnutrition Statistics: Analysis of the Demographic and Health Survey, 2003-2014.
Anticipated publication in *PLOS ONE*.

[4] **Okutse, A. O.**, & Murage, C. M. (2021). Modeling the Indirect Impact of COVID-19 Policies on HIV/AIDS Infection Rates in Kenya.
[Under Preparation]

UNDERGRADUATE RESEARCH PROJECT

[5] **Okutse, A. O.**, Murage, C. M., Okado, E. A., & Irungu, D. K. (2020). An Ensemble-based Machine Learning Decision Framework for Patient Classification.
Supervisor: Dr. Jane Aduda, Ph.D.

PREPRINTS & OTHER PUBLICATIONS

[6] **Okutse, A. O.** (2019). Statistical Analysis of Non-Pair Matched Contingency Table Data: A Non-Technical Primer. A Preprint. https://10.13140/RG.2.2.13786.90561

[7] **Okutse, A. O.** (2019). A Naïve Bayes' Probabilistic Classifier for Modeling the Quality of Care in a Healthcare Setting. GRIN Verlag. ISBN: 978-3-346-14278-8.
https://m.grin.com/document/535799

CONFERENCES

[8] **Okutse, A. O.**, and Athiany, H., "Trends of Socioeconomic Disparities in the Kenyan Child Malnutrition Statistics: Analysis of the Demographic and Health Survey, 2003-2014," in *Proceedings of the Sub-Saharan Africa Network (SUSAN) of the International Biometrics Society*, Nairobi, Kenya, Sep 2021.

ACADEMIC PROJECTS

Critical Review, Research Methodology Course, Apr 2019
The effects of body weight loss and gain on arterial hypertension control: a prospective observational study. A Critical Review.

Carried out an in-depth literature review to identify the fund of knowledge on the effect of body weight loss and gain on arteriole hypertension control, identified a relevant peer-reviewed research articles, critically evaluated and appraised the selected piece of literature.

Machine Learning and Predictive Modeling, Regression Modeling, Aug 2019
A Naïve Baye's Probabilistic Classifier for Modeling the Quality of Care

Identified the research problem of interest and developed the methodology to address it, conducted a comprehensive review of literature, data acquisition, data preprocessing, exploratory analysis, applied the naïve Bayes classification algorithm to model the quality of care, evaluated model performance using confusion matrices, accuracy, sensitivity and specificity values; report writing and result presentation.

Predictive Modeling, Multivariate Methods Course, Oct 2019
The Association Between Student Sleeping Duration and Grade Point Average Scores (GPA)

Modeled the effect of different student sleeping duration(s) and their association with Grade Point Averages, estimated the effect using correlation analysis and multiple linear regression.

AWARDS & SCHOLARSHIPS

- NAMBARI, Moi Brown Partnership for Biostatistics Training , Brown University Aug 2021
  Awarded the 2021 NAMBARI Moi-Brown University Partnership for Biostatistics Training Scholarship to study Master of Science in Biostatistics at Brown University.
- Brown University, Department of Biostatistics Tuition Scholarship Aug 2021
  Awarded the Department of Biostatistics tuition scholarship for the academic year 2021/2022.
- 3rd Runners-up,
  First Jomo Kenyatta University & Kenya Authority for Parking Services (KAPS) Hatch-hack Hackathon, Jomo Kenyatta University of Agriculture & Technology Nov 2019
  For developing a dynamic and interactive web-based patient classification application portal using ensemble-based machine learning (ML) methods.

PROFESSIONAL AFFILIATIONS & ACTIVITIES

Kenya National Statistical Society (KNSS),
Nairobi Region, Nairobi, Kenya
Member 2021 – Present

International Biometric Society (IBS),
Kenya Chapter, Nairobi, Kenya
Member 2021 – Present

CAMPUS ACTIVITIES

Jomo Kenyatta University Biostatistics Students Association, Jomo Kenyatta University of Agriculture & Technology
Member Jan 2017 – Nov 2020

Jomo Kenyatta University Students Association, Jomo Kenyatta University of Agriculture & Technology
Member Aug 2016 – Nov 2020

Jomo Kenyatta University Alumni Students Association, Jomo Kenyatta University of Agriculture & Technology

Member May 2021 – Present

LEADERSHIP

Jomo Kenyatta University & KAPS Hatch-hack Hackathon, Juja, Kenya 2019

Project Team Leader

Outline

Managed a team of three (3) individuals who emerged fourth runners-up in the 1st JKUAT & KAPS Hackathon held at the university in 2019.

Key Responsibilities

- Empowered the project team members towards leveraging the power of statistical modeling and machine learning algorithms in developing a robust, interactive, and dynamic online application portal for predictive analytics in healthcare.
- Oversaw the project design, conceptualization, and evaluation, and collaborated with the project team members to enhance seamless project execution.
- Communicated project details and mentorship advice from the research project advisor to enhance accurate and precise interpretation of the key project deliverables.

WORKSHOPS & CERTIFICATIONS

Jomo Kenyatta University of Agriculture & Technology, Department of Statistics & Actuarial Sciences, SAJOREC-JKUAT, Kenya Feb 2021 – Feb 2021

Attended and completed the workshop:

Introduction to Statistical Genetics: *Theory & Practice* held at JKUAT-SAJOREC, Department of Statistics and Actuarial Sciences, School of Mathematical Sciences

Facilitator: Prof. Dr. Bernard Omolo, University of South Carolina-Upstate, USA.

[*Amos Ochieng Okutse, BSc (Hons)*]