

Adolphus Wagala, PhD

Bomet University College,
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Curriculum Vitae

Education

- March 2018 **PhD. in Probability and Statistics**, *Centro de Investigación en Matemáticas, AC*, Guanajuato, Gto, México.
Thesis Title: Problems in Statistical Genetics: Classification and Testing for Network Changes. <http://cimat.repositorioinstitucional.mx/jspui/handle/1008/727>
Supervisors Dr. Graciela González Farías, PhD & Prof. Terence Paul Speed, PhD.
- Dec. 2008 **Master of Science in Statistics**, *Egerton University*, Njoro, Kenya.
Thesis Title: Efficiency Evaluation in Modelling of Stock Data using ARCH and bilinear Models.
Supervisors Prof. Dankit Nassiuma, PhD & Prof. Ali Islam, PhD.
- July 2004 **B.Ed.Science (Honors). Double Mathematics**, *Egerton University*, Njoro, Kenya, Graduated with Second Class Honors, Upper Division.
- 1996 **Kenya Certificate of Secondary Education (KCSE)**, *Ngere High School*, Kisumu, Kenya, Scored a mean grade of B+.
- 1992 **Kenya Certificate of Primary Education (KCPE)**, *Nyong'ong'a Primary School*, Kisumu, Kenya, Scored 457 out of 700.

Short Courses and Non-Degree Trainings

- 16 -20 Sept 2019 **Spatial Data Modelling: Theory and Practice**, *Karatina University*, Karatina, Kenya.
- 20 June 2017 **Utilising STRING App for Cytoscape-** by Lars Juhl Jensen, *The University of Melbourne*, Melbourne, Australia.
- Jul.2016- Jul.2017 **Visiting Scientist/visiting PhD candidate at the Speed Lab, Bioinformatics Division**, *The Walter and Eliza Hall Institute of Medical Research*, Melbourne, Australia., Main project: Statistical methods for integrating molecular data to find new diagnostic markers for acute rheumatic fever (ARF).
- 12-14 Nov. 2015 **Statistics in Environmental Research (Bath, UNAM and CIMAT (BUC) Workshop Series) I.**, *CIMAT, Guanajuato, Gto, México*, When populations and hazards collide: modelling exposures and health risk.
- 6-17 July 2015 **Summer Institute in Statistics for Big Data (SISBID)**, *University of Washington*, Seattle, W.A, USA., the following modules were taken: Accessing Biomedical Big Data: Visualization of Biomedical Big Data: Supervised Methods for Statistical Machine Learning: Supervised Methods for Statistical Machine Learning: Unsupervised Methods for Statistical Machine Learning..
- 9-11 Jun 2015 **A Short Course of Big Data & Machine Learning**, *Centro de Investigación en Matemáticas*, AC, Guanajuato, Gto, México.
- Jan- July 2013 **Spanish Language and Mexican Culture**, *Universidad Nacional Autónoma de México, CEPE*, Taxco, Gro, México.

Work Experience

Sept. 2020 – **Senior Lecturer & Head of Department: Mathematics & Computer Science,**
to date BOMET UNIVERSITY COLLEGE, Bomet, Kenya.

My responsibilities include:

- Teaching Mathematics and Statistics to undergraduate, Masters and PhD students
- Research, consultancy and data analysis.
- Member of the Master Time Table Committee.
- Supervision, examination and evaluation of students.
- Duty allocation to the staff of the Department of Mathematics & Computer Science.
- Supervision of the teaching and learning process.
- Preparation of the departmental Workplan, Procurement Plan and Budget.

March. 2016 **Data Scientist & Consultant (part time),** PROO LABS, Nairobi, Kenya.

– March 2018 My general responsibilities include: data collection, analysis, evaluation and modelling. I work with other team members in building an appropriate analytics framework for different problems being solved. I majorly use the **R** and **Python**, SPSS among others in my analysis depending on the task at hand.

Sept. 2012 – **Lecturer,** CHUKA UNIVERSITY, Chuka, Kenya.

Oct 2020 My responsibilities included:

- Teaching Mathematics and Statistics to undergraduate, Masters and PhD students
- Research, consultancy and data analysis to the postgraduate students
- Supervision and examination of students

July **Assistant Lecturer,** CHUKA UNIVERSITY, Chuka, Kenya.

2009–August My responsibilities included:

- 2012
- Teaching Mathematics and Statistics to undergraduate and Diploma Students
 - Research and consultancy to the postgraduate students
 - Supervision and examination of students

Research Projects Participated

Aug.2013- **CIMAT, Guanajuato, Gto. Mexico** , *Proyecto Ciencia Basica: Métodos estadísticos para analizar datos de moleculares como genómicas* , (Basic Science Project: Statistical Methods for Analyzing Molecular data like the Genomics Data).

Jul.2016- **The Walter and Eliza Hall Institute of Medical Research, Melbourne, Australia** , *Statistical methods for integrating molecular data to find new diagnostic markers for acute rheumatic fever* .

March.2016- **The Proo Labs, Nairobi, Kenya** , *The health predictive analysis framework*, In this project, I was the lead data scientist for building health predictive analysis framework. We got data on insurance claims for a health insurance provider and built a model for detecting fraudulent claims based on their 3 year historical claims. The built model has helped the company from losing upwards of Kshs. 200 million (approx. US \$2 million) annually to fraudulent claims..

Postgraduate Students Supervision-PhD

- 2021 MICHAEL OTIENO ODUOR, Topic to be decided but the general area is the SPATIAL TEMPORAL DATA ANALYSIS. *PhD(Biostatistics), Moi University, Eldoret., Proposal development stage.*

Postgraduate Students Supervision-Masters

- 2020 ONESMUS MBUKO TITUS, Modelling Of Foreign Exchange Volatility and it's Effects on International Trade in Kenya. *Msc (Economics), Chuka University, Has defended the proposal at the Faculty Level.*
- 2020 KIMUTAI KOECH EMMANUEL, Singular Spectrum Analysis:An Application to Kenyas Industrial Input Price Index. *Msc (Applied Statistics), Chuka University, work in progress.*
- 2020 WANJUKI TEDDY MUTUGI, SARIMA models: Review and Application to Kenyan Commodity Price Index. *Msc (Applied Statistics), Chuka University, work in progress.*
- 2020 JUMA SAMWEL KISIANG'ANI, Queuing Theory and it's Application to Modelling of Waiting Time: A Co-operative Bank of Kenya,Chuka Branch. *Msc (Applied Statistics), Chuka University, work in progress.*
- 2019 LEONARD KIMTAI MASAI, Application of Response Surface Methodology in Modelling and Optimization of the Yields of Common Beans (*Phaseolus vulgaris L.*) using Animal Organic Manures. *Msc (Applied Statistics), Chuka University, **Graduated in October 2019.***
- 2015 CAROLINE M. NTHIIRI, Competitive Strategic Responses to the Threat of New Entrants by Universities in Meru region, Kenya . *Co-supervised, **graduated in 2015.***
- 2014 NAOMI, WACUKA, Impact of Performance Contract Strategy on Service Delivery. A case of Chuka Municipal council. *MBA, Chuka University, **Graduated in 2014.***
- 2012 MERCY K. KIREMU, Market Reactions to Earnings Announcement: An Empirical Evidence From the Nairobi Securities Exchange. *MBA, Chuka University, **Graduated in 2012.***
- 2011 PAUL N. THIGA, Financial Management Challenges Affecting Implementation Of The Economic Stimulus Programme In Embu County, Kenya. *MBA, Chuka University, **Graduated in 2011.***

Other Services to the University

- 2018-to date **A Member the Chuka University Surveys Committee, Chuka University College, Chuka, Kenya.**
- 2009-2013 **A Member of the Chuka University College Inspection and Acceptance Committee , Chuka University College, Chuka, Kenya.**
- 2010-2013 **A Member of the Automation Policy Committe for Chuka University College , Chuka University College, Chuka, Kenya.**
- 2009-2013 **A Member of the Chuka University College Disposal Committee , Chuka University College, Chuka, Kenya.**
- 2012 **Secretary of the Chuka University College Evaluation of Intervention Programmes for Staff Committee , Chuka University College, Chuka, Kenya.**

- 2012 **Internal Auditor for the Chuka University College ISO QMS** , *Chuka University College*, Chuka, Kenya.
- 2012 **Committee Member to carry out Self-Assessment of Bachelor of Commerce Programme**, *Chuka University College*, Chuka, Kenya.

Research, Seminars & Conferences

Research Interests

My research interests are diverse and very flexible in both theoretical and Applied Statistics. In general, they involve both theoretical and applied statistics in different fields. Some of the areas of interest include:

- The Big Data analytics (High Dimensional-Low Sample Size Data Analysis, Statistical Learning Algorithms and Data Mining).
- Topological data analysis (Functional data analysis and Network Analysis).
- Multivariate Statistical Analysis.
- Statistical Inference (Frequentist and Bayesian)
- Generalized Linear Models
- Bayesian Inference
- Small Area Estimation

Publications in preparation

- 2021 **A. Wagala**, and H. Kimathi, Network Analysis of the Nairobi Securities Exchange. *In Preparation*, .

Selected Publications

- 2020 **A. Wagala**, G. González-Farías, R. Ramos and O. Dalmau , PLS Generalized Linear Regression and Kernel Multilogit Algorithm (KMA) for Microarray Data Classification. *Revista Colombiana de Estadística-Sección aplicada*, Vol. 43, Issue 2, pages 1-17.
- 2020 **A. Wagala**, A Likelihood ratio test for correlated paired multivariate samples. *Chilean Journal of Statistics*. Vol. 11, No.1, pages 41-51.
- 2019 **A. Wagala**, Anomalies Detection Using the Benford's Law: Application to the Kenyan Presidential Elections of 2017. *Journal of Mathematical Theory and Modeling*, Vol. 9, No.9, pages 12-23, ISSN (Paper)2224-5804 ISSN (Online)2225-0522..
- 2016 Nyongesa, D & **Wagala, A**, Non Linear Time Series Modelling Of the Diesel Prices in Kenya *International Journal of Academic Research in Economics and Management Sciences* Vol. 5 No. 2,pages 105-125.
- 2013 Kiremu, M.K.G., Galo, N.,**Wagala, A** and Mutegi., J.K, Price and Volumes Reaction to Annual Earnings Announcement: A Case of the Nairobi Securities Exchange. *International Journal of Business, Humanities and Technology* Vol. 3 No. 2,pages 100-111.
- 2012 **Wagala, A.**, Ali, S. I and Nassiuma, D.K , Efficiency Evaluation When Modelling Nairobi Security Exchange Data Using Bilinear and Bilinear-Garch (BI-Garch) Models. *International Journal of Applied Science and Technology*,Vol. 2. No. 6, pages 37-48.
- 2012 **Wagala. A.**, Nassiuma, D.K, Ali, S. I and Mwangi, J. W, Volatility Modelling Of The Weekly Returns Of The Nairobi Securities Exchange Using The ARCH-Type Models. *International Journal of Applied Science and Technology*, Vol. 2. No. 3, pages 165-174.

2012 Thiga, N.P, Masinde, S.M, **Wagala, A**, Galo, M.N And Kathuni, K.L. , Financial Planning Challenges Affecting Implementation of the Economic Stimulus Programme in Embu County,Kenya.. *International Journal of Research in Commerce, IT and Management, Vol.No.2 Issue No.10, pages 15-21.*

Conferences,Seminars and Workshops Attended

- June 2-3, 2016 **University of Arizona / CIMAT First Workshop on Interdisciplinary Statistics**, Presented a paper: *PLS generalized linear regression: Alternative methodology for applications in classification of microarray data* , CIMAT, Guanajuato, Mexico.
- March 12-15,2014 **XII Escuela de Probabilidad y Estadística**, CIMAT,AC, Guanajuato, Gto, Mexico.
- Nov 18-22,2013 **XI Symposium in Probability and Stochastics Processes**, CIMAT,AC, Guanajuato, Gto, Mexico.
- Sep 18-20,2013 **International Workshop on Multivariate Analysis and Random Matrices: New Tendencies**, CIMAT,AC, Guanajuato, Gto, Mexico.
- 12th Oct-14th Oct 2011 **1st Annual International Research Conference**, *Kabarak University*, Nakuru, Kenya, Presented a paper on "Volatility Modelling of Nairobi Stock Market Data using GARCH models".
- 24th June 2011 **FUNDABLE PROPOSAL TRAINING** , *Chuka University*, Chuka, Kenya.
- 4th-5th May 2011 **PEDAGOGY & ACADEMIC ADVISING** , *Chuka University*, Chuka, Kenya.
- 25Th Feb 2009 **Faculty of Science Annual Conference**, *Egerton University*, Njoro, Kenya, Presented a paper; Wagala. A (2009). Efficiency Evaluation in Modelling Stock Data using Bilinear-GARCH models.

Scholarships and Funding

- 1999-2003 Higher Education Loans Board (HELB), Kenya : Undergraduate studies
- January 2013 - July 2014 Mexican Government Scholarship for Foreigners (SRE)
- July 2015 Scholarship by University of Washington, Seattle, W.A, USA
- Aug.2014- July 2017 CONACyT

Computer skills

- Stat Softwares R, Rmarkdown, PYTHON, SPSS, STATA & Advanced Ms Excel
- Word Processing \LaTeX , Ms Office, Libre Office
- Presentation Beamer, Ms Power point
- Operating Systems Windows, Linux/Ubuntu, macOS

Professional Memberships

- 2012– todate Kenya National Statistical Society (KNSS)
- 2015–today The International Biometric Society (IBS)

Languages

English	Fluent (speaking, reading, writing)	
Spanish	Intermediate	<i>Con conversationally fluent</i>
Kiswahili	Fluent	<i>(speaking, reading, writing)</i>

Hobbies

- Jogging
- Cite seeing
- Working out
- Chess

Referees

- Dr. Graciela González Farías, PhD
Professor & Researcher
CIMAT , AC
Jalisco s/n, Mineral de Valenciana
36240
Guanajuato, Gto. México
- Prof. Dankit K. Nassiuma, PhD
Vice Chancellor ,
& Professor of Statistics,
Africa International University
P.O Box 24686-00502
Nairobi-Kenya
- Prof. Bernard Omolo, PhD
Professor, Div. of Mathematics & Computer Science
University of South Carolina-Upstate
<http://faculty.usupstate.edu/bomolo/>