


# Academic Staff Profile

## Personal Profile

### Personal Details

<p><b>Name:</b> Ananda Omutokoh Kube <b>Title/Qualification:</b> Dr. <b>Department:</b> Mathematics and Actuarial Science <b>Designation/Position:</b> Lecturer <b>Email:</b> kube.ananda@ku.ac.ke <b>Contact Address:</b> 43844 00100 c/o Mathematics and Actuarial Science</p> <p><b>Area of Specialization:</b></p> <ul style="list-style-type: none"><li>-Financial Econometrics</li><li>-Computational Statistics</li><li>-Time Series Analysis</li><li>-Financial Risk Analysis</li></ul> <p><b>Research Interests:</b></p> <ul style="list-style-type: none"><li>- Financial markets &amp; derivatives (Volatility Analysis)</li><li>- Probability &amp; Stochastic processes</li></ul> <p>Google Scholar: <a href="https://scholar.google.com/citations?user=eClzSYoAAAAJ&amp;hl=en&amp;oi=ao">https://scholar.google.com/citations?user=eClzSYoAAAAJ&amp;hl=en&amp;oi=ao</a></p> <p><b>ORCID ID:</b> <a href="https://orcid.org/0000-0002-9947-7954">https://orcid.org/0000-0002-9947-7954</a></p>	
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## Academic & Professional Qualifications

### Jan 2011 – July 2014

Department of Mathematics, School of Pure and Applied Sciences

Kenyatta University

**Qualification:** PhD in Statistics

**PhD Title:** *Quantile Autoregression and its application to Financial Risk Management and Portfolio Optimization* Supported by NACOSTI

### Sept 2007 – Dec 2009

Department of Statistics and Actuarial Sciences, School of Mathematics

Jomo Kenyatta University of Agriculture and Technology (JKUAT)

**Qualification:** Masters of Applied Statistics

### Jan 2002 – Dec 2006

Department of Statistics,

Maseno University

**Qualification:** BSc. Applied Statistics

## Employment History

### July 2014 to Current

**Employer:** Kenyatta University

**Position:** Lecturer, Department of Statistics and Actuarial Sciences

**Duties:** Lecturing undergraduate, master and supervision of MSc. Research and PhD students in area of Statistics and its applications. Students' academic advisor (Actuarial Science group), curriculum development, and any other duties assigned by the University. Initiating and conducting fundable research projects.

### Jan 2011 - July 2014

**Employer:** Kenyatta University

**Position:** Tutorial Fellow

**Duties:** Lecturing and handling tutorials in Statistics and Actuarial Sciences area with the undergraduate students. Research and studies towards PhD in the discipline of applied Statistics

### Other positions:

### May 2015 up to date

**Examination Coordinator,** Department of Statistics and Actuarial sciences

**Duties:**

- Coordinating examination process in the department
- Ensuring that the examinations are set and processed in time
- Liaising with Examination coordinator from the School of Pure and Applied Sciences and University Examination's office on Examination related issues
- Ensuring proper safe keeping of all examination records within the Department

## September 2013 up to date

Coordinator for BSc. Actuarial Science degree program, Kenyatta University

### **Duties:**

Coordinating the teaching of the programme, drawing up the evaluation schedules for the programme, coordinating the moderation of draft examinations and consolidating all marks for examinations to be discussed by Board of Examiners

## Jan 2007 to Dec 2008

### **GIS and Remote sensing expert**

Regional Centre for Mapping of Resources for Development

Main duties included

- Image processing
- GIS and database management
- Cartography
- Data collection and archiving
- Research and reports writing and presentation

## **Publications**

### **Referred Journals**

- 1.) Dereje B., **Ananda O. K.** and Ikpe D., *Optimal Portfolio of investors under Inefficiencies in Jump Market.* (2018), Journal of Mathematical Finance. ISSN Online: 2162-2442, Vol 8, pp 562 - 575
- 2.) Kemboi, G. K. K., **Ananda, O. K.**, Mutua M. J., and Muriithi F. D. *Regularized Nonlinear Trimmed Squares Estimator in the presence of Multicollinearity and outliers.* American Journal of Theoretical and Applied Statistics. Vol 7, issue 4 (2018), pp 156 - 162
- 3.) Teferi D. W., Ngare P. and **Kube A. O.** *Pricing floating strike look-back put option under Heston stochastic volatility,* Global Journal of Mathematical Sciences: Theory and Practical. ISSN 0974-3200 Volume 9, Number 3 (2017), pp. 427-439 (2017)
- 4.) Hategekimana N., Ikpe D. and **Kube A.**, *Pricing collateralized deals under BSDE approach. (Submitted for publication).*
- 5.) **Kube, A. O.** and Odongo, L. O. *Asymptotic properties of inter-quantile autoregressive conditional range volatility estimator* submitted (2018)
- 6.) **Kube, A. O.** *Asymptotic expansion and inherent properties of an inter-quantile volatility estimator* submitted (2018)

- 7.) **Kube, A. O.** and Odongo, L. O., Mwita, P. N. Conditional CAPM in Financial Risk Management: A Quantile Autoregression approach. *Institute of Mathematical Sciences (IMS)*, 2012
- 8.) **Kube, A. O.**, Kihoro, J. M. and Mwita, P. N. Artificial Neural Networks and Exchange Rates. *Proceedings of 2009 Scientific Conference "Physical and Biological Sciences for Industrial and Socio-Economic Development"* 5th – 6th May 2009.

## Books and Books Chapters

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## Conference/Workshops/Seminar Papers

### Conference Papers

- Strathmore Mathematics Conference, 2012. Presented paper *Conditional CAPM in Financial Risk Management: A Quantile Autoregression approach*
- First Kenyatta University International Mathematics Conference, 2011, Kenyatta University Conference Centre, Nairobi, Kenya, June 8-10, 2011 [www.ku.ac.ke/mathconference/images/.../maths\\_conference\\_2011.pdf](http://www.ku.ac.ke/mathconference/images/.../maths_conference_2011.pdf) Paper presented: *Quantile auto regressions and financial risks, 2011*
- *Regional Congress of Actuaries in Africa*, Crowne Plaza Hotel, Nairobi-Kenya, November 2-4, 2011
- *Watershed management for the East Africa regions* Dar es Salaam University, 2011
- *Watershed management for the East Africa regions* Makerere University, 2010

## Research

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## Funded Projects

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## Conferenced/Workshops/Seminars Attended

### Conferences Attended

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### Workshops Attended

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## Seminars Attended

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## Supervision of Postgraduate Students

### Current Research Supervision

- i.) **Thesis title:** *Pricing Barrier Options under heavy tailed distributions* Msc, Mathematics, (Financial option), Pan African University (on-going)

**Student Name:** George Korir Kiprop

- ii.) **Thesis title:** *Pricing derivatives under collateralization* PhD Mathematics, (Finance Option), Pan African University (On-going)

**Student Name:** Nathanael Hategegimana

- iii.) **Thesis title:** *Extreme Quantiles of Survival and Hazard functions for Chronic epidemics* PhD, Department of Statistics and Actuarial Science, Kenyatta University (began 2016)

**Student Name:** David Mwirigi Mbae

- iv.) **Thesis title:** *Frequentist Likelihood Based approach and Bayesian inference to zero-inflated ordered categorical time series with applications.* Ph.D., Department of Statistics and Actuarial Science, Kenyatta University. Co- supervised with Prof. Odongo Leo, Department of Statistics and Actuarial Science, Kenyatta University (began 2016)

**Student Name:** John Kung'u

- v.) **Thesis title:** *A test of Contagion in Financial markets.* Department of Statistics and Actuarial Science, Kenyatta University (on-going)

**Student Name:** Rose Nyasuguta Ogweche

- vi.) **Thesis title:** *Modeling Volatility using GARCH(1,1) with mixture of Skew-Normal and Student's-t innovations* Masters, Department of Statistics and Actuarial Science, Kenyatta University (completed 2016)

**Student Name:** Mutua Joseph Mutisya

- vii.) **Thesis title:** *Regularized Nonlinear Least Trimmed Squares Estimator in the Presence of Multi-collinearity and Outliers* Masters, Department of Statistics and Actuarial Science, Kenyatta University (completed 2016)

**Student Name:** George K. K. Keitany

- viii.) **Thesis title:** *Robust M-Estimators of Population Mean.* Masters, Department of Statistics and Actuarial Science, Kenyatta University (completed 2016)

**Student name:** Mutuguta Bernard Githui

## Professional/ Consultancy (Editor/ Peer review in journals, Networks/ Collaborations, External Examiner, Patents)

### Past Research Appointments

- i.) Appointed peer reviewer *Kenya National Academy of Sciences* to review paper for publication entitled "*A stochastic model for predicting Loan Portfolio Performance*" 2018.
- ii.) Appointment to *Commission of University Education Data Management committee* , August 2016
- iii.) Training of staff in school of pure and applied sciences on *statistical computing with R 2016, text editing and reporting using LATEX*
- iv.) Appointed to *Kiambu Universal Health Coverage Committee* as a lead Actuarial/Statistical expert-January 2016
- v.) *Review of monographs on Spatial Livestock Distribution in Kenya, 2014, extracted from 2009, Census* by KNBS – Project of KNBS, Kenya
- vi.) *Review and reporting of Disasters situation in Kenya, UN Habitat (2012/13)* – Project implemented by Kenyatta University,
- vii.) *Project management (represented Kenyatta University as a lead trainer in European Union funded training in Use of GIS/Remote sensing tools in Watershed Management held at Makerere University (2010) and Dar er Salaam University (2011))*
- viii.) Handled project funded by European Union on *mapping of fish landing sites data capture and archives*– Implemented by Regional centre for mapping of Resources for Development (2007)
- ix.) Statistical analysis in projects implemented by ICIPE, FEWSNET, BirdLife Kenya (2012/13)
- x.) Monitoring and Evaluation (Alumni students – Maseno University)

### Community Service and Other Engagements

- Patron, Essunza Secondary School
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### Affiliation of Professional Bodies

- CFA Institute
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### National and International awards and Recognitions

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## Administrative Positions Held

### Recognized university administrative positions

- Examination Coordinator, Mathematics and Actuarial Science
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### Other administrative positions Held

- Patron, Actuarial Society of Kenyatta University
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