CURRICULUM VITAE

Welaha Mudiyanselage Thilini Dulanjali Kularatne

Residential Address: Unit 15/273, Blaxland Road, Ryde, NSW 2112

Contact Number: +61 424 489 170

E- Mail: thilini-dulanjali.kularatne@students.mq.edu.au , dulanjali.kularatne@gmail.com

Career Objectives

"To pursue an academic career which will facilitate the usage and the enhancement of skills that have already been achieved and to become a well-recognized Team Member through performance and gain experience in order to reach the pinnacle"

Academic Qualifications

2017	**Master of Research (MRes)** Department of Statistics, Faculty of Science and Engineering, Macquarie University
2015	**Master of Science (MSc) in Financial Mathematics** Department of Mathematics, Faculty of Science, University of Colombo
2011	**Bachelor of Science (Bsc - Hons) Special Degree in Statistics (First Class)** Department of Statistics and Computer Science, Faculty of Science, University of Peradeniya (Overall GPA – 3.80)

Research Interests

- Bayesian Statistics
- Financial Statistics
- Actuarial Statistics

Research Experience

1. **Research Project for Master of Research – 2017**

Research Topic: A Cross-Entropy Method for Optimal Stopping Problem.

Abstract: There are frequent situations when observations are recorded consecutively over a period, for an example, daily values of currency exchange rates. Sequential observations appear one by one, so data are analysed, as they are collected without fixing the sample size in advance. Further sampling may be terminated according to a pre-defined stopping rule. There are situations where we need to make decisions considering the observations, which we are already having, while future observations are not known yet. Sequential data analysis has a variety of applications in a wide range of fields including industrial quality control, econometrics, and analysis of financial systems

among many others. In this thesis, we develop several versions of a Cross-Entropy method to find an approximate optimal stopping rule. Here we have considered cases of both independent and dependent observations. We have carried out a simulation study, which has shown the accuracy of the proposed algorithm.

2. **Research Project for Master of Science - 2015**

Research Topic: Generalized Linear Model Approach to Identify Factors Associated with the Trading Volume of Colombo Stock Exchange.

Abstract: Investing in share market is considered to be a risk investing procedure. It mainly happens because of the lack awareness about the variability of the trading patterns of companies. With the use of a Generalized Linear Mixed Model for these type of data, an investor could be able identify the association between the fixed effects associated with the response variable concerning as well as about the random effects. According to this study, the Sector classification and the Board classification done on the listed companies in Colombo Stock Exchange have considered as the random effects associated with the Trading Volume of those companies. Statistical interpretations were used to highlight how those random effects can be used to support with the investing decision of an investor.

3. **Research Project assigned during the 4th Year (Undergraduate) – 2011**

Research Topic: Morphological Data Analysis on the plant genus '*Monochoria*'

Abstract: Collected Raw Data concerning the morphological characteristics on the plant genus 'Monochoria' and the Data was analysed with the intention of finding out the number of sub species of the same plant genus found in Sri Lanka. The statistical analysis investigated the morphological characteristics that contributed to the separation of the sub species to which was referred, above. In addition, the behaviour of every morphological characteristic was described using the relevant numerical and graphical techniques.

4. **Industrial Training at the end of the 3rd Year (Undergraduate) – 2010**

Project Name: Survey on Capital Market Awareness

Description: A survey was conducted covering almost all the districts in Sri Lanka, in order to make an evaluation of the Capital Market Awareness, in collaboration with the other Universities in Sri Lanka. The data was collected with the help of other Universities and I was a member of the Team of the Undergraduates from the University of Peradeniya who were reading for the BSc (Special) – Specializing in Statistics, specially selected for the analysis of Data. The relevant report presented to the Securities Exchange Commission was highly appreciated /commended.

Publications

1. **Kularatne T. D.,** Sofronov G., Estimation of thresholds in optimal stopping problems via a Cross-Entropy method, International Conference on Robust Statistics 2017, Wollongong, Australia, July 3-7, 2017

2. **Kularatne T. D.,** Sofronov G., A Cross-Entropy method for an optimal stopping problem AustMS 2016, Australian National University, Canberra, December 5-8, 2016

3. Wasana, H. M., Aluthpatabendi, D., **Kularatne, W. M. T. D.**, Wijekoon, P., Weerasooriya, R., & Bandara, J. (2016). Drinking water quality and chronic kidney disease of unknown etiology (CKDu): synergic effects of fluoride, cadmium and hardness of water. Environmental geochemistry and health, 38(1), 157-168. (DOI: 10.1007/s10653-015-9699-7)

4. **Kularatne, W.M.T.D.**, Wijekoon P., Yakandawela D. (2011). Multivariate Techniques in Analyzing Morphological Variations of the Genus Monochoria, Peradeniya University Research Sessions (PURSE 2011). pp 123

(Available on: http://www.pdn.ac.lk/purse/Proceedings/2011/PURSE%202011%20Abstracts.pdf)

Manuscript submitted

5. **Kularatne T. D.,** Sofronov G., Jayawardana M.W., A Cross-Entropy method for sequential decision problems, 56th IEEE Conference on Decision and Control, Melbourne, Australia, December 12-15, 2017

Honours and Awards

- University Award for Academic Excellence at the General Convocation 2011, University of Peradeniya.
- International Research Training Pathway (iRTP) scholarship from Macquarie University Sydney (July 2016 – July 2017).

Professional Experience

February 2014 – Up to Date : Department of Statistics and Computer Science, Faculty of Science University of Peradeniya – **Lecturer (Probationary) – On study leave**

February 2013 – January 2014 **:** Department of Statistics and Computer Science, Faculty of Applied Sciences, University of Sri Jayewardenapura – **Lecturer (Temporary)**

December 2011 – January 2013 : Department of Statistics and Computer Science, Faculty of Science University of Peradeniya – **Lecturer (Temporary)**

- Conducted lecture series, practical sessions and primed examination papers on
  University of Peradeniya:
  - Introduction to Probability Theory (ST 102)
  - Statistical Applications for (ST 103 and ST 104)
  - Sampling Techniques (ST 204)
  - Non Parametric and Categorical Data Analysis (ST 309)
  - Regression Analysis (ST 301)
  - Data Analysis and preparation of Reports (ST 306)
  - Actuarial Statistics (ST 401)
  - Linear Models (ST 407)

  University of Sri Jayewardenapura:
  - Time Series Analysis (STA 222 and STA 312)
  - Programming and Data Analysis with R (STA 315)
  - Data Analysis (STA 122)

January 2017 – Up to date **:** Department of Statistics, Macquarie University, Sydney, Australia
- **Tutor**

- Conducted tutorial sessions and practical sessions on
  Macquarie University, Sydney
  - Introductory Statistics (STAT170)

Software Packages used for Research and Teaching

- R
- Minitab
- Excel

Professional Qualifications

- Member of the Institute of Applied Statistics Sri Lanka (IASSL)
- Member of Australian Mathematical Society (AustMS)

Referees

Dr. Georgy Sofronov
Senior Lecturer
Department of Statistics
Faculty of Science
and Engineering,
Macquarie University,
Sydney, Australia
Email:
georgy.sofronov@mq.edu.au
Tel: +61-2-9850-8544

Dr. Thomas Fung
Lecturer
Department of Statistics
Faculty of Science
and Engineering,
Macquarie University,
Sydney, Australia
Email:
thomas.fung@mq.edu.au
Tel: +61-2-9850-4769

Prof. Pushpa Wijekoon
Professor
Department Statistics and
Computer Science,
Faculty of Science,
University of Peradeniya,
Sri Lanka
Email:
pushpaw@pdn.ac.lk
Tel: +94 812394649

I hereby certify that the information furnished by me above is true and correct to the best of my knowledge. **W. M. T. D. Kularatne**