# S. Sandun Malpriya Silva

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An ambitious biostatistician/data scientist with 4+ years of experience in both industry and academia. Highly experienced in machine learning with health and medical data for personalization. Worked on crossdisciplinary projects including health and well-being, mental health, cancer, and social science. Consulted over 500 students in machine learning, forecasting and predictive analytics, while doing the PhD, at three ranking universities namely Monash University, Melbourne University (MBS) and Swinburne University of Technology, with a student feedback rating of 4.7 out of 5.

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Find me on Linkedin

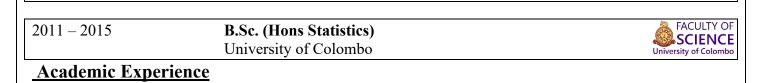
GLOBAL Challenge

### **Educational Qualification**

From May 2017 - January 2021 PhD in Statistics

#### Thesis Title: INNOVATIVE STATISTICAL METHODS TO MODEL AND EVALUATE PHYSICAL ACTIVITY PROGRAMS ENGAGEMENT (mHealth)

Supervisors: Professor Denny Meyer and Dr. Madawa Jayawardana (The project is done in collaboration with Virgin Pulse Global Challenge)



University of Sydney, New South Wales, Australia

December 2020- Current Biostatistician

Involve in medical research within NHMRC Clinical Trial Centre. Here my work involves data analysis, complex statistical programming and design of research studies, as well as interactions with medical research colleagues working on clinical trials research in a wide range of therapeutic areas.

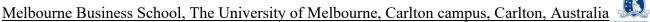
Monash University, Caufield, Australia

August 2019 – November 2020Teaching associateAdvanced Statistical Modelling (ETC3580)DataBusiness Forecasting (ETF 3231- ETF5231)ETF59Business Statistics (ETF1100)Quantil

Data Visualisation & Analytics ETF5922)

Quantitative methods for risk analysis (ETF5952)

THE UNIVERSITY OF SYDNEY





MONASH

University *(ETX2250-*

January 2020 - May 2020

Teaching associate for Master of Business analytics (MBusA)

#### Swinburne University, Hawthorn, Australia

August 2017 - November 2019 Business Analytics (INF30030) Teaching associate and a quantitative researcher Data Mining course (STA30004)

## **Research and Professional Experience**

Quantitative Researcher for VicRoads (Public Transport Victoria) :

This position is funded by a VicRoads tender, within the Centre for Mental Health, which sits in the Faculty of Health, Arts and Design and under Swinburne Research. This project has established the predictive value of offence data as a proxy measure of future crash risk and identified the important characteristics, license and offence histories of drivers with high future fatal and serious injury crash risk.

External Statistical Consultant at Peter MacCallum Cancer Research Center, Victoria

This study is looking for the predictors and survival analysis on the cause of death in "adolescents and young adult" cancer patients. The study will be utilizing various descriptive and predictive methods including survival analysis, random-forest and penalized logistic regression.

### Academic Awards and Grants

- Swinburne University Postgraduate Research Award (Swinburne University Postgraduate • Research Awards (SUPRAs) are awarded to students of exceptional research potential undertaking doctoral studies.)
- Travel grant to present research findings at Data Science, Statistics and Visualisation Conference, Kyoto, Japan, 13-15 August 2019
- Travel grant to attend Joint International Society for Clinical Biostatistics and Australian Statistical Conference (ISCB ASC 2018), Melbourne, Victoria, Australia, 26-30 August 2018
- Second runner up in representing the Department of Statistics, Data Science and Epidemiology (from Faculty of Health, Arts and Design category) at Swinburne Research Open Day Conference, Swinburne University of Technology, Melbourne, Victoria, Australia, 11 May 2018

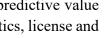
### **Research interests**

Biostatistics, Clinical trial research design, Predictive analytics with medical and health data, Survival analysis

### **Industry Related Experience**

May 2017 – Dec 2020 Working as a 'Data Scientist' at Virgin Pulse Global Challenge (VPGC) Projects: Carrying out the PhD research to answer three research questions using Virgin Pulse Data base

- 1. How can VPGC improve the efficiency of outlier and cheater detection?
- 2. How can the VPGC model the engagement dynamics of participants and thereby identify participants likely to drop out in the future so that timely remedial actions can be taken?



roads





3. How can personalised motivational cues be built into the physical activity module of the VPGC program?

Feb 2016 – March 20	Working as a ' <b>Talent &amp; Data Analyst</b> ' at MAS Holdings (Linea Aqua).
Projects:	<ol> <li>Employee attrition predictive model using demographic data, work related data and compensation data</li> <li>Innovative Statistical method in employee evaluations and annual salary increments</li> <li>About to implement a scientific method in team member allocation for a maximum productivity</li> </ol>
Aug 2014 - Oct 2014	Intern as a <b>Market analyst</b> , RMS Client Service Unit, Neilson Company (Pvt) Ltd

### **Management Related Professional Qualification**

Chartered Institute Of Management Accountants (CIMA) Contact Identification Reference- 1-9FJ0DX

### Additional Subject Related Software Skills

- Excellent problem-solving skills with data driven strategies.
- Experience in the use of R, Python, MATLAB, SPSS, Eviews, Minitab, PowerBI, and Microsoft office package software in visualizing and analyzing data.
- ➢ Knowledge in SQL, php, C++ and Java.
- Knowledge in deep learning techniques such as Recurrent Neural networks

### **Research Publications**

**Publications:** 

Silva, S. S. M. (2021). Innovative Statistical Methods to Model and Evaluate Physical Activity Programs Engagement (Doctoral dissertation, Swinburne University of Technology). <u>https://researchbank.swinburne.edu.au/file/150cae66-a2a9-4e42-9e8a-98098bd3cbf4/1/Sampathawaduge\_Silva\_Thesis.pdf</u>

Silva SSM, Meyer D, Jayawardana M. Detecting possible persons of interest in a physical activity program using step entries: Including a web-based application for outlier detection and decision-making. Biometrical Journal. 2020;1–14. https://doi.org/10.1002/bimj.201900008

Muir, S. D., Silva, S. S., Woldegiorgis, M. A., Rider, H., Meyer, D., & Jayawardana, M. W. (2019). Predictors of Success of Workplace Physical Activity Interventions: A Systematic Review. Journal of Physical Activity and Health, 16(8), 647-656. Doi: <u>https://doi.org/10.1123/jpah.2018-0077</u>

Silva SSM, Jayawardana MW, Meyer D (2018) Statistical methods to model and evaluate physical activity programs, using step counts: A systematic review. PLOS ONE 13(11): e0206763. <u>https://doi.org/10.1371/journal.pone.0206763</u>

Silva, S. S. M., Tilakaratne, C. D., & Munasinghe, R. (2016, September). Impact of day of the week effect on All Share Price Index (ASPI) and a comparison of forecastability of GARCH and NARX models. In 2016 Sixteenth International Conference on Advances in ICT for Emerging Regions (ICTer) (pp. 311-320). IEEE. doi:10.1109/ICTER.2016.7829936

Slikboer, R., Muir, S.D., Silva, S.S.M. et al. A systematic review of statistical models and outcomes of predicting fatal and serious injury crashes from driver crash and offense history data. Syst Rev 9, 220 (2020). https://doi.org/10.1186/s13643-020-01475-7

de Boer, K., Muir, S. D., Silva, S. S. M., Nedeljkovic, M., Seabrook, E., Thomas, N., & Meyer, D. (2021). Videoconferencing psychotherapy for couples and families: A systematic review. Journal of Marital and Family Therapy, 47(2), 259-288. <u>https://doi.org/10.1111/jmft.12518</u>

Albury, Kath, Amir Aryani, Jane Farmer, James Kelly, Anthony McCosker, Sandun Silva, Julie Tucker, and Jihoon Woo. "Data for Good Collaboration." (2021). Swinburne University of Technology https://doi.org/10.26185/x93d-4v29

Meyer, D., Muir, S. D., **Silva, S. S. M.,** Slikboer, R., McIntyre, A., Imberger, K. and Pyta V., Modelling the relationship of driver licence and offence history with fatal and serious injury (FSI) crash involvement. Journal of Safety Research (accepted for publication)

#### Papers under review or in preparation:

Silva, S. S. M., Meyer, D., & Jayawardana, M. (2020). User engagement with Mixture Hidden Markov Models. Australian and New Zealand Journal of Statistics (under review).

Silva, S. S. M., Meyer, D., & Jayawardana, M. (2020). Personalised step count prediction using machine learning. Journal of Medical Internet Research.

Heynemann, S., Lewin, J. H., Thompson, K., Moncur, D., Silva S.S.M. and Jayawardana M.W. Predictors of suicide risk in adolescent and young adults (AYA) with cancer. Journal of Cancer Medicine (under review)

Gebski, V., **Silva, S. S. M.**, Byth, K., Alicia, J., and Keech, A. Improving Efficiency of Standard Statistical Analyses for Time-to-Event Outcomes in Genome-Wide Association Studies (GWAS). Journal of Computational Statistics & Data Analysis (in preparation with Prof. Val Gebski at NHMRC CTC University of Sydney)

#### **Conferences and Presentations:**

Silva, Sandun ; Jayawardana, Madawa W. ; Meyer, D. ; 2018. Mixture Hidden Markov models to detect the engagement dynamics of mhealth participants; Data science, statistics and visualisation conference, Kyoto, Japan, 13-15 August 2019.

2nd Runner up from Faculty of health, arts and design category

Silva, Sandun ; Meyer, D. ; Jayawardana, Madawa W. ; 2018. Innovative Statistical Methods to Evaluate and Model Corporate Physical Activity Programs, Swinburne Research Open Day conference, Swinburne University of Technology, Melbourne, Victoria, Australia, 11 May 2018

Silva, Sandun ; Meyer, D. ; Jayawardana, Madawa W. ; 2018. A user-friendly interface for outlier detection in physical activity step counts, Joint International Society for Clinical Biostatistics and Australian Statistical Conference (ISCB ASC 2018), Melbourne, Victoria, Australia, 26-30 August 2018

Silva, Sandun ; Jayawardana, MadawaW. ; Meyer, D. ; 2018. Statistical methods for personalising physical activity programs using step counts; systematic review, FHAD HDR student conference, Swinburne University of Technology, Melbourne, Victoria, Australia, 31 September 2018

Silva, Sandun ; Jayawardana, MadawaW. ; Meyer, D. ; 2018. Outlier detection with a web application, Machine Learning and Intelligent Optimization Research Group, Swinburne University of Technology, Melbourne, Victoria, Australia, 08 August 2018

Silva, Sandun ; Jayawardana, MadawaW. ; Meyer, D. ; 2019. Personalising digital health with data science, Virgin Pulse Global Challenge, Virgin Pulse, Melbourne, Victoria, Australia, 08 September 2019

Silva, Sandun ; Jayawardana, MadawaW. ; Meyer, D. ; 2020. Digital health engagement: An application using R, R and Cluster Functions (RCF) User Group, Peter MacCallum Cancer Research Center, Melbourne, Victoria, Australia, 28 August 2020

Silva, S.S.M., Tilakaratne, C.D., & Munasinghe, R. (2016). Impact of day of the week effect on all share price index (ASPI) and a comparison of forecastability of GARCH and NARX models. Paper presented at the 16<sup>th</sup>

International Conference on Advances in ICT for Emerging Regions (ICTer), Negombo, Sri Lanka, 1-2 September (pp. 311-320). Poster Presented

Silva, Sandun ; Jayawardana, Madawa W. ; Meyer, D. ; 2018. Predicting the future state of engagement of participants in mobile based health programs, Swinburne Research Conference 2019 | Changemakers, Swinburne University of Technology, Melbourne, Victoria, Australia, 23 July 2019

#### **Sports and Interests**

Swimming

Basketball

#### Non Related Referees

Prof. Ian C. Marschner Director and Professor of Biostatistics, NHMRC Clinical Trial Centre, University of Sydney Australia +61434187428 <u>Jan.marschner@sydney.edu.au</u>

Dr. Madawa Jayawardana Statistical Consultant Office of Cancer Research, Peter MacCallum Cancer Centre, Sir Peter MacCallum Department of Oncology, The University of Melbourne, Parkville 3010 Australia +61424855304 <u>Madawa.Jayawardana@petermac.org</u> Prof. George AthanasopoulosProfessor and Deputy Head (Caulfield Campus) Department of Econometrics and Business Statistics Monash Business School Monash University, Victoria 3145, Australia + 61399031075 george.athanasopoulos@monash.edu

Prof. Denny Meyer Department of Statistics, Data Science and Epidemiology, Swinburne University of Technology Australia +61410445857 dmeyer@swin.edu.au

I do hereby certify that the above particulars are true and correct to the best of my knowledge. Date:...2021/05/03....