

Curriculum Vitae

Piyadi Gamage Jayani Lakshika
Department of Econometrics and Business Statistics
Monash University, Australia

Email: jayani.piyadigamage@monash.edu, jayanilakshika76@gmail.com
Website: <https://jayanilakshika.netlify.app/>
GitHub: <https://github.com/JayaniLakshika>
LinkedIn: <https://www.linkedin.com/in/jayani-lakshika-9a0297162>

Education

PhD candidate - Statistics

Faculty of Business & Economics, Monash University, Australia July 2022 —
Thesis title: New Interactive Visual Tools and Statistical Methodology for Selecting and January 2026
Evaluating Non-linear Dimension Reduction Layouts of High-dimensional Data

B.Sc. (Honours) in Statistics

University of Sri Jayewardenepura (USJ), Sri Lanka January 2017 —
Thesis title: Computer Vision System For Automated Medicinal Plant Identification December 2020

Diploma in Computer System Design (DCSD)

National Institute of Business Management (NIBM), Sri Lanka March 2016 —
March 2017

Certificate in Business Accounting

Chartered Institute of Management Accountants (CIMA), Sri Lanka December 2015
— September 2016

Appointments Held

Teaching Associate

Department of Econometrics and Business Statistics, Monash University, Australia January 2023
—

Teaching Assistant (Temporary Instructor)

University of Sri Jayewardenepura (USJ), Sri Lanka July 2021 —
July 2022

Associate Data Analyst

Vizuamatix (Pvt) Ltd, Sri Lanka January —
November 2021

Trainee Data Analyst

Vizuamatix (Pvt) Ltd, Sri Lanka July 2020
—January 2021

Research Internship

Vizuamatix (Pvt) Ltd, Sri Lanka January — July
Industrial training as a fulfillment of the degree B.Sc. (Honours) in Statistics 2020

Publications

Papers

Gamage, J. P., Cook, D., Harrison, P., Lydeamore, M., & Talagala, T. S. (2025). cardinalR: Generating Interesting High-Dimensional Data Structures. arXiv preprint [arXiv:2512.18172](#). (**Submit, The R Journal**)

Gamage, J. P., Cook, D., Harrison, P., Lydeamore, M., & Talagala, T. S. (2025). quollr: An R Package for Visualizing 2-D Models from Nonlinear Dimension Reductions in High-Dimensional Space. arXiv preprint [arXiv:2512.18166](#). (**Submit, The R Journal**)

Gamage, J. P., Cook, D., Harrison, P., & Lydeamore, M. (2025). Stop Lying to Me: New Visual Tools to Choose the Most Honest Nonlinear Dimension Reduction. arXiv preprint [arXiv:2506.22051](#) (**Revise & Resubmit, JCGS**)

Lakshika, J. P., & Talagala, T. S. (2021). Computer-aided Interpretable Features for Leaf Image Classification. arXiv preprint [arXiv:2106.08077](#)

Conference proceedings

Young Scientists' Conference on Multidisciplinary Research (YCMR) abstract publication October 2021
([ISSN 2815-0260](#))

17th applied science research poster and abstract publication ([Page 74](#)) September 2021

Conference presentations and contributed talks

Visualise your fitted non-linear reduction model in high-dimensional space 2025
Australian Statistical Conference (ASC 2025) (Perth, Western Australia)

Visualise your fitted non-linear reduction model in high-dimensional space 2025
Biometrics in the Bush Capital (BIBC2025) (Canberra, Australia)

Visualise your fitted non-linear reduction model in high-dimensional space 2025
Monash EBS PhD Contest in International Day of Women in Statistics and Data Science (IDWSDS) (online)

Visualise your fitted non-linear reduction model in high-dimensional space 2025
2025 Joint Statistical Meetings, Nashville, Tennessee, USA

Generating interesting high-dimensional data structures 2025
UseR! 2025, Penn Pavilion, Duke University, Durham, North Carolina, USA

Visualise your fitted non-linear reduction model in high-dimensional space 2024
Data Science Club, University of Nebraska, Omaha (UNO), USA

Visualise your fitted non-linear reduction model in high-dimensional space 2024
Graphics Group, University of Nebraska, Lincoln (UNL), USA

Visualise your fitted non-linear reduction model in high-dimensional space 2024
UseR! 2024, Salzburg, Austria

Visualising how non-linear dimension reduction warps your data 2024
Faculty of BusEco Three Minute Thesis (3MT) competition, Monash University, Australia

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| Visualise your fitted non-linear dimension reduction model in the high-dimensional data space Victorian branch of the Australian and New Zealand Industrial and Applied Mathematics Society (VicANZIAM) 2024 (RMIT university, Melbourne, Australia) | 2024 |
| Visualize your fitted non-linear dimension reduction model in the high-dimensional data space — Invited speaker Bioinformatics Seminar, Monash University, Australia | 2024 |
| With non-linear dimension reduction, when can you believe what you see? Australian Statistical Conference (ASC 2023) (Wollongon, Australia) | 2023 |
| Viewing the model from a non-linear dimension reduction in the high-dimensional data space — Invited speaker 12th-Conference of the Asian Regional Section of the International Association for Statistical Computing (IASC-ARS 2023) (Wollongon, Australia) | 2023 |
| Higher studies webinar — Invited speaker University of Sri Jayewardenepura (USJ), Sri Lanka | 2023 |
| Computer Vision System for Automated Medicinal Plant Identification — Invited speaker NUMBATs meeting, Monash University, Australia | 2022 |
| Computer Vision System for Automated Medicinal Plant Identification — Invited speaker Estadistica 2021, the Annual Statistics Day organized by the Statistics Society of University of Sri Jayewardenepura, Sri Lanka | 2021 |
| Computer Vision System for Automated Medicinal Plant Identification — Invited speaker Vx Tech Talk 2021, Vizumatix Pvt. Ltd, Sri lanka | 2021 |
| Statistical machine learning for medicinal plant leaves classification — Presentation 17th Applied Statistics Conference, Solvenia | 2021 |
| Statistical machine learning for medicinal plant leaves classification — Speed-talk Young Scientists' Conference on Multidisciplinary Research (YSCMR 2021) which is organised by the Young Scientists' Association of the National Institute of Fundamental Studies, Sri Lanka (NIFS-YSA) | 2021 |

👁 Visiting

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| Prof. Heike Hofmann, A/Prof. Susan Vanderplas, and Dr. Michelle Graham At the University of Nebraska, Lincoln, USA (six weeks) | October- December 2024 |
| A/Prof. Ursula Laa At the University of Natural Resources and Life Sciences, Vienna (BOKU University), accompanied by Prof. Di Cook, Prof. Eun-Kyung Lee, and A/Prof. Natalia da Silva (one week) | July 2024 |

R packages

airpurifyr: Provide an interface to scrape air quality data from <https://openaq.org/>

cardinalR: Collection of data structures.

quollr: Tool to visualise how non-linear dimension reduction warps your data

polarisR: Shiny app to compare models generated with **quollr** in high dimensions using different tour methods, featuring interactivity.

olympics: Provide an interface to scrape Olympic data from <https://olympics.com/>

MedLEA: Software which contains information about medicinal plants in Sri Lanka

DSjobtracker: Software which contains what skills and qualifications are required for data science related jobs

Teaching

Tutor

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| [ETC5242] Statistical thinking | 2025 |
| [ETC2420] Statistical thinking | 2025 |
| [ETC5510] Introduction to data analysis | 2024 |
| [ETC1010] Introduction to data analysis | 2024 |
| [ETC3250] Introduction to machine learning | 2023 — 2024 |
| [ETC5250] Introduction to machine learning | 2023 — 2025 |
| [ETC5521] Exploratory data analysis | 2023 |
| [STA 326 2.0] R Programming | 2022 |
| [STA 213 2.0] Inferential Statistics | 2022 |
| [STA 214 1.0] Nonparametric Statistics | 2022 |
| [STA 215 2.0] Sampling techniques | 2022 |
| [STA 115 1.0] Elements of Sampling | 2022 |
| [STA 113 2.0] Descriptive Statistics | 2022 |
| [STA 114 2.0] Probability and Distribution Theory I | 2022 |
| [STA 224 2.0] Regression Analysis | 2021 |
| [STA 225 2.0] Design of Experiments | 2021 |
| [STA 226 1.0] Data Analysis II | 2021 |
| [STA 123 2.0] Probability and Distribution Theory II | 2021 |
| [STA 124 2.0] Data Analysis I | 2021 |
| [STA 125 1.0] Statistical Communication | 2021 |

Workshops

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| Reproducible Reporting and Research with Quarto | September 2025 |
| Reproducible Reporting, Academic Papers, Presentations and Theses with Quarto | July 2025 |

Awards

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| PhD external experience fund Monash University, Australia | 2024 |
| Monash Business School Prestigious International Conference Award Monash University, Australia | 2024 |
| Co-Funded Graduate Research Scholarship, Monash Business School Monash University, Australia | 2022 — 2026 |
| Diploma in Computer System Design (DCSD) — Gold medalist National Institute of Business Management (NIBM), Sri Lanka | 2017 |
| OCTAVE competition — Finalists Research abstract competition organized by OCTAVE company, Sri Lanka | 2021 |
| Stat Circle quiz competition — Winners Team member of the winners at inter university quiz competition organized by the Stat Circle Faculty of Science, University of Colombo, Sri Lanka | 2018 |

Academic Service & Community Engagment

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| Monash Innovation Guarantee-Undergraduate (MIG-UG) — Mentor Monash University, Australia | January 2026 |
| ASC Session Chair Australian Statistical Conference in Perth, Australia | 2025 |
| Monash Innovation Guarantee-Postgraduate (MIG-P) — Mentor Monash University, Australia | June 2025 |
| NUMBATs seminar organizer Monash University, Australia | 2025 |
| UseR! 2024 Session Chair Conference in Salzburg, Austria | 2024 |
| ASC Session Chair Australian Statistical Conference in Wollongong, Australia | 2023 |
| WOMBAT tutorials — Helper Monash University, Australia | 2022 |
| Statistical Consultancy Service — Department representative University of Sri Jayewardenepura (USJ), Sri Lanka | 2020 |

Professional Memberships

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| American Statistical Association (ASA) | 2025– |
| Statistical Society of Australia (SSA) | 2022– |
| R-Ladies Melbourne | 2022– |
| Statistics society University of Sri Jayewardenepura (USJ), Sri Lanka | 2017–2022 |

References

Prof Dianne Cook

dicook@monash.edu

<https://www.dicook.org/>

Professor

Department of Econometrics and Business Statistics

Faculty of Business and Economics

Monash University, Australia

Dr Michael Lydeamore

michael.lydeamore@monash.edu

<https://www.michaellydeamore.com/>

Senior Lecturer

Department of Econometrics and Business Statistics

Faculty of Business and Economics

Monash University, Australia

Dr Thiyanga S. Talagala

ttalagala@sjp.ac.lk

<https://thiyanga.netlify.com>

Senior Lecturer

Department of Statistics

Faculty of Applied Sciences

University of Sri Jayewardenepura, Sri Lanka