SUPUN SUDARAKA MANATHUNGA

Education

Division of Clinical and Translational Research, McGill University, Canada

- PhD in Experimental Medicine (In progress)
    - Expected graduation: 2029

Faculty of Medicine, University of Peradeniya, Sri Lanka

- Bachelor of Medicine, Bachelor of Surgery (MBBS) (2020 January)
    - Final MBBS Second class upper division
        - Distinction in Gynecology and Obstetrics
    - Third MBBS (Feb 2016 – Mar 2019)
        - First class with GPA of 3.91
        - Distinctions in Pharmacology, Pathology, Microbiology and Community Medicine
    - Second MBBS (Jan 2014 – Jan 2016)
        - First class with GPA of 3.74

Certifications

- Certificate in Teaching in Higher Education (CTHE) – Staff Development Center, University of Peradeniya (Jan 2024)
- Certificate in Game Theory – Stanford University Online (May 2022)
- Certificate on Introduction to Systematic Review and Meta-analysis – John Hopkins University Online (Nov 2021)
- Harvard Data Science Professional Certificate (Oct 2020)

Professional Experience

- Lecturer (Probationary) – Department of Pharmacology, Faculty of Medicine, University of Peradeniya (Jul 2023 to Dec 2024)
- Medical Officer of Health – Office of Medical Officer of Health - Gothatuwa (May 2022 – Jul 2023)
- Relief House Officer – Neurotrauma High Dependency Unit, National Hospital of Sri Lanka, Colombo 10 (Oct 2021 – May 2022)
- Intern Medical Officer –National Hospital of Sri Lanka, Colombo 10 (Apr 2021 - Oct 2021)
- Intern Medical Officer – De Soysa Hospital for Women, Colombo 10 (Oct 2020 - Apr 2021)
- Research Assistant, Department of Gynecology and Obstetrics, Faculty of Medicine, University of Peradeniya (Feb 2020 – Oct 2020)

Grants and scholarships

1. **AI4PH Trainee Scholarship – Year 2026**

- Renewable for an additional year

2. **Graduate Research Enhancement and Travel Awards – Year 2026**

    - For attending the 48th SMDM Annual Meeting in Oslo, Norway

3. **Richard H. Tomlinson Doctoral Fellowship – year 2025/26**

    - Renewable for two additional years, with a differential fee waiver

4. **Fonds de recherche du Québec, Santé (FRQS) Master's Scholarship – year 2026**

    - Project title: Integrated probabilistic modeling and risk-based simulation for spatiotemporal prediction of West Nile virus and optimization of public health interventions
    - 2025 and 2026
    - DOI: https://doi.org/10.69777/373650

5. **NSERC-CREATE program in One Health Against Pathogens (OHAP)** PhD-level trainee

    - Project title: Integrated probabilistic modeling and risk-based simulation for spatiotemporal prediction of West Nile virus and optimization of public health interventions
    - For the 2025/2026, 2026/2027 and 2027/2028 academic years

6. **Principal investigator**, University Research Grant (URG 2024)
    - Project title: Predicting Plasma Leakage in Dengue Haemorrhagic Fever
    - Grant number: URG/2024/26/M
    - Sept 2024 – Aug 2026
    - Local collaborators: Prof S D Dharmaratne, Dept of Community Medicine, Faculty of Medicine, University of Peradeniya Dr Lakkumar Fernando, Clinical Head, Dengue Haemorrhagic Fever Management Unit, Negombo
    - Foreign collaborators: Dr Alton Russell, Epidemiology, Biostatistics and Occupational Health, McGill University, Canada

7. **Co-investigator**, *Sri Lanka Medical Association Dr Thistle Jayawardena Research Grant for Intensive Care and Critical Care*
    - Principal investigator: Pryankara D
    - Jan 2019 – Dec 2020
    - Project title: Platelet recovery in sepsis: an early marker of recovery

Awards

1. **Lee B. Lusted Student Prize in Quantitative Methods and Theoretical Developments,** 48th annual meeting, Society for Medical Decision Making (SMDM), Oslo, Norway, June 2026

2. **Award for the best poster** 22nd annual academic sessions, Sri Lanka College of Psychiatrists, Colombo, Sri Lanka, August 2025

3. **Research Excellence Award** for academic research with significant impact at the Peradeniya Medical School Annual Research Congress 2024 on 30th July 2024

4. **Award of the first place in the oral presentations** at the 9th Annual Academic Sessions, College of Chemical Pathologists, Sri Lanka at Hotel Galadari, Colombo

5. **Runner up, *Young Scholar Award*,** the Asia Pacific Medical Education Conference 2024. Awarded on 20th January 2024 at the BMICH Sri Lanka

6. **Won the award for best oral presentation**, awarded at the Annual sessions of Sri Lanka College of Endocrinologists, Jul 2023, for the abstract titled Feasibility and Effectiveness of Adrenal Venous Sampling in the Management of Primary Aldosteronism; Single Centered Cohort Study at a Tertiary Care Hospital in Sri Lanka.

7. **Awarded the best research**, at the Annual academic sessions, Sri Lanka College of Pulmonologists, 5-7 Feb 2023, for the abstract titled Outcomes of Different Dosing Regimens of Steroids in Covid Pneumonia: A Retrospective Study.

8. **Awarded the prize for Commendable Oral Presentation**, at the 44th Annual Academic Sessions of the Kandy Society of Medicine, Mar 2022, for the abstract titled A comparison of transmissibility of SARS-CoV-2 Variants of Concern, presented as an oral presentation.

9. **Awarded the 1st place for the oral presentations category**, at the 7th Annual Academic Sessions of College of Chemical Pathologists, 2022, for the abstract titled Practical Utility of Laboratory Data including D-dimers in COVID-19: A Multivariate Regression Model to Predict the Disease Severity.

10. **Awarded the 2nd place for the oral presentations category**, at the 7th Annual Academic Sessions of College of Chemical Pathologists, 2022, for the abstract titled Evaluation of the Association between Severity of Acute SARS-CoV-2 Infection and Vaccination: A Cross-Sectional Study on a Group of Patients Admitted to a Tertiary Care Hospital in Sri Lanka.

11. **Awarded 2nd Runner-up in the oral presentation category** at the ClinPharm 2024 by The Sri Lanka Association of Clinical Pharmacology and Therapeutics (SLACPT) in collaboration with International Union of Basic and Clinical Pharmacology (IUPHAR) for the abstract titled Artificial intelligence assisted automated essay scoring tool to evaluate Short Answer Questions in Pharmacology.

Publications

In Peer-Reviewed Journals

1. Seneviratne T, **Manathunga S**, Idirisingha W, Somaratne K, Marambe K, Dangahadeniya U. Artificial intelligence based personalized student feedback system-Sisu Athwala'to enhance exam performance of medical undergraduates. PLoS One. 2025 Dec 4;20(12):e0336154.

2. Meulenbeld A, Styles C, Shuttleworth G, **Manathunga S**, van Remoortel H, Malard L, Brits T, Swanevelder R, García-Erce JA, Garcia-Martínez I, Karki S. Potential benefits of an alternative haemoglobin deferral strategy evaluated in seven countries. Vox Sanguinis. 2025 Oct 13.

3. Balasooriya C, **Manathunga S**, Nagaratnam S, Ozaal S, Liyanagunawardana J, Katulanda G. Effectiveness of Adrenal Venous Sampling in the Management of Primary Aldosteronism: Single-Centered Cross-Sectional Study at a Tertiary Care Hospital in Sri Lanka. Journal of the ASEAN Federation of Endocrine Societies. 2025 Nov 6;40(2):126.

4. Seneviratne HM, **Manathunga SS**. Artificial intelligence assisted automated short answer question scoring tool shows high correlation with human examiner markings. BMC Medical Education. 2025 Dec;25(1):1-7.

5. Hewavitharana H, Dissanayake R, **Manathunga S**, Rajindrajith S. Quality of life and sociodemographic characterisation of Sri Lankan children with Trisomy 21: A Case Control Study. Rare. 2025 Apr 23:100088.

6. Nicolaas Koen Vermeijden, Leilani de Silva, **Manathunga S**, Daphne Spoolder, Judith Korterink, Arine Vlieger, Shaman Rajindrajith, Marc Benninga; Epidemiology of Pediatric Functional Abdominal Pain Disorders: A Meta-Analysis. Pediatrics 2025; e2024067677. 10.1542/peds.2024-067677

7. Munasinghe S, **Manathunga S**, Hathagoda W, Kuruppu C, Ranasinghe P, Devanarayana NM, Baaleman DF, Benninga MA, Rajindrajith S. How do we define normal bowel frequency from newborn to teens?: A Bayesian meta-analysis. J Pediatr Gastroenterol Nutr. 2025; 80: 569-579. doi:10.1002/jpn3.12432

8. Priyankara D, Mudalige A, Lokuge M, Samaranayake W, Sanjeeva E, Mohomed M, Wanigasuriya R, Punchihewa D, Subasinghe L, Mendis A, Muthulingam N, **Manathunga S**, Abeyagunawardena I. Antibiotic prescription in critical care units in Sri Lanka: a prospective multi-centre survey. **Ceylon Medical Journal**. 2024 Sep 19;69(SI3).

9. Gnanarathne S, Fonseka S, **Manathunga SS**, Jayasinghe R, Siriwardane S. Comparison of the Effectiveness and Safety of Hydroxychloroquine and Methotrexate in the Treatment of Moderate-to-severe Oral Lichen Planus: A Pilot Study. ***Journal of Oral Health and Community Dentistry***. 2024 Jan;17(3):116-120.

10. Fonseka S, Gnanarathne S, **Manathunga SS**, Yalegama LLWC, Idirisinghe IMSK. Efficacy and safety of virgin coconut oil and king coconut oil compared to liquid paraffin as a moisturizer for mild atopic dermatitis: A pilot study. ***Sri Lanka Journal of Indigenous Medicine***. 2023 Dec;8(2).

11. Mohideen SB, Herath T, **Manathunga SS**. A comparative study on outcomes of fasting vs postprandial thyroid function tests among pregnant mothers in a tertiary care setting in Sri Lanka. ***Oxford Academics Laboratory Medicine*.** 2023 Sep;lmad084.

12. **Manathunga SS**, Abeyagunawardena IA, Dharmaratne SD. A comparison of transmissibility of SARS-CoV-2 variants of concern. ***Virology Journal***. 2023 Apr;20(1):59.

13. **Manathunga SS**. Association of Social, Demographic, Health, Nutritional and Environmental Factors With the Incidence and Death Rates of COVID-19; a Global Cross-Sectional Analytical Study. ***Advances in Artificial Intelligence and Machine Learning***. 2022 May;2(2):23.

14. **Manathunga SS**, Abeyagunawardena IA, Dharmaratne SD. Source code and secondary data of the stochastic process based COVID-19 simulation model. ***Software Impacts***. 2022 May;12:100284.

15. **Manathunga SS**, Abeyagunawardena IA, Dharmaratne SD. A stochastic process based modular tool-box for simulating COVID-19 infection spread. ***Informatics in Medicine Unlocked***. 2022 Jan;29:100899.

16. **Manathunga SS**, IA S, ESK D, Abeyagunawardena S. Detecting Myocardial Infarction by Electrocardiogram Machine Learning Models with Greater Accuracy; A Technical Advance Article. ***Cardiology and Cardiovascular Medicine***. 2021 Dec;5.

17. Dharmaratne SD, Gunasena P, Gunathunga MW, Kothalawala M**, Manathunga SS**, Abeyagunawardena IA. The variations in the trends of novel coronavirus disease cases reported in Sri Lanka and the public health response. ***Journal of the College of Community Physicians of Sri Lanka***. 2020 Aug;26(Special Edition).

18. Dharmaratne S, **Manathunga SS**, Abeyagunawardena I, Manchanayake K, Kothalawala M, Gunathunga W. Estimation of the basic reproduction number (R0) for the novel coronavirus disease in Sri Lanka. ***Virology Journal***. 2020 Dec;17(1):1-7.

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Pre-prints

1. **Manathunga S**, Janssen MP, Luo Y, Russell WA, Pothast M. When to repeat a biomarker test? Decomposing sources of variation from conditionally repeated measurements. arXiv preprint arXiv:2602.14877. 2026 Feb 16.

2. Wijenayake B, Ratnayake A, Edirisinghe L, Wijeratne U, Fonseka T, Godaliyadda R, Dharmaratne S, Ekanayake P, Herath V, Alwis I, **Manathunga S**. PoPStat-COVID19: Leveraging Population Pyramids to Quantify Demographic Vulnerability to COVID-19. arXiv preprint arXiv:2509.14213. 2025 Sep 17.

3. **Manathunga SS**, Hettigoda I. Aligning large language models for clinical tasks. ***arXiv*** preprint arXiv:2309.02884. 2023 Sep 6.

4. **Manathunga SS**, Illangasekara YA. Retrieval Augmented Generation and Representative Vector Summarization for large unstructured textual data in Medical Education. ***arXiv*** preprint arXiv:2308.00479. 2023 Aug 1.

5. Fonseka T, Wijenayake B, Ratnayake A, Alwis I, **Manathunga SS**, Godaliyadda R, Herath V, Pamuditha I, Ekanayake P, Dharmarathne S, Devising PoPStat: A Metric Bridging Population Pyramids with Global Disease Mortality ***arXiv*** preprint arXiv:2501.11514. 2025 Jan 20.

Abstracts

1. **Manathunga S**, Osgood N, O'Brien S, Buckeridge D, Russell A. Using a stochastic epidemic model to guide efficient seroprevalence sampling decisions. SMDM annual meeting, Oslo, Norway, June 2026

2. **Manathunga S**, Pothast M, Janssen M, Vassallo R, Russell A. A web application for probabilistic assessment of donors' hemoglobin level accounting for measurement error. AABB annual meeting, San Diego, October 2025

3. Pothast M, **Manathunga SS**, Luo Y, Russell A, Janssen M. Assessing variability in fingerstick hemoglobin measurements: implications for blood donor deferral criteria. ISBT annual conference, Milan, May 2025

4. Meulenbeld A, **Manathunga SS**, Styles C, Shuttleworth G, Khoudary J, Swanevelder R, Brits T, Welvaert M, Russell W, Arvas M, Hurk K, Pothast M, Janssen M. A potential alternative deferral algorithm based on historical mean haemoglobin. ISBT annual conference, Milan, May 2025

5. Baminiwatta A, **Manathunga SS**, Basnayaka T, Madhubhashini A, Dhananjaya S. Geospatial mapping of admissions to a psychiatry unit of Colombo North Teaching hospital in 2024. 22nd annual academic sessions, Sri Lanka College of Psychiatrists, Colombo, Sri Lanka, August 2025

6. **Manathunga SS**, Dharmaratne SD, Lakkumar F, Russell WA (2025). Developing a simple clinical prediction tool for dengue plasma leakage that approximates a black-box machine learning model, the SMDM annual meeting, Ann Arbor, USA, June 2025

7. Abeyagunawardena A, **Manathunga SS,** Abegunawardena I, Thalgahagoda S. Favorable predictors of outcome when cyclosporin A therapy is changed to Mycophenolate mofetil in steroid-resistant nephrotic syndrome. 56th annual meeting of the European Society of Pediatric Nephrology (ESPN), Spain, September 2024

8. Abeyagunawardena A, **Manathunga SS,** Abegunawardena I. Long-term outcome of steroid-sensitive nephrotic syndrome. 56th annual meeting of the European Society of Pediatric Nephrology (ESPN), Spain, September 2024

9. Abeyagunawardena IA, **Manathunga SS**, Sirisena KKSN, Priyankara WD. Early recovery of thrombocytopenia is associated with a better outcome in sepsis; an interim analysis. 57th Annual Academic Sessions, Ceylon College of Physicians, September 2024

10. Priyankara WD, Abeyagunawardena IA**, Manathunga SS**. Antibiotic prescription in critical care units in Sri Lanka. Asian Journal of Internal Medicine 2024 Volume 2 Supplement 1

11. Balassoriya BMCM, Basnayaka BMTK, Galmangodage NE, Liyanagunawardena JE, Siddiqa OMO, **Manathunga SS**, Katulanda GW. Evaluation of efficacy of Sampson equation for LDL-C; a single centered study at a tertiary care hospital, Sri Lanka. 9th annualy academic sessions, College of Clinical Pathologists Sri Lanka, July 2024. **1st place in the oral presentations category**.

12. Seneviratne T**, Manathunga SS.** Artificial intelligence assisted automated essay scoring tool to evaluate Short Answer Questions in Pharmacology. ClinPharm 2024 by The Sri Lanka Association of Clinical Pharmacology and Therapeutics (SLACPT) in collaboration with International Union of Basic and Clinical Pharmacology (IUPHAR). 2024, July, BMICH Sri Lanka. **2nd Runner-up in oral presentation category**

13. **Manathunga SS,** Seneviratne T. Artificial intelligence predicts students' exam performance with high sensitivity allowing personalized interventions. ***Asia Pacific Medical Education Conference*** 2024, Jan. BMICH Sri Lanka. **Awarded Runner up, Young Scholar Award**

14. Priyankara WD, Abeyagunawardena IA, **Manathunga SS**. Lung Function and Associated Functional Limitation in Survivors of Pulmonary Hemorrhage Secondary to Severe Leptospirosis. ***Annual academic sessions, Sri Lanka College of Pulmonologists***, 5-7 Feb 2023

15. H Hewavitharana, R Dissanayake, **SS Manatunga**, S Rajindrajith. Quality of life and sociodemographic characterisation of sri lankan children with trisomy 21: a case control study. ***Annual academic sessions, Sri Lanka College of Paediatricians***, May 2023

16. A Gunathunga, **Manathunga SS**, RS Thalgahagoda, AS Abeyagunawardena.Relapses of nephrotic syndrome following covid-19 vaccination. ***Annual academic sessions, Sri Lanka College of Paediatricians***, May 2023

17. Balasooriya BMCM, Sujeeva N, **Manathunga SS**, Siddiqa OMO, Samarakoon SMPP, Thowfeek Z, Katulanda GW. Efficacy and Effectiveness of Adrenal Venous Sampling in the Management of Primary Aldosteronism; Single Centered Cohort Study at a Tertiary Care Hospital in Sri Lanka. ***8th Annual academic sessions of Sri Lanka College of Chemical Pathologists***. 2023. **Won the second place in oral presentations category.**

18. Abeyagunawardena A, Abeyagunawardena I, **Manathunga SS**. Benefits of early intervention at the onset of proteinuria in steroid-dependent nephrotic syndrome ***55th ESPN Annual Meeting, Vilnius, Lithuania***, Pediatr Nephrol, vol. 38, no. 2, pp. 43–257, Sep 2023, doi: 10.1007/s00467-023-06094-7.

19. Abeyagunawardena A, Gunathunga A, Thalgahagoda S, **Manathunga SS,** Abeyagunawardena S. Relapse of nephrotic syndrome follow- ing covid-19 vaccination ***55th ESPN Annual Meeting, Vilnius, Lithuania*** Pediatr Nephrol, vol. 38, no. 2, pp. 43–257, Sep 2023, doi: 10.1007/s00467-023-06094-7.

20. Balasooriya BMCM, Sujeeva N, **Manathunga SS**, Siddiqa OMO, Samarakoon SMPP, Thowfeek Z, Katulanda GW. Feasibility and Effectiveness of Adrenal Venous Sampling in the Management of Primary Aldosteronism; Single Centered Cohort Study at a Tertiary Care Hospital in Sri Lanka.

Annual sessions of Sri Lanka College of Endocrinologists. Jul 2023. **Won the award for best oral presentation.**

21. Priyankara WD, Abeyagunawardena IA, **Manathunga SS**. Antibiotic prescription in critical care units in Sri Lanka. **Awarded the Best Abstract-Poster Presentation**. ***Annual Academic Sessions 2023, Sri Lanka College of Internal Medicine***. Nov 2023

22. Abeyagunawardena IA, Ruwanpathirana PS, Vidanapathirana MN, Chathuranga WATZ, **Manathunga SS**, Priyankara WD. Outcomes of Different Dosing Regimens of Steroids in Covid Pneumonia: A Retrospective Study. ***Annual academic sessions, Sri Lanka College of Pulmonologists***, 5-7 Feb 2023; **Awarded the best research**

23. I Illangasekera YA , **Manathunga SS**. Utility of machine learning in medical research**.** ***Kandy society of medicine Annual scientific sessions*** 2023, 9-11 Feb 2023

24. **Manathunga SS**, Abeyagunwardena IA, Dharmaratne SD. A comparison of transmissibility of SARS-CoV-2 Variants of Concern. Presented as an oral presentation at ***44th Annual Academic Sessions of the Kandy Society of Medicine*** Mar 2022. **Awarded the prize for Commendable Oral Presentation**

25. Sujeeva N, **Manathunga SS**, Balasooriya BMCM, Samarakoon SMPP, Gunawardena SA, Inthujah T, Wijayasuriya WAM, Arooran T, Katulanda GW. Practical Utility of Laboratory Data including D-dimers in COVID-19: A Multivariate Regression Model to Predict the Disease Severity. ***7th Annual Academic Sessions of College of Chemical Pathologists*** 2022. **Awarded the 1st place for the oral presentations category**

26. Randula Ranawaka, Prasad Chathurangana, Hasitha Liyanaarachchi, Prasanjith Dissanayake, Danushi Mihirani, **Manathunga SS**, Niranga Devanarayana, Shaman Rajindrajith. Health-related quality of life, personality and psychological maladjustment, emotional and behavioural problems and family impact in children with nephrotic syndrome. ***Annual Academic Sessions of College of Pediatrics*** 2022

27. Balasooriya BMCM, Sujeeva N, **Manathunga SS**, Samarakoon SMPP, Gunawardena SA, Inthujah T, Wijayasuriya WAM, Arooran T, Katulanda GW. Evaluation of the Association between Severity of Acute SARS-CoV-2 Infection and Vaccination: A Cross-Sectional Study on a Group of Patients Admitted to a Tertiary Care Hospital in Sri Lanka. ***7th Annual Academic Sessions of College of Chemical Pathologists*** 2022. **Awarded the 2nd place for the oral presentations category**

28. Ranawaka R, Chathurangana P, Liyanaarachchi H, Dissanayake P, Mihirani D, **Manathunga SS**, Devanarayana N, Rajindrajith S. 1183 Health-related quality of life, personality and psychological maladjustment, emotional and behavioural problems, and family impact in children with nephrotic syndrome. ***Royal College of Pediatrics and Child Health*** Jun 2022 in Liverpool

29. **Manathunga SS**, Balasooriya BMCM, Sujeeva N, Samarakoon SMPP, Gunawardena SA, Inthujah T, Wijayasuriya WAM, Arooran T, Katulanda GW. D-dimer, LDH and CRP as biomarkers for disease severity in covid-19 patients: a single centered observational study. ***Annual Academic Sessions of the Ceylon College of Physicians, in collaboration with the Royal College of Physicians*** 2022

30. **Manathunga SS**, Abeyagunwardena IA, Dharmaratne SD. Association of social, demographic, health and environmental factors with the incidence and mortality of covid-19; a global cross-sectional analytical study. Presented as an oral presentation at ***44th Annual Academic Sessions of the Kandy Society of Medicine*** Mar 2022

31. Abeyagunawardena IA, Atapattu AMJ, **Manathunga SS**, Lenadora SD, Gunawardena DLV, Weerahandi MP, Hemachandra EPGKG, Nanayakkara SDI. A study of heart rate variability in sportsmen engaged in different forms of sports in Sri Lanka. Presenting author (Oral presentation) at ***44th Annual Academic Sessions of the Kandy Society of Medicine*** Mar 2022

32. Abeyagunawardena IA, **Manathunga SS,** Dharmarathne SD. Estimation of the basic reproduction number for the novel Coronavirus disease in Sri Lanka Using the Navy Cluster. ***National Conference on COVID 19: Impact, Mitigation, Opportunities and Building Resilience, From Adversity to Serendipity. National Science Foundation*** 27-28 Jan 2021.

33. **Manathunga SS**, Abeyagunawardena I.A, De Silva E.S.K, Abeyagunawardena S. Accuracy of three machine learning techniques to detect ischemic heart disease using electrocardiogram. ***Annual academic sessions Sri Lanka College of Internal Medicine*** 2021

34. Kandauda C, Thilakarathna K.M.H.C, **Manathunga SS**, Abeyagunawardena I.A. Prediction of gestational diabetes using oral glucose tolerance test at booking visit. ***134th Anniversary International Medical Congress. Sri Lanka Medical Association*** 2021

35. **Manathunga SS**, Samath Dharmaratne, Ishanya Abeyagunawardena, Kasun Manchanayake, Mahen Kothalawala, Wasantha Gunathunga. Estimation of the basic reproduction number (R0) for the novel coronavirus disease in Sri Lanka. ***25th Annual Academic Sessions of the College of Community Physicians of Sri Lanka***. Vol 26 – special issue Sept 2020

Book chapters

1. Abeyagunawardena I.A, **Manathunga SS**., Dharmaratne S.D. Estimation of the basic reproduction number (R0) for the novel coronavirus disease in Sri Lanka using a cluster in a navy base. COVID 19: Impact, Mitigation, Opportunities and Building Resilience. National Science Foundation, ISBN 978-624-5896-00-4

Books – As Editor

1. **Getting ready for menopause** (Written in Sinhala), published by Sadeepa Publishers ISBN 978-955-661-999-7 First print 2020

University teaching experience

1. MED2214 Foundation in Pharmacology
    - Undergraduate course in Medicine
    - Year 3 semester 1
    - Faculty of Medicine, University of Peradeniya

2. MED3120 Drugs acting on the Cardiovascular, Respiratory, Skeletal and Endocrine systems
    - Systemic Pharmacology I
    - Undergraduate course in Medicine
    - Year 3 semester 1
    - Faculty of Medicine, University of Peradeniya

3. MED3225 Drugs acting on the Nervous, Gastrointestinal and Genitourinary systems
    - Systemic Pharmacology II
    - Undergraduate course in Medicine
    - Year 3 semester 2
    - Faculty of Medicine, University of Peradeniya

4. Visiting: Systematic Pharmacology
    - Department of Nursing
    - Faculty of Allied Health Sciences, University of Peradeniya

5. Visiting: Applied Epidemiology
    - Exploratory data analysis with R
    - Postgraduate Institute of Science, University of Peradeniya

Technical Expertise

- Exploratory Data Analysis and Visualization, Predictive Modeling, Machine Learning, stochastic processes and statistical analysis with R language, Bayesian inference modelling with Stan and R wrappers

- Full-stack Web Development
    - Back-end development (nodeJs, Rust)
    - Database management (MongoDB, SQL)
    - Front-end development (HTML, CSS, Javascript, AngularJS, ReactJS)
    - Web dashboards (Shiny)

- Natural Language Processing, Large Language Models and Retrieval Augmented Generation

Health informatics and data science projects

Github: https://github.com/ssm123ssm

- A real-time interactive dashboard for Dengue status in Gothatuwa MOH area, to identify trends of spread and hotspots (2018 – 2023)
    - Developed dashboard for the Ministry of Health area of Gothatuwa using RShiny
    - Live dashboard available at https://supun-manathunga.shinyapps.io/Dengue_Watch/

- An HLA matching software for the Thalassemia Circle Sri Lanka not-for-profit organization to identify potential matches for bone marrow transplantation
    - https://supun-manathunga.shinyapps.io/HLA_matcher/

- AI based continuous monitoring of exam performance in medical students
    - This program was developed at the Department of Pharmacology, Faculty of Medicine, University of Peradeniya, for internal use.
    - It automatically analyzes the series of past examination marks for Pharmacology for year-3 students.
    - The purpose is to identify students at risk of poor performance in subsequent examinations.

- Retrieval Augmented Generation Powered Drug Information System
    - This program was developed for the use of year 3, semester 2 students who are taking the Systemic Pharmacology 2 module.
    - It allows students to extract reliable drug information using natural language.
    - The model utilizes a database curated from knowledge obtained from over 200,000 FDA labels.
    - It formulates answers to queries by leveraging the power of a large language model.

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- Automatic Essay Scoring System for the Department of Pharmacology, Faculty of Medicine, University of Peradeniya (http://dx.doi.org/10.1186/s12909-025-07718-2)
    - This program utilizes large language models (LLMs) for Automated Essay Scoring (AES) based on instructor-provided rubrics.
    - Short answer questions, model responses, and rubrics from the Systematic Pharmacology course were provided as input to the LLM.
    - For student answers, the LLM extracts relevant excerpts, assigns scores according to the rubric criteria, and provides feedback.
    - The evaluations were conducted using GPT-4, with final scores calculated as the median of 5 temperature-sampled runs.