

CURRICULUM VITAE

PERSONAL INFORMATION

Name: **Prof. Jayantha Lanel**

Designation: Professor in Mathematics

Birth Date: January 23, 1974

Marital Status: Married

Gender: Male



CONTACT INFORMATION

Department of Mathematics
University of Sri Jayewardenepura
Nugegoda
Sri Lanka

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EDUCATION

Oakland University, Rochester, Michigan, USA

- Ph.D., Applied Mathematics, April 2009 (GPA:3.91)

- * Dissertation Topic: “Complex Root Isolation”.

- * Supervisor: Professor Charles Ching-An Cheng

- M.A., Applied Mathematics, December 2006 (GPA:3.69)

University of Sri Jayewardenepura, Nugegoda, Colombo, Sri Lanka

- M.Sc.(Merit), Industrial Mathematics, December 2002 (GPA:3.52)

- * Thesis Topic: “A third order convergent method for finding roots of non-linear equation”

- * Supervisor: Professor Sunethra Weerakoon

- CTHE (Certificate Course in Teaching in Higher Education), December 2012 (GPA:3.71)

The Open University, Nugegoda, Colombo, Sri Lanka

- B.Sc.(1st class Honours), Mathematics, December 1999 (GPA:3.71)

Bandarawela Central College, Bandarawela, Sri Lanka

- G.C.E. Advanced Level Examination,1992

Naulla National School, Demodara, Bandarawela, Sri Lanka

- G.C.E. Ordinary Level Examination,1989

Piyarapandowa Elementary School, Piyarapandowa, Bandarawela, Sri Lanka

- Fifth Grade Scholarship Examination, 1984

RESEARCH
INTERESTS

- Major: Graph Theory and its Applications (Mainly: Algebraic and Chemical Graph theory, Multilayer, Epidemiology, and Social Networks)
- Minor: Optimization, Deep Learning

MATHEMATICAL
EXPERTISE

Graph Theory, Computer Algebra, Algorithmic Analysis, Engineering Mathematics, and Numerical Analysis

HONORS AND
AWARDS

Oakland University

- *Certificate of Merit* for Outstanding Academic Achievement (STA 614), fall 2005
- *Certificate of Merit* for Outstanding Academic Achievement (STA 613), winter 2005

Sri Jayewardenepura University

- *Research Award* for the publication in Refereed and Index Journals in 2024, 2025
- *Research Award* for the publication in Refereed and Index Journals in 2021, 2022, 2023
- *Research Award* for the publication in Refereed Journals in 2020
- *Research Award* for the publication in Index Journals in 2019
- *Research Award* for the publication in Refereed Journals in 2018
- *Research Award* for the publication in Refereed and Index Journals in 2017
- *Research Award* for the publication in Refereed and Index Journals in 2016
- *Research Award* for the publication in Refereed Journals in 2015
- *Research Award* for the publication in Index Journals in 2014
- *Certificate of Achievement* Professional Development Program (Team Endeavor) Conducted by the Academy of Adventure-Belihuloya, 2012
- *Merit pass* in the Industrial Mathematics Degree Program, 2002

The Open University

- *A first-class honors pass* in the Bachelor of Science Degree Program, 1999
- *D. B. Ellepola Gold Medal Award* for the best performance in the Bachelor of Science Degree Program, 1999
- *Prize* for the best performance in Mathematics in the Bachelor of Science Degree Program, 1999

ACADEMIC EXPERIENCE

University of Sri Jayewardenepura, Nugegoda, Sri Lanka

- *Professor in Mathematics* November 24, 2022- to date
- *Senior Lecturer (Grade I) in Mathematics* March 15, 2017- Nov. 23, 2022
- *Senior Lecturer (Grade II) in Mathematics* October 13, 2010 - March 14, 2017
- *Visiting Lecturer(**Algorithms and Optimization Methods**)*, Faculty of Engineering, 2019, 2020, 2021, 2022, 2023, and 2024
- *Visiting Lecturer(**Engineering Mathematics V (Numerical Methods)**)*, Faculty of Engineering, 2019 and 2020
- *Visiting Lecturer(**Graph Theoretic Applications**)*, Pg. Diploma/M. Sc. in Industrial Mathematics 2013, 2016, 2018, and 2024
- *Visiting Lecturer(**Computational Mathematics**)*, Pg. Diploma/M. Sc. in Industrial Mathematics 2015, 2017, and 2024
- *Visiting Lecturer(**Mathematics I**)*, Faculty of Technology, Jan 2017 - June 2017
- *Visiting Lecturer(**Ordinary Differential Equations**)*, Pg. Diploma/M. Sc. in Industrial Mathematics March 2012 - December 2012

University of Colombo, Sri Lanka

- *Visiting Lecturer(**Discrete Mathematics I**)*, Department of Information System and Engineering, School of Computing March 2019 - July 2019
- *Visiting Lecturer(**Discrete Mathematics II**)*, Department of Computer Science, School of Computing August 2019 - December 2019

The Open University, Nugegoda, Colombo, Sri Lanka

- *Visiting Lecturer(**Fluid Mechanics**)*, Department of Mathematics November 2015, 2017, and 2019
- *Instructor* May 2000 - June 2003

General Sir John Kotelawala Defence University (KDU), Rathmalana, Colombo, Sri Lanka

- *Visiting Lecturer*(**Modeling and Simulation**), *Department of Computer Science, Faculty of Computing* 2018, 2019, 2020, 2021, and 2022

Sri Lanka Institute of Information Technology (SLIIT), New Kandy Rd, Malabe 10115, Sri Lanka

- *Visiting Lecturer, Faculty of Engineering* February 2020-June 2020
- *Visiting Lecturer, Faculty of Humanities and Sciences* February 2020-June 2020
- *Senior Lecturer (Higher Grade)/Head-Mathematics Unit, Faculty of Humanities and Sciences* 15th February 2019-14th February 2020

University of Vocational Technology (UoVT), Rathmalana, Colombo, Sri Lanka

- *Visiting Lecturer*(**Mathematics for ICT II**), *Faculty of Information Technology* 2021,2023,and 2024
- *Visiting Lecturer*(**Mathematics for ICT I**), *Faculty of Information Technology* 2021, 2022
- *Visiting Lecturer*(**Mathematics for ICT I-Foundation Programme**), *Faculty of Information Technology* Semester 1-2022

Royal Institute of Colombo, Colombo, Sri Lanka

- *Visiting Lecturer*(**Further Calculus, Further Mathematics for Economists**), *Economics, Management, Finance and the Social Sciences Degree Programme, University of London* 2023/2024

Oakland University, Rochester, Michigan, USA

- *Special Lecturer* September 2009 - June 2010
- *Lecturer* June 2008 - August 2008 and June 2009 - August 2009
- *Teaching Assistant* January 2004 - April 2009

Oakland Community College, Highland Lakes Campus, Waterford, Michigan, USA

- *Adjunct Faculty* September 2009 - June 2010

Oakland Community College, Royal Oak Campus, Royal Oak, Michigan, USA

• *Adjunct Faculty*

January 2010 - June 2010

KEYNOTE
ADDRESS

- Delivered a keynote address at the **International Conference on Applied Mathematics and Computing (ICAMC)** held on 19th February 2025 at the Department of Applied Mathematics, Bharathiar University, Coimbatore, India.
- Delivered the Presidential Address of Section E1 of Sri Lanka Association for the Advancement of Science (SLAAS) on Applications of Graph Theory at the **Annual session of SLAAS, 2015.**

INVITED TALKS

- Delivered a talk entitled **Recent trends in Graph Theory** at the **International Conference on Applied Mathematics and Computing (ICAMC)** held on 19th February 2025 at the Department of Applied Mathematics, Bharathiar University, Coimbatore, India.
- Delivered a talk entitled **Analysis of the Dynamic Nature of Multiplex Networks** at the **International Conference on Nonlinear Dynamics: Modeling and Computation (ICNDMC)** held on 19th February 2025 at the Department of Mathematics, Bharathiar University, Coimbatore, India.
- Delivered a talk entitled **Analysis of the Dynamic Nature of Epidemic Network** at the **International Conference on Advances in Differential Equations and Numerical Analysis (ICADENA)** held on 20th February 2025 at the Department of Mathematics, Periyar University, Salem, India.
- Delivered a talk entitled **Recent Advances and Development in Topological Indices** at the **International Conference on Applied Mathematics, Automation and Computing (ICAMAC 2025))** held on 21st February 2025 at the Department of Mathematics, Kongu Engineering College, Erode, India.
- Delivered a talk entitled **Recent Advances and Development in Topological Indices** at the **International seminar on New Advances in Graph Theory (Hybrid Mode)** held on 28th February 2025 at the Department of Mathematics, Lady Doak College, Madurai, India.
- Invited as the Chief Guest and delivered a talk on the "Beauty of Mathematics" at a prize-giving ceremony of Hindu College, Colombo, 2018.
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COURSES OR
MODULES
TAUGHT

University of Sri Jayewardenepura, Nugegoda, Sri Lanka

- **Department of Mathematics, Faculty of Applied Sciences**
 - MAT 201 2.0 Numerical Methods with MATLAB (Sem. I-2011)

- MAT 456 1.5 Applied Mathematical Techniques (Sem. 1-2011)
- MAT 329 1.0 Mathematical Modeling I (Sem. 2-2011)
- MAT 482 2.0 Advanced Numerical Techniques (Sem. 2-2011)
- MAT 302 2.0 Complex Analysis (Sem. 1-2012,2013,2014, 2015,2017)
- MAT 455 2.0 Graph Theory (Sem. 1-2012,2013,2014,2016)
- MAT 329 1.0 Mathematical Modeling I (Sem. 2-2012)
- MAT 482 2.0 Advanced Numerical Techniques (Sem. 2-2012)
- MAT 377 2.0 Complex Variables (Sem. 2-2012,2013,2014,2016,2017)
- MAT 327 1.5 Numerical Methods II (Sem. 2-2013)
- MAT 331 1.0 Algorithms and Complexity (Sem. 2-2013,2014,2015,2016,2017,2018)
- MAT 353 2.0 (APS 432 2.0) Computational Mathematics (Sem. 1-2015,2016,2017)
- MAT 453 2.0 Ring Theory (Sem. 1-2015)
- MAT 127 2.0 Calculus II (Sem. 2-2015)
- MAT 455 2.0 (APS 423 2.0) Graph Theory (Sem. 1-2017,2018)
- AMT 211 2.0 Design and Analysis of Algorithms (Sem. 1-2018,2020,2021,2022,2023,2024)
- AMT 223 1.0 Discrete Mathematics (Sem. 2-2018)
- MAT 122 2.0 Calculus (Sem. 2-2018)
- AMT 353 2.0 Computer Algebra (Sem. 1-2019,2020,2021,2022,2023,2024,2025,2026)
- AMT 313 1.0 Computational Discrete Mathematics (Sem. 1-2020)
- MAT 353 3.0 Graph Theory (Sem. 2-2020,2021,2022,2023,2024,2025)
- MAT 454 2.0 Computational Mathematics (Sem. 2-2020,2021,2022,2023,2024)
- AMT 454 2.0/ASP 423 2.0 Graph Theory with Applications (Sem. 1-2021,2022,2023,2024,2025,2026)

- **Faculty of Technology**

- FOT 11301 Mathematics I-2017

- **Department of Interdisciplinary Studies, Faculty of Engineering**

- IS 3201 Algorithms and Optimization Methods-2019,2020,2021,2022,2023,2024,2025,2026
- IS 2202 Engineering Mathematics IV (PDE)-2019(only 2 lectures)
- IS 2305 Engineering Mathematics V (Numerical Analysis)-2019
- IS 2305 Engineering Mathematics V (Numerical Analysis)-2020

- **Faculty of Computing**

- CCS4052 Mathematical Modeling and Simulation-2026

School of Computing, University of Colombo, Sri Lanka

- IS 1006 Discrete Mathematics-2019
- SCS 2210 Discrete Mathematics II-2019

Faculty of Natural Sciences, The Open University, Nugegoda, Colombo, Sri Lanka

- APU 3150 Fluid Mechanics-2015,2017
- ADU 5306 Fluid Mechanics-2019

Faculty of Computing, General Sir John Kotelawala Defence University (KDU), Rathmalana, Colombo, Sri Lanka

- CS 3182 Modeling and Simulations-2018,2019,2020,2021,2022

Sri Lanka Institute of Information Technology (SLIIT), New Kandy Rd, Malabe 10115, Sri Lanka

- Faculty of Engineering
 - MA 1302 Engineering Mathematics I (Sem. 1 -2019)
 - MA 2302 Engineering Mathematics III (Sem. 1 -2019,2020)
 - MA 1312 Engineering Mathematics II (Sem. 2 -2019)
- Faculty of Humanities and Sciences
 - MA 1034 Differential Calculus (Sem. 2 -2019)
 - MA 1034 Integral Calculus (Sem. 1 -2020)

University of Vocational Technology (UoVT), Rathmalana, Colombo, Sri Lanka

- IT103011 Mathematics for ICT I (Sem. 1-2021,2022)
- IT203201 Mathematics for ICT II (Sem. 2-2021,2022,2023,2024)
- IT103011 Mathematics for ICT Foundation Programme (Sem. 1-2022)

Royal Institute of Colombo, Colombo, Sri Lanka (Further Calculus, Further Mathematics for Economists), Economics, Management, Finance and the Social Sciences Degree Programme, University of London)

- MT2176 Further calculus-2023
- MT3095 Further mathematics for economists-2023

Oakland University, Rochester, Michigan, USA

- MTH 011 College Algebra (Fall 2009)
- MTH 141 Precalculus (Winter 2010)

Oakland Community College, Highland Lakes Campus, Waterford, Michigan, USA

- MAT 1100 Elementary Algebra (Fall 2009)
- MAT 1100 Elementary Algebra (Winter 2010)
- MAT 1540 College Algebra (Summer 2010)

Oakland Community College, Royal Oak Campus, Royal Oak, Michigan, USA

- MAT 1540 College Algebra (Winter 2010)

PUBLICATIONS

SCIENCE CITATION INDEX EXPANDED

1. Wijerathne, H.M.C.; Lanel, J.; Perera, K.; Wanigasekara, C. *On Order Degree Problem for Moore Bound*. *Axioms*(**Q1-SCImago, Web of Science**) 2025, 14, 802. <https://doi.org/10.3390/axioms>
2. H. Abeynanda, C. Weeraddana, G. H. J. Lanel and C. Fischione, "On the Primal Feasibility in Dual Decomposition Methods Under Additive and Bounded Errors," in *IEEE Transactions on Signal Processing* (**Q1-SCImago**), vol. 71, pp. 655-669, 2023, doi: 10.1109/TSP.2023.3249043.
3. C.P. Waduge, N.C. Ganegoda, D.C. Wickramarachchi, R.S. Lokupitiya, G.H.J. Lanel, *A group of representative measures of a set of time series and its decision support: a trial for dengue incidence data of Sri Lanka*, *International Journal of Information and Decision Sciences* (**Q3-SCImago**), Volume 14, No 3, pp. 260-288, 2022
4. G. H. J. Lanel, T. M. K. K. Jinasena and B. A. K. Welihinda, "Semidirect Products of Finite Groups in Public-Key Cryptographic Protocols", *Journal of Information Science and Engineering* (**Q4-SCImago**), Vol. 38 No. 5 pp. 1035-1050, 2022.
5. G. H. J. Lanel, T. M. K. K. Jinasena and B. A. K. Welihinda, "Cryptographic Protocols using Semi-direct Products of Finite Groups", *International Journal of Computer Science and Network Security* (**Q3-SCImago**), Vol. 21 No. 8 pp. 17-27, 2021.
6. G. H. J. Lanel, T. M. K. K. Jinasena and B. A. K. Welihinda, "A Survey of Public-key Cryptography over Non-abelian Groups", *International Journal of Computer Science and Network Security* (**Q3-SCImago**), Vol. 21 No. 4 pp. 289-300, 2021.
7. Hansi K. Abeynanda, G. H. J. Lanel, "A Study on Distributed Optimization over Large-Scale Networked Systems", *Journal of Mathematics* (**Scopus, Web of Science**), vol. 2021, Article ID 5540262, 19 pages, 2021.

8. GHJ Lanel, HK Pallage, JK Ratnayake, S Thevasha, BAK Welihinda, *A survey on Hamiltonicity in Cayley graphs and digraphs on different groups*, Discrete Mathematics, Algorithms and Applications (**Q3-SCImago**), October 2019.
9. G.H.J. Lanel, C.C. Cheng. *The Number of Complex Roots of a Univariate Polynomial Within a Rectangle*, Springer Proceedings in Mathematics and Statistics (**Q4-SCImago, Scopus**), Singapore, vol. 2, Number 2, pp. 41, 2014.
check
10. Gunawardhana, D. C.,Lanel, G. H.J.,Lakshani, M. G.N., *Revan indices for the hexadentate-3-hydroxypyridinones-terminated dendrimers*, Journal of the National Science Foundation of Sri Lanka (**Q3-SCImago, Scopus**), vol. 54(1), pp. 3–16, 2026.
11. Dilpriya, T. A.H., Lanel, G. H.J., Perera, Mannage Thushara, Vidanage, B. V.N.C., *Hybrid neural network models for predicting S & P 500 Index closing prices: a deep learning approach for the New York stock exchange*, Transformative Applied Research: Breakthrough Research in a Changing WorldOpen source preview (**Scopus**), pp. 221–227, 2026.
12. Wijerathne, H. M.C.,Lanel, G. H.J.,Perera, K. K.K.R., Wanigasekara, Chathura, *Maximum Degree Diameter Bounded Subgraph Problem for Square-Octagonal Lattice*, 2025 Global Conference in Emerging Technology, GINOTECH 2025 Open source preview (**Scopus**), 2025.
13. Jayarathna, D. G.N.D., Lanel, G. H.J., Juman, Z. A.M.S, *A contemporary recapitulation of major findings on vehicle routing problems: Models and methodologies*, International Journal of Recent Technology and Engineering Open source preview (**Scopus**), 8(2 Special Issue 4), pp. 581–585, 2019.

ANY OTHER INDEXED JOURNALS

1. T A H Dilpriya, G H J Lanel, B V N C Vidanage. *A Strategy to Strengthen and Enhance the Telecommunication Network in Sri Lanka by Using Concepts of Graph Theory and Linear Programming Models*, International Journal of Natural Sciences Research, Conscientia Beam, vol. 10(1), pp 1-20, 2022.
2. DGND Jayarathna, GHJ Lanel, ZAMS Juman, *Industrial vehicle routing problem: a case study*, Journal of Shipping and Trade, Volume 7, Issue 1, PP 1-27, 2022.
3. DGND Jayarathna, GHJ Lanel, ZAMS Juman, *An Intelligent Cost-Optimized Warehouse and Redistribution Root Plan with Truck Allocation System; Evidence From Sri Lanka*, Journal of Business and Social Science Review, Volume 2, Issue 11, PP 23-39, 2021.
4. DGND Jayarathna, GHJ Lanel, ZAMS Juman, *Modeling a cost benefit transportation model to optimize the redistribution process: Evidence study from Sri*

- Lanka*, Journal of Sustainable Development of Transport and Logistics, Volume 6, Issue 2, PP 43-59, 2021.
5. DGND Jayarathna, GHJ Lanel, ZAMS Juman, *Survey on Ten Years of Multi-Depot Vehicle Routing Problems: Mathematical Models, Solution Methods and Real-Life Applications*, Journal of Sustainable Development Research, Volume 3, Issue 1, PP 36-47, 2021.
 6. Nuwan Jayarathna, Jayantha Lanel, ZAMS Juman, *Five years of multi-depot vehicle routing problems*, Journal of Sustainable Development of Transport and Logistics, Volume 5, Issue 2, PP 109-123, 2020.
 7. G.H.J. Lanel, *A third order convergent method for solving nonlinear equations*, International Organization of Scientific Research-Journal of Mathematics (IOSR-JM), Volume 16, Issue 6, PP. 25-29, December 2020.
 8. Dias KMGIU, Perera BBR, Lanel GHJ, Rodrigo DS, Tharaka JAD, Samarakoon MASC, *Analysing the Time of Bed Availability in Intensive Care Unit of Accident and Orthopaedic Department Using Survival Analysis*, Asian Journal of Multidisciplinary Studies, Volume 7, Issue 8, PP 52-57, 2019.
 9. Jayarathna DGND, Lanel GHJ, Juman ZAMS, *A CONTEMPORARY RECAPITULATION OF MAJOR FINDINGS ON VEHICLE ROUTING PROBLEMS: MODELS AND METHODOLOGIES*, A CONTEMPORARY RECAPITULATION OF MAJOR FINDINGS ON VEHICLE ROUTING PROBLEMS: MODELS AND METHODOLOGIES, International Journal of Recent Technology and Engineering (IJRTE), Volume 8, Issue 2S4, PP 581-585, 2019.
 10. A.A.T. Thattharani and G.H.J. Lanel, *A Model To Reduce Traffic Congestion in Colombo City*, International Journal of Scientific and Research Publications, Volume 6, Issue 6, PP 768-773, 2019.
 11. K.P.T. Dayan, G.H.J. Lanel, U.S.V. LakmaL, *Identifying the Optimum Path and the Positions of the Bends in PVC and DI Pipes in Underground Water Lines*, International Organization of Scientific Research-Journal of Mathematics (IOSR-JM), Volume 15, Issue 2, PP 56-61, 2019.
 12. E.A.C.T. Sandamali, G.H.J. Lanel, H.S.S.P. Jayawardena, M.A.S.C. Samarakoon, *Analysis of the Queue at Neuro-Trauma Centre of National Hospital in Sri Lanka*, International Organization of Scientific Research-Journal of Mathematics (IOSR-JM), Volume 13, Issue 6, PP. 47-54, 2018.
 13. M.G.R.U.K. Ferdinandes, G.H.J. Lanel, M.A.S.C. Samrarakoon, *A Queuing Model to Optimize the Performance of Surgical Units*, International Journal of Advanced Engineering Research and Science (IJAERS), Volume 4, Issue 5, PP 119-123, 2017.
 14. B. M. Y. U. A. Batugedara and G. H. J. Lanel, *Designing the traffic phases using graph colouring and book thickness to reduce the traffic for a selected junction in Colombo city*, International Journal of Advanced Research (IJAR), Volume 5, Issue 3, PP 1577-1582, 2017.

15. S. K. Devanarayana, G. H. J. Lanel, *Develop a model to map client's people development requirements and the delivery of the service to achieve effective results*, International Journal of Advanced Engineering Research and Science (IJAERS) ,Volume 4, Issue 3, PP 162-165, 2017.
16. P.H.H.P.N. De Silva, G.H.J. Lanel and M.T.M. Perera, *Integer Quadratic Programming (IQP) Model for Cut Order Plan*, International Organization of Scientific Research-Journal of Mathematics (IOSR-JM), Volume 13, Issue 2, Ver. II, PP 76-80, 2017.
17. M.T.M. Perera, G.H.J. Lanel, *A Model to Optimize University Course Timetable Using Graph Coloring and Integer Linear Programming*, International Organization of Scientific Research-Journal of Mathematics (IOSR-JM), Volume 12, Issue 5, PP. 13-18, 2016.

REFEREED JOURNALS

1. GHJ Lanel, Abeyrathne RBAH. A Study On Graph Theory Properties In Human Blood Circulatory System. International Journal of Scientific and Research Publications. Volume 11, Issue 10, pp 444-455, 2021.
2. GHJ Lanel, PWCE Pathirane. Developing a New Paper Structure For The GCE (O/L) Mathematics Paper Using Graph Theory. International Journal of Scientific and Research Publications. 2020;10:426-432.
3. UVCH Subasinghe, GHJ Lanel. An Efficient Automated Timetable for Distance Education of the Open University of Sri Lanka. International Journal of Scientific and Research Publications. 2020;10:615-621.
4. GHJ Lanel, TMKK Jinasena, BAK Welihinda. HAMILTONIAN CYCLES IN CAYLEY GRAPHS OF SEMIDIRECT PRODUCTS OF FINITE GROUPS. European Modern Studies Journal [Internet]. 2020;4:1-19.
5. EACT Sandamali GHJ Lanel. A Study on Graph Theory Properties of Constellations. European Modern Studies Journal. 2020;4:131-143
6. GHJ Lanel, HSSP Jayewardene. A Study on Graph Theory Properties of Online Social Networks. International Journal of Scientific and Research Publications. 2020;10:267-274.
7. EACT Sandamali, GHJ Lanel. A Use of Graph Theory Properties of Constellations in Stellar Colonization. European Modern Studies Journal. 2020;4:144-154
8. K.M.G.I.U. Dias, B.B.R.Perera, G.H.J.Lanel, D.S.Rodrigo, J.A.D.Tharaka and M.A.S.C.Samarakoon, *Analysing the Time of Bed Availability in Intensive Care Unit of Accident and Orthopaedic Department Using Survival Analysis*, Asian Journal of Multidisciplinary Studies (IJMS), Volume 7, Issue 8, pp. 52-57, ISSN: 2321-8819, August 2019

9. M.G.R.U.K. Ferdinandes, G.H.J. Lanel, H.K. Pallage, N.K. Angulgamuwa, *Enhancing the Work Performance of Coastal and Suburban Division of Sri Lanka Fort Railway Station Using Graph Coloring*, International Journal of Emerging Technology and Innovative Engineering (IJETIE), Volume 2, Issue 2, pp. 93-99, ISSN: 2394-6598, February 2016
10. P. A. D. Dilrukshi, H. D. I. M. Nirmanamali, G. H. J. Lanel, M. A. S. C. Samarakoon, *A Strategy to Reduce the Waiting Time at the Outpatient Department of the National Hospital in Sri Lanka*, International Journal of Scientific and Research Publications (IJSRP), Volume 6, Issue 2, pp. 281-287, ISSN 2250-3153, February 2016
11. S.A.S. Sureni Wickramasooriya, Thisal M. Weerasekara, G.H. Jayantha Lanel, T.P. de Silva, N.C. Ganegoda, *A cryptographic method to send a secret route or map to a receiver using concepts in graph theory and number theory*, International Journal of Engineering and Applied Sciences (IJEAS), Volume 2, Issue 12, December 2015
12. Ferdinandes, M.G.R.U.K., Pallage, H.K., Lanel, G.H.J. and Angulgamuwa, A.N.K.. *An Improved Strategy to Reduce the Passenger Traffic at Coastal and Suburban Area Division of Sri Lanka Fort Railway Station Ticketing Counters*, International Journal of Information Research and Review (IJIRR), Volume 2, Issue 7, pp. 909-913, July 2015
13. G.K.H. Thondilege, G.H.J. Lanel, P.D.A.G.D. De Almeida. *Possibilities of Sharing Multi-Species in a Cage Based on Their Food Preference Using Graph Coloring Technique*, International Journal of Scientific and Research Publications (IJSRP), Volume 5, Issue 3, ISSN 2250-3153, March 2015

BOOKS

1. Sathyakala Alagirisamy, Sangeetha Murugesaan, Rajam Kumar, and Jayantha Lanel. *A chapter on "Fuzzy Optimization Techniques in Agricultural Field Using Supply Chain Management"*, in the book *Intelligent Computing and Optimization for Sustainable Development*, ISBN: 9781032625829 (ebk), First edition, CRC Press 2385 NW Executive Center Drive, Suite 320, Boca Raton FL, 2025
2. G.H. Jayantha Lanel. *A chapter on "The Number of Complex Roots of a Univariate Polynomial Within a Rectangle"* (*Papers from the 3rd International Conference on Computational Mathematics and Computational Geometry*) in the book *Forging Connections between Computational Mathematics and Computational Geometry*, ISBN 978-3-319-16138-9, Springer Proceedings in Mathematics and Statistics Volume 124, 2016
3. G.H. Jayantha Lanel. *Complex Root Isolation*, ISBN-978-639-51444-5, Scholar's Press, Heinrich-Boecking Str. 6-8 D - 66121 Saarbrücken, Germany, 2013

4. G.H. Jayantha Lanel. *Complex Root Isolation*, ISBN-10: 1243635053, ISBN-13: 978-1243635051, ProQuest, UMI Publishing, Michigan, USA, 2011
5. G.H.Jayantha Lanel. *Complex root isolation of univariate polynomials*. Ph. D. Thesis, Oakland University, USA, 2009

CONFERENCE AND PROCEEDING

1. Ranasingha, W.H.S.M., Senaratna, K.M.J.I.B., Faham, M.A.A.M., Gunawardhana, D.C. & Lanel, G.J.(2025). *Novel Modified Topological Indices of Anti-cancer Drugs*. In *Proceedings of Annual Science Research Sessions-2025(ASRS2025)*. Faculty of Applied Sciences, South Eastern University of Sri Lanka, Sammanthurei, pp 36
Note: **Ms. W.H.S.M. Ransingha got the best presenter award for this.**
2. Gunawardhana, D.C., Sino, A.M.F.S., Moulis, K., Perera, K.K.K.R. & Lanel, G.J. (2025) *Rehan-Lanel indices of Anti-tuberculosis drugs*. In *Proceedings of Annual Science Research Sessions-2025(ASRS2025)*. Faculty of Applied Sciences, South Eastern University of Sri Lanka, Sammanthurei, pp 38
Note: **Ms. A.M.F.S. Sino got the best presenter award for this.**
3. Gunawardhana, D.C., Sino, A.M.F.S., Moulis, K., Perera, K.K.K.R. & Lanel, G.J. (2025) *Revan Topological indices of Supramolecular Fushine Acid Useful in Medical Applications*. In *Proceedings of Annual Science Research Sessions-2025(ASRS2025)*. Faculty of Applied Sciences, South Eastern University of Sri Lanka, Sammanthurei, pp 39
4. Gunawardhana, D.C., Lanel, G.J., & Lakshani, M.G.N.(2025) *Degree-based topological indices of Leprosy Drugs Using The M-Polynomial Approach*. In *Proceedings of Annual Science Research Sessions-2025(ASRS2025)*. Faculty of Applied Sciences, South Eastern University of Sri Lanka, Sammanthurei, pp 40
5. Sameesha R.D., Lanel G.J., Galwatta L., *A MODEL TO ASSESS COSTS AND BENEFITS OF OCCUPATIONAL HEALTH AND SAFETY MEASURES IN SRI LANKA*, Symposium "Uni-In Alliance 2025" of B.Sc. (Honors) Degree in Applied Sciences, University of Sri Jayewardenepura, pp. 66, 2025
6. Premarathna K.P.C.M., Lanel G.J., Jayasekara N.S., *IMPACT ASSESSMENT OF RESEARCH OUTPUTS FUNDED BY THE NATIONAL RESEARCH COUNCIL OF SRI LANKA* , Symposium "Uni-In Alliance 2025" of B.Sc. (Honors) Degree in Applied Sciences, University of Sri Jayewardenepura, pp. 68, 2025
7. Lakshani, M.G.N., Lanel, G.J., Gunawardhana, D.C. (2025, August). Degree-based topological indices of leprosy drugs. In *Proceedings Book of the 11 th Consecutive Annual Undergraduate Research Symposium "UNI-IN ALLIANCE 2025"*. p. 65. <https://science.sjp.ac.lk/insoc/2025/08/26/symposium-e-book-release-2025/>

8. Lakshani, M.G.N., Lanel, G.J., Gunawardhana, D.C. (2025, October). Degree-based topological indices of gonorrhea drugs. 6 th International Conference on Pure and Applied Sciences. (Accepted).
9. Lakshani, M.G.N., Lanel, G.J., Gunawardhana, D.C. (2025, November). M-polynomial analysis of degree-based topological indices in gonorrhea drug molecules. PGIS RESCON Research Conference 2025 (Postgraduate Institute of Science University of Peradeniya). (Accepted).
10. Lanel G.H.J., Thivarna S.A.O., *Graph theory analysis of human physiology: Ranking human body systems, organs, hormones, and effects*, Proceedings of 12th Ruhuna International Science and Technology Conference, RISTCON 2025, University of Ruhuna, pg 117.
11. Lanel G.H.J., Sameesha R.D., *A personalized hair shampoo recommend system based on hair type and condition using graph theory*, Proceedings of 12th Ruhuna International Science and Technology Conference, RISTCON 2025, University of Ruhuna, pg 116.
12. Gunawardhana D.C., and Lanel G.H.J., *CONTRA-HARMONIC INDEX AND POLYNOMIAL OF NANOTUBES AND NANOTORUS*, Proceedings of 13th Annual Science Research Session, 2024, Faculty of Applied Sciences, South Eastern University of Sri Lanka, pg 55.
13. Divyanjalee K.A.S., and Lanel G.H.J., *GRAPH THEORY APPROACHES ON MOVIE RECOMMENDATION SYSTEM*, Proceedings of 13th Annual Science Research Session, 2024, Faculty of Applied Sciences, South Eastern University of Sri Lanka, pg 59.
14. Chamathka W.B.M.R., and Lanel G.H.J., *GRAPH REPRESENTATION OF TONAL MODULATION*, Proceedings of 13th Annual Science Research Session, 2024, Faculty of Applied Sciences, South Eastern University of Sri Lanka, pg 69.
15. Lanel G.H.J. and Priyanvada K.H.H., *Application of Dijkstra's algorithm to find the shortest paths between selected travel destinations in Colombo*, Proceedings of 11th Ruhuna International Science and Technology Conference, RISTCON 2024, University of Ruhuna, pg 117.
16. Hansi Abeynanda, Jayantha Lanel G.H., *Convergence of Gradient Methods with Deterministic and Bounded Noise*, Proceedings of SLIIT International Conference on Advancements in Sciences and Humanities, Oct. 2022, Colombo, pp 189-195.
17. G. Thondilege, G. H. J. Lanel, and R. G. N. Meegama, *Numerical approach for improved median filter*, 5th Student-STAFF Research Conference (SSRC22), School of Computer Science and Engineering, University of Westminster, UK, 2022.
18. HMC Wijerathne, GHJ Lanel, KKKR Perera, *Review on Maximum Degree Diameter Bounded Subgraph Problem*, Proceedings of SLIIT International Con-

- ference on Advancements in Sciences and Humanities, 3-4 December 2021, Colombo, pp 12-24.
19. W.D.G.M. Wickramasinghe, O.C.D. Silva, H.S. Gayashani, and G.H.J. Lanel, *A strategy to solve traveling problems of workers in Colombo using Sri Lanka Railway*, Sri Lanka Association for the Advancement of Science (SLAAS), Colombo, 504/E1, pp. 84, 2019
 20. M.D.D. Manohari, M.F.F. Shafka, D.S. Rodrigo, G.H.J. Lanel, G.J.K. Silva, *Analysis of fatal accidents in Sri Lanka*, Sri Lanka Association for the Advancement of Science (SLAAS), Colombo, 513/E1/Poster, pp. 164, 2019
 21. Jayarathna DGND, Lanel GHJ, Juman ZAMS, *MODELING OF AN OPTIMAL TRANSPORTATION SYSTEM (A CONTEMPORARY REVIEW STUDY ON VEHICLE ROUTING PROBLEMS)*, 4th International Conference on Research and Modern Innovations in Engineering and Technology, June 2019
 22. De Silva W.R.D., Lanel G.H.J., *Study and Analysis of work-flow models using graph theory*, Symposium "Uni-In Alliance 2018" of B.Sc. (Honors) Degree in Applied Sciences, University of Sri Jayewardenepura, 2018
 23. De Silva P.H.H.P.N., Lanel G.H.J., *Pure integer quadratic programming (PIQP) model for cut order plan and descriptive analysis on order fulfillment*, Symposium "Uni-In Alliance 2017" of B.Sc. (Honors) Degree in Applied Sciences, University of Sri Jayewardenepura, 2017
 24. Devanarayana S.K., Lanel G.H.J., *Develop a model to map clients people development requirements and the delivery of the service to achieve effective results*, Symposium "Uni-In Alliance 2017" of B.Sc. (Honors) Degree in Applied Sciences, University of Sri Jayewardenepura, 2017
 25. G.D.D.P. Jayaweera, G.H.J. Lanel , S. Thevasha, *Application of queuing theory to enhance the quality of a bank's performance*(ICCMS 060), International Conference on Computational Modeling and Simulation. The University of Colombo, pp. 180-184, 2017
 26. B.M.Y.U.A. Batugedara, G.H.J. Lanel , C. Bandara, S.L. Heenatigala, W.L.C. Piyasundara, *An algorithm to find the distance between any two railway stations allowing modifications to the existing database*(ICCMS 058), International Conference on Computational Modeling and Simulation. The University of Colombo, pp. 174-176, 2017
 27. Fernando K.L.M., Lanel G.H.J., Anura T.G.A., *Developing Methods for Fabric Consumption and Fabric Spreading Time Calculation*, Symposium "Uni-In Alliance 2016" of B.Sc. (Honors) Degree in Applied Sciences, University of Sri Jayewardenepura, pp. 32, 2016
 28. Perera C.P.T.S., Lanel G.H.J., Modarage R., *Smoothing the Work Load Due to Month end Bulk of Insurance Proposals in Life Underwriting Department at Asian Alliance Insurance*, Symposium "Uni-In Alliance 2016" of B.Sc. (Honors) Degree in Applied Sciences, University of Sri Jayewardenepura, pp. 37, 2016

29. J. Epasingha, G.H.J. Lanel, *Automated Examination Time Table for Faculty of Applied Sciences of University of Sri Jayewardenepura*, Sri Lanka Association for the Advancement of Science (SLAAS), Colombo, 504 E1, pp. 55, 2014
30. R.M. Rajapaksa, G.H.J. Lanel, *On Reading Information about the Sri Lankan Monarchs*, Sri Lanka Association for the Advancement of Science (SLAAS), Colombo, 504 E1, pp. 56, 2014
31. R. Ferdinandes, H. Pallage, J. Lanel, D. Rodrigo, N. Angulgamuwa *A Strategy to Reduce the Passenger Traffic at Sri Lanka Fort Railway Station Ticketing Counters*, International Conference on Multidisciplinary Approaches (iCMA), Faculty of Graduate Studies, University of Sri Jayewardenepura, PP. 87, 2014
32. G.H.J. Lanel, C.C. Cheng. *The Number of Complex Roots of a Univariate Polynomial Within a Rectangle*, Third Annual International Conference on Computational Mathematics, Computational, Geometry and Statistics (CMCGS 2014), Singapore, 2014
33. D.M.K.N. Seneviratna, G.H.J. Lanel, S. Weerakoon, M. Liyanage. *Traveling Tourist Problem for Selected Destinations in Sri Lanka*. Sri Lanka Association for the Advancement of Science (SLAAS), Colombo, 505 E1, pp. 55, 2012
34. G.K. Watugala, H.K.G. de Z. Amarasekara, G.H.J. Lanel, and S. Weerakoon. *A third order convergent method for finding roots of nonlinear equation*. Sri Lanka Association for the Advancement of Science (SLAAS), Colombo, 502 E1, pp. 209, 2002

PAPERS
SUBMITTED,
ACCEPTED, IN
PREPARATION

1. H.K. Abeynanda, G.H.J. Lanel, *A study on Distributed Optimization over Networked Systems*, submitted to the Asian Journal of Control, 2020.
2. Jayarathna D.G.N.D., Lanel G.H.J., Juman Z.A.M.S., Abdul Hoque M.D., *Optimal solution techniques to vehicle routing problem arising in lion beer distribution in Sri Lanka*, Submitted to the Annals of Operations Research, 2020
3. Chinthaka Wijerathne, G. H. J. Lanel, K.K.K.R. Perera, *Degree Diameter Problem on Octagonal Networks*, in preparation, 2021

SUPERVISED
GRADUATE
STUDENTS
THESIS

PH. D.

1. Dr. B. A. K. Welihinda (Senior Lecturer at Informatics Institute of Technology), *Analysis of the exultancy of Hamiltonian cycles in Cayley graphs of groups of special orders and its applications to public-key cryptography*, 2022
2. Dr. D.G.N.D. Jayarathna (Head- Department of Scientific Computing / Senior Lecturer at USJ), *Modelling and Simulation of Cost Benefit Transportation System: Planning for a Warehouse Vendors System*, 2022. **This study was**

recognized by awarding a Gold Medal at the Convocation held on 08th October 2023 for Research Excellence achieving the highest international and national research publications, patents, and research awards within the stipulated time at the Board of Study in Physical Sciences of the Faculty of Graduate

M.PHIL

1. H.K. Abeynanda (Ph.D. student at KTH Royal Institute of Technology) (M.Phil. in Mathematics, USJ), *Distributed Optimization of Limited Communication Net-works*, 2022.
2. Chinthaka Wijerathne (Researcher, Former lecturer at SLIIT), *A Study of Moore Graphs and Degree Diameter Problem to Construct a New General Upper Bound for the Order of Graphs*, from Oct. 2020.

M.Sc.

1. P.H.H.P.N. De Silva (M.Sc. in Industrial Mathematics, USJ), *Optimum Plant Mix Selection for Urban Home Gardens in Sri Lanka*, 2021
2. P.W.C.E. Pathirana (M.Sc. in Industrial Mathematics, USJ), *Developing a New Paper Structure For The GCE (O/L) Mathematics Paper Using Graph Theory*, 2019
3. M.T.M. Perera (M.Sc. in Financial Mathematics, University of Moratuwa), *A Model to Optimize University Course Timetable Using Graph Coloring and Integer Linear Programming*, 2016
4. G.K.H. Thondilege (M.Sc. in Industrial Mathematics, USJ), *Possibilities of Sharing Multi-Species in a Cage Based on Their Food Preference Using Graph Coloring Technique*, 2015
5. D.M.K.N. Seneviratna (M.Sc. in Industrial Mathematics, USJ), *Traveling Tourist Problem for Selected Destinations in Sri Lanka*, 2011
6. P.W.C.E. Pathirana (M.Sc. in Industrial Mathematics, USJ), *Developing a New Paper Structure for the G.C.E. (O/L) Mathematics Paper Using Graph Theory*, 2020.
7. U.V.C.H. Subasinghe (M.Sc. in Industrial Mathematics, USJ), *An Efficient Automated Timetable for Distance Education of the Open University of Sri Lanka*, 2020.
8. M.G.R.U.K. Ferdinandes (M.Sc. in Financial Mathematics, USJ), *An Improved Approach for Optimizing the Performance of Surgical Units*, 2015.

SPECIAL DEGREE

FINAL YEAR PROJECTS

1. Kulathilaka D.N., *Integrating climate sensitivity into SIR model for Dengue transmission in Colombo, Sri Lanka.*, 2026
2. Perera L.P., *Multilayer transportation network analysis of Sri Lanka.*, 2026
3. Lakshani, M.G.N., *Applications of Degree-based Topological Indices.*, 2025
4. SGS D Kularathna , *Survey on graph theory concepts used in Social Network Analysis*, from July. 2024.
5. Pasindu Maduranga, *Analysis and Representation of Tournament Scheduling Using Graph Theory*, 2023
6. S. A. N. Nalamudu Samarasinghe, *Analysis and Representations of the History of Sri Lanka using Graph Theory*, 2022
7. T. A. H. Dilpriya, *A strategy to strengthen and enhance the telecommunication network in Sri Lanka by using concepts of graph theory and linear programming models*, 2021
8. R.B.A.H. Abeyrathne, *A Study On Graph Theory Properties In Human Blood Circulatory System*, 2021
9. A.A.T. Thathsarani, *Solutions for the traffic congestion in Colombo city*, 2018
10. H.S.S.P. Jayawardena, *A study on graph theory properties of online social networks*, 2017
11. E.A.C.T. Sandamali, *A study on graph theory properties of constellations and apply them in stellar colonization*, 2017
12. T. Sathiyakumar, *A Survey on Hamiltonian cycles and paths in Cayley graphs and digraphs*, 2016
13. B.M.Y.U.A. Batugedara, *Designing the traffic phases using graph coloring and book thickness to reduce the traffic for a selected junction in Colombo city*, 2016, **This project won the Physical Science Award (Mathematics) from Sri Lanka Association for the Advancement of Science (SLAAS) in 2017**
14. P.A.D. Dilrukshi, *A Strategy to Reduce the Waiting Time at the Outpatient Department of the National Hospital in Sri Lanka*, 2015, **This project won the Physical Science Award (Mathematics) from Sri Lanka Association for the Advancement of Science (SLAAS) in 2016**
15. T.R. Safraz Ariffin, *A Study of Students' Performances of G.C.E. Ordinary Level Examination to Model a New Paper*, 2015
16. M.G.R.U.K. Ferdinandes, *An Improved Strategy to Reduce the Passenger Traffic at Coastal and Suburban Area Division of Sri Lanka Fort Railway Station Ticketing Counters*, 2014, **This project won the Physical Science Award**

(Mathematics) from Sri Lanka Association for the Advancement of Science (SLAAS) in 2015

17. S.D. Senarathna, *Automated Time Table generated for the Coastal Line of Sri Lanka Railway*, 2014
18. J. Epasingha, *Scheduling a Final Examination Time Table for the Faculty of Applied Sciences of the University of Sri Jayewardenepura*, 2013
19. R.M. Rajapaksa, *On the Representation of Directory of Sri Lankans Rulers*, 2013
20. K.M.H.K. Ranasinghe, *Dominating Sets and Its Applications*, 2012
21. E.C.R. Fernando, *Symbolic Computation and Its Applications*, 2012
22. A.A.D.H.S. Amarathunga, *Grobner Basis and Its Applications*, 2011

INDUSTRIAL INTERNSHIP PROGRAM (IIP) PROJECTS

1. K.M.G.I.U. Dias and B.B.R.Perera, *Analysing the Time of Bed Availability in Intensive Care Unit of Accident and Orthopaedic Department Using Survival Analysis*, 2019
2. W.D.G.M. Wickramasinghe, O.C.D. Silva, and H.S. Gayashani, *A strategy to solve traveling problems of workers in Colombo using Sri Lanka Railway*, 2019
3. A.A.T. Thattsarani and H.M.N. Sewwandi, *Analysis of revenue collections and policy changes in order to make suggestions to change the current composition of direct and indirect taxes*, 2018
4. M.H. Shanika and K.L.M. Silva, *Statistical Analysis of Accidents at the Accident and Orthopedic Service of the National Hospital of Sri Lanka*, 2017
5. G.D.D.P. Jayaweera and T. Sathiyakumar, *Application of Queuing Theory to Enhance the Quality of Performance of an Organization*, 2016
6. B.M.Y.U.A. Batugedara, S.L. Heennatigala, and W.L.C. Piyasundara, *An Algorithm to Find the Distance Between any Two Railway Stations Allowing the Modifications to Existing Database*, 2016
7. H. D. I. M. Nirmanamali and P.A.D. Dilrukhi, *A Strategy to Reduce the Waiting Time at the Outpatient Department of the National Hospital in Sri Lanka*, 2015
8. H.K. Pallage and M.G.R.U.K. Ferdinandes, *A Strategy to Reduce the Passenger Traffic at Coastal and Suburban Area Division of Sri Lanka Fort Railway Station Ticketing Counters*, 2014.
9. S.D. Senarathna and P.W.C.E. Pathirana, *Automated Time Table generated for the Coastal Line of Sri Lanka Railway*, 2014

EXTENDED (HONORS) DEGREE-FINAL YEAR PROJECTS

1. R.H. Randeniya, *Forecast-driven ATM cash replenishment optimization using demand forecasting and cost-based scenario analysis*, 2026.
2. H.R.S.U. Ranasinghe, *2D flattened shape and surface area of bra cups from 3D geometry*, 2026.
3. Manushi Munasinghe, *Automated Sri Lanka Standard Industry Classification Code System*, 2021
4. W.R.D. De Silva, *Study and Analysis of work-flow models using graph theory*, 2017 **This project won the award for the best oral presentation for the session Applied Mathematics at Uni-In Alliance 2017 symposium of B.Sc. (Honors) degree in Applied Sciences of USJP**
5. P.H.H.P.N. De Silva, *Pure integer quadratic programming (PIQP) model for cut order plan and descriptive analysis on order fulfillment*, 2016, **This project won the award for the best oral presentation for the session Applied Mathematics at Uni-In Alliance 2016 symposium of B.Sc. (Honors) degree in Applied Sciences of USJP**
6. S.K.Devanarayana, *Develop a model to map client's people development requirements and the delivery of the service to achieve effective results*, 2016, **This project won the award for the best poster presentation for the session Applied Mathematics at Uni-In Alliance 2016 symposium of B.Sc. (Honors) degree in Applied Sciences of USJP**
7. K.L.M. Fernando, *Developing Methods for Fabric Consumption and Fabric Spreading Time Calculation*, 2015
8. Perera C.P.T.S., *Smoothing the Work Load Due to Month end Bulk of Insurance Proposals in Life Underwriting Department at Asian Alliance Insurance*, 2015

ONGOING
GRADUATE
STUDENT
RESEARCH
SUPERVISION

PH. D.

1. G. K. H. Thondilege (Teaching Assistant Professor at the University of North Dakota), *Mathematical Approach for improved image preprocessing Techniques*, from Oct. 2021 onward.
2. T. A. H. Dilpriya (Lecturer at NSBM Green University), *Enhancing Investment Strategies through Machine Learning Techniques*, from Oct. 2022 onward.
3. Kavishka Rajapaksha (Lecturer at NSBM Green University), *Mathematical Analysis of Dynamic changes in multilayer networks*, from March. 2024 onward.

4. D.C. Gunawardhana (Lecturer at South Eastern University), *Enhancement and Development of Topological Indices and Their Applications in Drug Design*, from Oct. 2023 onward.
5. W.T. Pramodhya (Lecturer at SyZyGy), *Applying Graph Theory for Capturing Epidemic Dynamics to Improve Epidemic Models and Comprehend Disease Outbreaks*, from Jan. 2025 onward.

M.PHIL.

1. P.N.M. Perera (Lecturer at SLIIT), *Perrin Cordial Labelling for Some Specific Families of Graphs*, 2026 onward.

M.Sc.

1. Shanika Wanigasekara, *A Model for Forecasting Future Bed Requirements of National Hospital in Sri Lanka*, from Jan. 2020

ONGOING UNDERGRADUATE STUDENT PROJECTS SUPERVISION

SPECIAL DEGREE

FINAL PROJECTS

1. A.B. Udayanthi, *title*,2027.
2. R.P.D.D. Kavishan, *title*,2027.
3. A.P.B. De Silva, *title*,2027.

INDUSTRIAL INTERNSHIP PROGRAM (IIP)

1. ...

EXTENDED (HONORS) DEGREE-FINAL PROJECTS

1. ...

ARTICLES
PUBLISHED IN
NEWSPAPERS

- An article with the title "Strategies to improve results of Ordinary Level Mathematics Examination" was published in the Sunday Rivira newspaper on February 12th, 2017.
- An article with the title "Reduce accidents occurring on a daily basis" was published in the Sunday Rivira newspaper on July 30th, 2017.

PRESENTATIONS

1. Interviewed and recorded on the topic of "Applications of Graph Theory" at Sri Lanka Broadcasting Cooperation for the Vidulowa radio program on 15th July 2017
2. Participated in the Discussions of Advanced Level Combined Mathematics in the Thakshilawa educational program of the Independent Television Network (ITN), Sri Lanka, 2016
3. Delivered the Presidential Address of Section E1 of Sri Lanka Association for the Advancement of Science (SLAAS) on "Applications of Graph Theory" at the annual session of SLAAS, 2015
4. Participated in the Discussions of Advanced Level Combined Mathematics in the Thakshilawa educational program of the Independent Television Network (ITN), Sri Lanka, 2015
5. Participated in the Discussions of Advanced Level Combined Mathematics in the Thakshilawa educational program of the Independent Television Network (ITN), Sri Lanka, 2014
6. Participated in the Discussions of Advanced Level Combined Mathematics in the Thakshilawa educational program of the Independent Television Network (ITN), Sri Lanka, 2013
7. Presented "Traveling Tourist Problem for Selected Destinations in Sri Lanka" in the annual sessions of the Sri Lanka Association for the Advancement of Sciences, University of Colombo, Sri Lanka, 10.12.2012
8. Participated in the Discussions of Advanced Level Combined Mathematics in the Thakshilawa educational program of the Independent Television Network (ITN), Sri Lanka, 2012
9. Presented "On the domination number of Hamiltonian graphs with a minimum degree six" at the Department of Mathematics, University of Sri Jayewardenepura, Sri Lanka, 2011
10. Presented "An algorithm for complex root isolation of univariate polynomials" to the Computer Algebra class, Oakland University, USA, 2009
11. Presented "A chain rule for the resultants of two polynomials" at the Department of Mathematics and Statistics (Computer Algebra Seminar), Oakland University, USA, 2007

12. Presented “A chain rule for the sub-resultants of two polynomials” at the Department of Mathematics and Statistics (Computer Algebra Seminar), Oakland University, USA, 2007
13. Presented “A third order convergent method for finding roots of nonlinear equation” in the annual sessions of the Sri Lanka Association for the Advancement of Sciences, University of Colombo, Sri Lanka, 2002

WORKSHOPS
AND WEBINARS
CONDUCTED

1. Conducted a MATLAB workshop on 1st and 4th September, 2025 for the undergraduate students of faculty of computing at NSBM Green University.
2. ”How to face the exams” for Advanced Level Students in Physical Sciences, Organized by the National Institute of Business Management, Colombo, Sri Lanka, on September 19, 2020.
3. ”Methods of Mathematical Proofs” for the teachers in A/L Technology stream, conducted by the National Institute of Education (NIE), on June 13, 2018, at the NIE, Sri Lanka
4. ”Revised G.C.E. (Advanced Level) Combined Mathematics Curriculum, conducted by National Institute of Education (NIE), on May 4 2017 at the Moratuwa University, Sri Lanka
5. High-Quality Typesetting System (LaTeX) for Technical and Scientific Documentation for the Academics, Undergraduates, and Graduates students in Mathematics/Physics/Computer Science, Under the Section E1 of Sri Lanka Association for the Advancement of Science (SLAAS) at Department of Mathematics of University of Sri Jayewardenepura, March 23, 2017
6. Scientific Writing Workshop (Based on LaTeX) for the Physical Science (Special) Part I/Part II, and Extended Degree Students, Under the Section E1 of Sri Lanka Association for the Advancement of Science (SLAAS) at the University of Sri Jayewardenepura, February 28, 2016
7. Scientific Writing Workshop (Based on LaTeX) for the Physical Science (Special) Part I/Part II, and Extended Degree Students, Under the Section E1 of Sri Lanka Association for the Advancement of Science (SLAAS) at the University of Sri Jayewardenepura, March 21, 2015
8. Scientific Writing Workshop (Based on LaTeX) for the Physical Science (Special) Part II Students, Under the Section E1 of Sri Lanka Association for the Advancement of Science (SLAAS) at University of Sri Jayewardenepura, April 06, 2014

CONFERENCES
AND
WORKSHOPS
ATTENDED

1. A workshop on ”How to incorporate Google Scholar into your research”, the University of Sri Jayewardenepura, May 20, 2015

2. A Workshop on Measurements and the Global Energy Challenge, Conducted by Sri Lanka Association for the Advancement of Science(SLAAS), University of Sri Jayewardenepura, May 20, 2014
3. International Conference on Applications of Computer Algebra, Oakland University, July 19–22, 2007
4. International Conference on “What is algebraic geometry”, Institute for Mathematics and Its Applications, University of Minnesota, April 12–13, 2007

UNIVERSITY
SERVICES

- **Member** of the Ethical Clearance Committee, Faculty of Applied Sciences, University of Sri Jayewardenepura, 2025 onwards.
- **Coordinator**, *Industrial Internship Program in Department of Mathematics February 2017 to December 2018*
- **Coordinator**, *M. Sc. in Industrial Mathematics, Department of Mathematics January 2013 - December 2014*
- **Member** of the Quality Assurance Cell, Faculty of Applied Sciences, University of Sri Jayewadenepura, 2016 and 2017.
- **Member** of the Research Committee, Faculty of Applied Sciences, University of Sri Jayewadenepura, 2025 onwards.
- **Academic Counselor**, Faculty of Applied Sciences, University of Sri Jayewadenepura, from March 2013 and 2024 onwards.
- **Student Counselor**, University of Sri Jayewadenepura, 2012, 2013, and 2014.
- **Senior Treasure**, Mathematical Society, Department of Mathematics, University of Sri Jayewadenepura, 2012.
- **Member** of the Quality and Innovation Grant(QIG) Proposal Committee, Faculty of Applied Sciences, University of Sri Jayewadenepura, 2011.
- **Member** of the Committee to Introduce Economics as a Science Subject, Faculty of Applied Sciences, University of Sri Jayewadenepura, 2011-2012.
- **Assistant Secretary**, "Vidudaya" Science Teachers Association, Faculty of Applied Sciences, University of Sri Jayewadenepura, 2012.

MEMBERSHIPS
AND POSITIONS
IN
PROFESSIONAL
ORGANIZATIONS

- **President, Section E1** (Physical Sciences Committee) of Sri Lanka Association for the Advancement of Science (SLAAS), 2015.
- **Member**, Young Scientists Forum (YSF), National Science and Technology Commission (NASTEC), Sri Lanka 2014- Present.
- **Executive Committee Member**, Physical Sciences Committee of Sri Lanka Association for the Advancement of Science (SLAAS), 2014, 2016 and from June-December in 2017.

PROFESSIONAL
AND PUBLIC
SERVICE

- **Member**, Physical Sciences Committee of Sri Lanka Association for the Advancement of Science (SLAAS), 2002-Present.
- **Committee member** for the evaluation of first-year academic programs of Faculty of Computing, Sri Lanka Institute of Information Technology (SLIIT), 2025.
- **Session Chair**, International Conference on Applied and Pure Sciences (ICAPS)-2024, Faculty of Science, University of Kelaniya
- **Session Chair**, International Conference on Multidisciplinary Approaches, Faculty of Graduate Studies, US, 2022,2026.
- **Session Chair** for the Plenary Session, 6th International Conference on Business Innovation-2023, NSBM Green University, Sri Lanka.
- **Translator**, Mathematics E-Books for Secondary Education, Ministry of Education, Sri Lanka, 2021, and 2022.
- **Member** of the Review Team of Proposed Curriculum Program: Bachelor of Science in Business and Industrial Mathematics, Department of Commercial Sciences, Faculty of Management and Social Sciences, CINEC Campus, Malabe, 2017/2018.
- **Writer** Graph Theory unit of Discrete Mathematics Text Book, Department Mathematics & Philosophy of Engineering, Faculty of Engineering Technology, The Open University of Sri Lanka, 2018.
- **Editor** Dynamical Systems and Fractals unit of Discrete Mathematics Text Book, Department Mathematics & Philosophy of Engineering, Faculty of Engineering Technology, The Open University of Sri Lanka, 2018.
- **Editor** of the Evaluation Report (Department of Examinations, Sri Lanka) of G.C.E. (A/L) 2016.
- **Editor** of the Evaluation Report (Department of Examinations, Sri Lanka) of G.C.E. (A/L) 2014.
- **Member** of Editorial Board of International Journal of Multidisciplinary Approach and Studies (IJMAS) 2014.
- **Member** of Organizing Committee of International Conference on Multidisciplinary Approaches (iCMA), Faculty of Graduate Studies, University of Sri Jayewadenepura, 2014.
- **Member** of Editorial boards of several international and national journals.
- **Reviewer** of more than 25 international and national journals.
- Refereed Papers/Abstracts for:
 - Journal of Science (JSC), Eastern University, Sri Lanka
 - 18th Academic Sessions of the University of Ruhuna

- PeerJ Computer Science
- Ruhuna International Science and Technology Conference, University of Ruhuna,
- Sri Lanka Association for the Advancement of Science Journal
- Vidyodaya Journal of Science, University of Sri Jayewardenepura
- International Research Sessions (IPURSE), Peradeniya University
- International Conference on Multidisciplinary Approaches (iCMA), Faculty of Graduate Studies, University of Sri Jayewardenepura
- Pakistan Journal of Agriculture, Agricultural Engineering and Veterinary Sciences (PJAAEVS)
- International Conference on Mathematical Modeling (IFMM), University of Colombo
- Physical Sciences Section of Sri Lanka Association for the Advancement of Science (SLAAS)
- Annual Research Symposium, University of Colombo
- Symposium "Uni-In Alliance" of B.Sc. (Honors) Degree in Applied Sciences, University of Sri Jayewardenepura
- International Research Symposium on Pure and Applied Sciences (IRSPAS), University of Kelaniya
- International Conference on Computational Modeling and Simulation (IC-CMS), Faculty of Science, University of Colombo
- Journal of the National Science (JNSF) Foundation of Sri Lanka
- International Conference on Applied and Pure Sciences (ICAPS)
- Ceylon Journal of Science, University of Peradeniya, Sri Lanka
- Applied and Computational Mathematics (Science Publishing Group)
- International Research Conference of the Open University of Sri Lanka 2024 (IRC-OUSL 2024)
- Connection Science
- Journal of Advances in Mathematics and Computer Science (JAMCS)
- Asian Research Journal of Mathematics (ARJOM)
- Served as a **judge** in the Young Inventors Exhibition conducted by Sri Lanka Association for the Advancement of Science at the 71st scientific sessions, December 2015
- External Examiner:
 - Jothilakshmi G, Ph.D. Thesis (ON CHARACTERIZATION OF b, DOMINATOR, TOTAL AND HDS COLORING OF SOME ESSENTIAL GRAPHS AND VARIOUS GRAPH FAMILIES), Bharathiar University, India (2021).

- K. Rajam, Ph.D. Thesis (THE COMPUTATION OF TOPOLOGICAL INDICES OF MOLECULAR STRUCTURES AND THEIR CHEMICAL APPLICABILITY IN QSPR ANALYSIS), Bharathiar University, India (2021).
- Jerlin Seles, Ph.D. Thesis (A strategy on disaster recovery management based on graph theory concepts), Bharathiar University, India (2022).
- Vyshna Unni, Ph.D. Thesis (Analysis of Differentiated Vacation Queuing Systems with Working Vacations, Vacation Interruptions, Retrials and Mixed Strategy of Customers), Bharathiar University, India (2022).
- W.A. Gunarathna, Ph.D. Thesis (Computational Techniques for Higher Order Approximations of Fractional Derivatives with Applications), Peradeniya University, Sri Lanka (2023).
- A. Neerajah, Ph.D. Thesis (A study on triangular graceful labeling of graphs), PG and Research Department of Mathematics, Government Arts College (Autonomous/Affiliated to Bharathiar University, India), Coimbatore (2025).
- M. Durga, Ph.D. Thesis (A study on advances in degree-based topological indices and their applications), Kongu Arts and Science College (Autonomous/Affiliated to Bharathiar University, India), Erode (2025).

COMPUTER SKILLS

Extensive hardware and software experience in networking and information technology

- **Mathematical Packages:** Maple, Mathematica, and MATLAB
- **Programming:** C, C++, Pascal, Saclib (a library of C functions for symbolic computation), Maple, and MATLAB
- **Operating Systems:** Mac OS, Linux / Variants, and Windows

REFERENCES

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