

# CURRICULUM VITAE

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## PERSONAL INFORMATION

*Name:* **Jayantha Lanel**

*Designation:* Senior Lecturer (Grade 1) 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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Office: +94 011 2758384, Home: +94 011 2347477  
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*Web Page:* <http://scholar.sjp.ac.lk/lanel>

## 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.(Hons), 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**

Computer Algebra/Symbolic Mathematics, Graph Theory/Computational Discrete Mathematics, Queuing Theory, and Operational Research.

**MATHEMATICAL  
EXPERTISE**

Computer Algebra, Graph Theory, 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 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**

- *Senior Lecturer (Grade I) in Mathematics* March 15, 2017- to date
- *Senior Lecturer (Grade II) in Mathematics* October 13, 2010 - March 14, 2017
- *Visiting Lecturer(**Engineering Mathematics V**)*, Faculty of Engineering, Aug 2019 - Dec 2019
- *Visiting Lecturer(**Algorithms and Optimization Methods**)*, Faculty of Engineering, Jan 2019 - June 2019
- *Visiting Lecturer(**Graph Theoretic Applications**)*, Pg. Diploma/M. Sc. in Industrial Mathematics August 2018 - December 2018
- *Visiting Lecturer(**Computational Mathematics**)*, Pg. Diploma/M. Sc. in Industrial Mathematics Dec 2017 - May 2018
- *Visiting Lecturer(**Mathematics I**)*, Faculty of Technology, Jan 2017 - June 2017
- *Visiting Lecturer(**Graph Theoretic Applications**)*, Pg. Diploma/M. Sc. in Industrial Mathematics July 2016 - October 2016
- *Visiting Lecturer(**Computational Mathematics**)*, Pg. Diploma/M. Sc. in Industrial Mathematics June 2015 - September 2015
- *Visiting Lecturer(**Graph Theory and Its Applications**)*, M. Sc. in Industrial Mathematics August 2013 - November 2013
- *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 2018 - April 2019
- *Visiting Lecturer(**Fluid Mechanics**)*, Department of Mathematics August 2017 - November 2017
- *Visiting Lecturer(**Fluid Mechanics**)*, Department of Mathematics June 2015 - September 2015
- *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* *July 2020 - December 2020*
- *Visiting Lecturer*(**Modeling and Simulation**), *Department of Computer Science, Faculty of Computing* *July 2019 - December 2019*
- *Visiting Lecturer*(**Modeling and Simulation**), *Department of Computer Science, Faculty of Computing* *April 2018 - October 2018*

**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*

**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*

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)

- MAT 4552.0 Graph Theory (Sem. 1-2012)
- 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)
- MAT 302 2.0 Complex Analysis (Sem. 1-2013)
- MAT 4552.0 Graph Theory (Sem. 1-2013)
- MAT 327 1.5 Numerical Methods II (Sem. 2-2013)
- MAT 331 1.0 Algorithms and Complexity (Sem. 2-2013)
- MAT 377 2.0 Complex Variables (Sem. 2-2013)
- MAT 302 2.0 Complex Analysis (Sem. 1-2014)
- MAT 4552.0 Graph Theory (Sem. 1-2014)
- MAT 331 1.0 Algorithms and Complexity (Sem. 2-2014)
- MAT 377 2.0 Complex Variables (Sem. 2-2014)
- MAT 302 2.0 Complex Analysis (Sem. 1-2015)
- MAT 353 2.0 (APS 432 2.0) Computational Mathematics (Sem. 1-2015)
- MAT 453 2.0 Ring Theory (Sem. 1-2015)
- MAT 127 2.0 Calculus II (Sem. 2-2015)
- MAT 331 1.0 Algorithms and Complexity (Sem. 2-2015)
- MAT 353 2.0 (APS 432 2.0) Computational Mathematics (Sem. 1-2016)
- MAT 455 2.0 Graph Theory (Sem. 1-2016)
- MAT 331 1.0 Algorithms and Complexity (Sem. 2-2016)
- MAT 377 2.0 Complex Variables (Sem. 2-2016)
- MAT 302 2.0 Complex Analysis (Sem. 1-2017)
- MAT 353 2.0 (APS 432 2.0) Computational Mathematics (Sem. 1-2017)
- MAT 455 2.0 (APS 423 2.0) Graph Theory (Sem. 1-2017)
- MAT 331 1.0 Algorithms and Complexity (Sem. 2-2017)
- MAT 377 2.0 Complex Variables (Sem. 2-2017)
- AMT 211 2.0 Design and Analysis of Algorithms (Sem. 1-2018)
- MAT 455 2.0 (APS 423 2.0) Graph Theory (Sem. 1-2018)
- AMT 223 1.0 Discrete Mathematics (Sem. 2-2018)
- MAT 122 2.0 Calculus (Sem. 2-2018)
- MAT 331 1.0 Algorithms and Complexity (Sem. 2-2018)
- AMT 353 2.0 Computer Algebra (Sem. 1-2019)
- AMT 211 2.0 Design and Analysis of Algorithms (Sem. 1-2020)

- AMT 313 1.0 Computational Discrete Mathematics (Sem. 1-2020)
- AMT 353 2.0 Computer Algebra (Sem. 1-2020)
- MAT 353 3.0 Graph Theory (Sem. 2-2020)
- MAT 454 2.0 Computational Mathematics (Sem. 2-2020)

- **Faculty of Technology**

- FOT 11301 Mathematics I-2017

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

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

**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
- APU 3150 Fluid Mechanics-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
- CS 3182 Modeling and Simulations-2019
- CS 3182 Modeling and Simulations-2020

**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)
  - MA 1312 Engineering Mathematics II (Sem. 2 -2019)

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

**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. 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*, Vol. 21 No. 4 pp. 289-300, 2021. <http://paper.ijcsns.org/07-book/202104/20210436.pdf>.
2. Hansi K. Abeynanda, G. H. J. Lanel, "A Study on Distributed Optimization over Large-Scale Networked Systems", *Journal of Mathematics*, vol. 2021, Article ID 5540262, 19 pages, 2021. <https://doi.org/10.1155/2021/5540262>.
3. 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*, October 2019, <https://doi.org/10.1142/S1793830919300029>
4. Waduge C.P., Ganegoda N.C., Lanel G.H.J., Wickramarachchi D.C., Lokupitiya R.S., *Alternative measures of central tendency to the mean series of a set of time series based on Haar wavelet decomposition*, *GSTF Journal on Computing*, Volume 6, No 2, 2018
5. G.H.J. Lanel, C.C. Cheng. *The Number of Complex Roots of a Univariate Polynomial Within a Rectangle*, *Journal of Mathematics, Statistics and Operations Research (JMSOR)*, Singapore, Volume 2, Number 2, pp. 41, 2014

## ANY ORTHER INDEXED JOURNALS

1. 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, 2021, PP 36-47,  
<https://doi.org/10.30560/sdr.v3n1p36>.
2. 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, 2020, PP 109-123,  
<http://dx.doi.org/10.14254/jsdtl.2020.5-2.10>.
3. 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-DOI: 10.9790/5728-1606042529
4. 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, 2019, PP 52-57.
5. 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, July 2019, PP 581-585, DOI: 10.35940/ijrte.B1115.0782S419.
6. 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, June 2019, PP 768-773, DOI: 10.29322/IJSRP.9.06.2019.p90112.
7. 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, April. 2019, PP 56-61, DOI: 10.9790/5728-1502025661.
8. 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, January 2018-DOI: 10.9790/5728-1306044754
9. 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, May 2017, DOI URL: <https://dx.doi.org/10.22161/ijaers.4.5.19>



10. 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, March 2017 Article DOI: 10.21474/IJAR01/3666, DOI URL: <http://dx.doi.org/10.21474/IJAR01/3666>
11. 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, (Mar. 2017), PP 162-165, DOI URL: <http://dx.doi.org/10.22161/ijaers.4.3.26>.
12. 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 (Mar. - Apr. 2017), PP 76-80, DOI: 10.9790-5728-1302027680.
13. 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, September 2016-DOI: 10.9790-5728-1205031318

## REFEREED JOURNALS

1. 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;10:426432.
2. 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;10:615621.
3. GHJ Lanel, TMKK Jinasena, BAK Welihinda. HAMILTONIAN CYCLES IN CAYLEY GRAPHS OF SEMIDIRECT PRODUCTS OF FINITE GROUPS. European Modern Studies Journal [Internet]. 2020;4:119.
4. EACT Sandamali GHJ Lanel. A Study on Graph Theory Properties of Constellations. European Modern Studies Journal. 2020;4:131143
5. GHJ Lanel HSSP Jayewardene. A Study on Graph Theory Properties of On-line Social Networks. International Journal of Scientific and Research Publications. 2020;10:267274.
6. EACT Sandamali GHJ Lanel. A Use of Graph Theory Properties of Constellations in Stellar Colonization. European Modern Studies Journal. 2020;4:144154
7. 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

8. 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
9. 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
10. 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
11. 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
12. 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. 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
2. G.H. Jayantha Lanel. *Complex Root Isolation*, ISBN-978-639-51444-5, Scholar's Press, Heinrich-Boecking Str. 6-8 D - 66121 Saarbrcken, Germany, 2013
3. G.H. Jayantha Lanel. *Complex Root Isolation*, ISBN-10: 1243635053, ISBN-13: 978-1243635051, ProQuest, UMI Publishing, Michigan, USA, 2011
4. G.H. Jayantha Lanel. *Complex root isolation of univariate polynomials*. Ph. D. Thesis, Oakland University, USA, 2009

## CONFERENCE AND PROCEEDING

1. W.D.G.M. Wickramasinghe, O.C.D. Silva, H.S. Gayashani, and G.H.J. Lanel, *A strategy to solve travelling problems of workers in Colombo using Sri Lanka Railway*, Sri Lanka Association for the Advancement of Science (SLAAS), Colombo, 504/E1, pp. 84, 2019
2. 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
3. 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
4. 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
5. 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
6. 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
7. G.D.D.P. Jayaweera, G.H.J. Lanel, S. Thevasha, *Application of queuing theory to enhance the quality of the performance of a bank(ICCMS 060)*, International Conference on Computational Modeling and Simulation. University of Colombo, pp. 180-184, 2017
8. 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. University of Colombo, pp. 174-176, 2017
9. 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
10. 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

11. 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
12. 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
13. 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
14. 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
15. 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
16. 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. Waduge C.P., Ganegoda N.C., Lanel G.H.J., Wickramarachchi D.C., Lokupitiya R.S., *A GROUP OF REPRESENTATIVE MEASURES OF A SET OF TIME SERIES AND ITS DECISION SUPPORT: A TRIAL FOR DENGUE INCIDENCE DATA OF SRI LANKA*, Accepted to the International Journal of Decision Sciences, Risk and Management, October, 2020
2. GHJ Lanel, TMKK Jinasena, BAK Welihinda, *Proposed non-abelian group based cryptosystem*, in preparation, 2021
3. GHJ Lanel, TMKK Jinasena, BAK Welihinda, *Insight in to public-key cryptography in non-commutative groups over the past two decades*, in preparation, 2021
4. H.K. Abeynanda, G,H,J, Lanel, *A study on Distributed Optimization over Networked Systems*, submitted to the Asian Journal of Control, 2020
5. Jayarathna DGND, Lanel GHJ, Juman ZAMS *Ten Years of Multi-Depot Vehicle Routing Problems*, in preparation, 2021
6. Jayarathna DGND, Lanel GHJ, Juman ZAMS, Abdul Hoque MDOPTIMAL SOLUTION TECHNIQUES TO VEHICLE ROUTING PROBLEM ARISING IN LION BEER DISTRIBUTION IN SRI LANKA, Submitted to the Annals of Operations Research, 2020

7. Chinthaka Wijerathne, G. H. J. Lanell, K.K.K.R. Perer *Degree Diameter Problem on Octagonal Networks*, in preparation, 2021

SUPERVISED  
GRADUATE  
STUDENTS  
THESIS

PH. D.

M.PHILL

M.Sc.

1. Chiloma Subasinghe (M.Sc. in Industrial Mathematics, USJ), *An Efficient Automated Timetable for Distance Education of the Open University of Sri Lanka*, 2019
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.G.R.U.K. Ferdinandes (M.Sc. in Financial Mathematics, University of Colombo), *A Queuing Model to Optimize the Performance of Surgical Units*, 2017
4. 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
5. P.D.A.G.D. De Almeida (M.Sc. in Industrial Mathematics, USJ), *Data Model and Algorithms for Rates Base Route Planning with Rail Way Transportation Networks in USA*, 2016
6. 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
7. D.M.K.N. Seneviratna (M.Sc. in Industrial Mathematics, USJ), *Traveling Tourist Problem for Selected Destinations in Sri Lanka*, 2011

SUPERVISED UN-  
DERGRADUATES  
STUDENTS  
PROJECTS

SPECIAL DEGREE

FINAL YEAR PROJECTS

1. A.A.T. Thattharani, *Solutions for the traffic congestion in Colombo city*, 2018

2. H.S.S.P. Jayawardena, *A study on graph theory properties of online social networks*, 2017
3. E.A.C.T. Sandamali, *A study on graph theory properties of constellations and apply them in stellar colonization*, 2017
4. T. Sathiyakumar, *A Survey on Hamiltonian cycles and paths in Cayley graphs and digraphs*, 2016
5. 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**
6. 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**
7. T.R. Safraz Ariffin, *A Study of Students' Performances of G.C.E. Ordinary Level Examination to Model a New Paper*, 2015
8. 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**
9. S.D. Senarathna, *Automated Time Table generated for the Coastal Line of Sri Lanka Railway*, 2014
10. J. Epasingha, *Scheduling a Final Examination Time Table for the Faculty of Applied Sciences of the University of Sri Jayawardenepura*, 2013
11. R.M. Rajapaksa, *On the Representation of Directory of Sri Lankans Rulers*, 2013
12. K.M.H.K. Ranasinghe, *Dominating Sets and Its Applications*, 2012
13. E.C.R. Fernando, *Symbolic Computation and Its Applications*, 2012
14. 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 travelling 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. 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**
2. 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**
3. S.K.Devanarayana, *Develop a model to map clients 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**
4. K.L.M. Fernanado, *Developing Methods for Fabric Consumption and Fabric Spreading Time Calculation*, 2015
5. 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

## PH. D.

1. D.G.N.D. Jayarathna, *Modelling and Simulation of Cost Benefit Transportation System: Planning for a Warehouse Vendors System*, from October 2018 onwards.
2. B. A. K. Welihinda, *Analysis of the exultancy of Hamiltonian cycles in Cayley graphs of groups of special orders and its applications to public-key cryptography*, from July 2018 onwards.

## M.PHILL

1. Chinthaka Wijerathne, *A Study of Moore Graphs and Degree Diameter Problem to Construct a New General Upper Bound for the Order of Graphs*, from Oct. 2020 onwards.
2. H.K. Abeynanda, *Distributed Optimization of Limited Communication Networks*, from Oct. 2017 onwards.

## M.SC.

1. P.H.H.P.N. De Silva, *Optimum plant mix for urban home gardening in Sri Lanka*, from Jan. 2020
2. Shanika Wanigasekara, *A Model for Forecasting Future Bed Requirements of National Hospital in Sri Lanka*, from Jan. 2020

ONGOING UN-  
DERGRADUATE  
STUDENT  
PROJECTS  
SUPERVISION

## SPECIAL DEGREE

## FINAL PROJECTS

1. Dilz Thilakarathne, *A strategy to strength and enhance the telecommunication network in Sri Lanka by using Graph Theory and Operational Research*, from March. 2020
2. Araliya Abeyrathne, *Use of Graph theory properties to study the human blood circulation system*, from March. 2020

## INDUSTRIAL INTERNSHIP PROGRAM (IIP)

1. ...



## EXTENDED (HONORS) DEGREE-FINAL PROJECTS

1. M.K. Munasinghe, *Automated Sri Lanka Standard Industry Classification Code System by using graph theory*, from March. 2020

### ARTICLES PUBLISHED IN NEWSPAPERS

- An article with the title "Strategies to improve results of Ordinary Level Mathematics Examination" published in the Sunday Rivira newspaper on February 12th 2017.
- An article with the title "Reduce accidents occurring in daily basis" 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 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 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. ”How to face the exams” for Advanced Level Students in Physical Sciences, Organized by National Institute of Business Management, Colombo, Sri Lanka, on September 19, 2020.
2. ”Methods of Mathematical Proofs” for the teachers in A/L Technology stream, conducted by National Institute of Education (NIE), on June 13, 2018 at the NIE, Sri Lanka
3. 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
4. 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
5. 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 University of Sri Jayewardenepura, February 28, 2016
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 University of Sri Jayewardenepura, March 21, 2015
7. 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", 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

- **Coordinator**, *Industrial Internship Program in Department of Mathematics February 2017 to date*
- **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, 2015 and 2016.
- **Academic Counselor**, Faculty of Applied Sciences, University of Sri Jayewadenepura, from March 2013 to date.
- **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.
- **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 Jayewardenepura, 2014.
- Refereed Papers/Abstracts for:
  - 18th Academic Sessions of the University of Ruhuna, 2021
  - PeerJ Computer Science, 2020
  - Ruhuna International Science and Technology Conference, University of Ruhuna, 2020
  - Sri Lanka Association for the Advancement of Science Journal, 2018
  - Vidyodaya Journal of Science, University of Sri Jayewardenepura, 2018
  - International Research Sessions (IPURSE), Peradeniya University, 2017
  - International Conference on Multidisciplinary Approaches (iCMA), Faculty of Graduate Studies, University of Sri Jayewardenepura, 2015, 2016, and 2017
  - Pakistan Journal of Agriculture, Agricultural Engineering and Veterinary Sciences (PJAAEVS)
  - International conference on Mathematical Modeling (IFMM), University of Colombo, 2014

- Physical Sciences Section of Sri Lanka Association for the Advancement of Science (SLAAS), 2014 and 2017
- Annual Research Symposium, University of Colombo
- Symposium "Uni-In Alliance" 2016, 2017, 2018 of B.Sc. (Honors) Degree in Applied Sciences, University of Sri Jayewardenepura
- International Research Symposium on Pure and Applied Sciences(IRSPAS), University of Kelaniya 2016
- International Conference on Computational Modeling and Simulation (ICCMS-2017), Faculty of Science, University of Colombo
- Journal of the National Science Foundation of Sri Lanka 2017
- 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

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

- Charles Ching-An Cheng  
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Statistics  
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- C.P. Abayaratne  
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Department of Mathematics and  
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