SUNETHRA WEERAKOON
No 1, Wijerama Road, Gangodawila, Nugegoda.
011-2802775, 0777619636
Email: sunethra.weerakoon@gmail.com

Website: http://science.sjp.ac.lk/mat/prof-mrs-sunethra-weerakoon/
Google Scholar link: https://scholar.google.com/citations?user=hr26ohwAAAAJ&hl=en
ResearchGate link: https://www.researchgate.net/profile/Sunethra_Weerakoon
A/L Videos: http://learn.sjp.ac.lk/course/gce-al-combined-mathematics/

---

1. EDUTIONAL QUALIFICATIONS:

Institution	Period	Degree	Date
1.1 The Pennsylvania State University University Park, PA.16802, U.S.A.	1982 - 84	PhD (Mathematics)	December 1984
1.2 The Pennsylvania State University	1979 - 82	MA (Mathematics)	December 1982
1.3 University of Sri Lanka Peradeniya Campus	1972 - 76	BSc (Mathematics) (Honours)	April 1976

2. EMPLOYMENT RECORD (More than 40 Years of Continuous University Teaching)

Place of Work	Period	Position Held
2. 1 Department of Mathematics FAS & FGS **University of Sri Jayewardenepura**	May 2009 - Jan. 2017 2007 - 2011 May 2006-May 2009	Senior Professor Chairperson**/** BSPS Coordinator/ MSc in IM
2.2 Department of Mathematics, **Texas A & M Univ.,** College Station, TX, USA	From August 2005 to May 2006	Visiting Professor

2.3 Department of Mathematics **Cornell University,** Ithaca, NY, USA	From August 2004 to May 2005	Visiting Professor
2.4 Faculty of Graduate Studies **University of Sri Jayewardenepura**	Jan. 2002 - July 2004	Chairperson, Board of Study in Physical Sciences (BSPS)
2.5 Department of Mathematics **University of Sri Jayewardenepura**	May 2001 Aug 2001 - Aug 2004	Professor Head of the Department
2.6 Faculty of Graduate Studies University of Sri Jayewardenepura	January 1996 to January 2002	Coordinator, Postgraduate Diploma/MSc in IM
2.7 Department of Mathematics **University of Sri Jayewardenepura**	April 1999 - May 2001 July 1993 - April 1999	Associate Professor Senior Lecturer (GI)
2.8 School of Mathematics & Statistics, **Curtin University of Technology**, Perth, **Australia**	July 1991 to July 1993	Visiting Teaching Fellow
2.9 Department of Mathematics **University of Sri Jayewardenepura**	Jan. 1991- July 1991 Jan. 1985 - Jan. 1991	Senior Lecturer (GI) Senior Lecturer (GII)
2.10 Department of Mathematics **Pennsylvania State University** University Park, PA, **USA**	August 1979 to December 1984	Teaching Assistant & Graduate Lecturer
2.11 Department of Mathematics University of Sri Lanka of Sri Lanka **Vidyodaya Campus** **University of Sri Jayewardenepura**	October 1976 to Jan. 1985	Probationary Assistant Lecturer
2.12 Department of Mathematics University of Sri Lanka, Peradeniya	April 1976 - Oct. 1976	Temporary Assistant Lecturer

3. ACADEMIC DISTINCTIONS, ACHIEVEMENTS & AWARDS:

3.1 Award for the **Paper with highest number of citations** in the **University** in the year 2018 (SJP Research awards ceremony held in 2019)

3.2 Award for High **No. of citations of the Faculty of Applied Science** in 2016
(SJP Research awards ceremony held in 2017)

3.3 Award for the Highest **No. of citations of the Faculty of Applied Science** in 2015
(SJP Research awards ceremony held in 2016)

3.4 Award for the Highest **No. of citations of the Faculty of Applied Science** in 2014
(SJP **First** Research awards ceremony held in 2015)

3.5 Among **top 20 SJP researchers receiving webometrics rankings in 2014**

3.6 Award for the **Best research of the Faculty of Applied Science** 2009)
(Shared with Ms. Lakmali Salgado & Dr. T G I Fernando)
(SJP 50th anniversary academic sessions)

3.7 First person to earn the professorship in Mathematics by Merit in Sri Lanka. (2001)

3.8 First female to earn a professorship in Mathematics in Sri Lanka. (2001)

3.9 **Presidential Award** for Research for publishing in Mathematics in an indexed journal (2000)

3.10 Person with **highest number of citations in mathematics research in Sri Lanka** up –to-date.

3.11 First female to earn an associate professorship in Mathematics in Sri Lanka. (1999)

3.12 First person to write a university level mathematics book in Sinhalese. (1996)

3.13 First female Sri Lankan to earn a Ph. D. in Mathematics. (1984)

3.14 Award of **Curry Fellowship** on the Performance during the first year in Graduate Studies. By the Department of Mathematics, The Pennsylvania State University in Honour of Professor Emeritus H B Curry, (1980)

3.15 Award of **Fulbright Hays Travel Grant.** (1979 -1984)
By the International Communication Agency and the Board of Foreign Scholarships of the US Foundation in Sri Lanka.

3.16 First female to be recruited to the academic staff of the Department of Mathematics, SJP. (1976)

3.17 Award of the **Pure Science Scholarship for opting to enter a Science faculty after qualifying to the Engineering faculty.** By the National Council for Higher Education in Sri Lanka. (1972 - 1976)

4 PUBLICATIONS AND PRESENTATIONS PUBLISHED IN ABSTRACT FORM:

4.1 Finite Difference Numerical Methods for Boundary Control Problems Governed by Hyperbolic Partial Differential Equations, (with G Chen, Q Zheng & M Coleman), Proceedings on the Workshop on Applications of Distributed Parameter System Theory to the Control of Large Space Structures
NASA Jet Propulsion Laboratory (1983), p447-495

4.2 An Initial Value Control Problem for the Burger's Equation, (with G Chen & H K Wang) Lecture Notes in Control and Information Sciences, (75) - Distributed Parameter Systems (1984), p52-76

Records 10 citations as of May 2020

4.3 An Initial Value Control Problem for the Burger's Equations, Ph.D. Thesis (1984)

Records 11 citations as of May 2020

4.4 A Study of Numerical Methods for Solving Initial Value Problems, (with L Menaka Lelwala) Annual Sessions of the Sri Lanka Association for the Advancement of Science - (December 1988)

4.5 Computer Education, Issues, Policy & Strategies - Proceedings of the UNESCO Workshop on The Use of Computers in the Teaching of Science and Mathematics in Asia and the Pacific, RMIT, Melbourne, Australia - (November 1989)

4.6 Numerical Solution of Nonlinear Algebraic Equations in the Absence of the Derivative, Proceedings of the Annual Conference of the Australian Mathematical Society held in the University of Western Australia, Perth, Australia - (July 1992)

4.7 Application of Sumudu Transform to Partial Differential Equations, **International Journal for Mathematical Education in Science and Technology ,** Vol. 25, No. 2,(1994) 277-283

Records 120 citations as of May 2020

4.8 Newton's Root Finding Algorithm in the Absence of the Derivative, Proceedings of the Golden Jubilee Sessions of the Sri Lanka Association for the Advancement of Science, November 1994, E1-21, p 209

4.9 Numerical Solution of Non-linear Equations in the Absence of a Derivative, **Journal of the National Science Council of Sri Lanka** –24(4) (1996) 309-318

Records 02 citations as of May 2020

4.10 Finite Difference Newton's Method for Functions of Two Variables, with Mr. H K G de Z Amarasekera, Proceedings of the Annual Sessions of the Sri Lanka Association for the Advancement of Science (November 1996), E1-02, p 158

4.11 Sumudu Transform and Laplace Transform: Reply, **International Journal for Mathematical Education in Science and Technology,** Vol. 28, (1997) 159-160

Records 11 citations as of May 2020

4.12 A Complex Inversion Formula for Sumudu Transform, **International Journal for Mathematical Education in Science and Technology,** VOL. 29. NO. 4(1998) 618-621

Records 71 citations as of May 2020

4.13 A Variance of Newton's Method with Accelerated Third Order Convergence (with Mr. T G I Fernando) **Applied Mathematics Letters** 13(2000) 87-93

Records 889 citations as of May 2020

4.14 Finite Difference Newton's Method for Systems of Non-linear Equations, (with H K G de Z Amarasekara) **Mathematical Engineering in Industry**, (Vol.7, No.4 (1999) 433-440)

4.15 Improved Newton's Method for Finding Roots of a Non-linear Equations (with T G I Fernando) Proceedings of the First Annual Research Secessions, USJ pp 225-235, (1998)

4.16 Approximating Roots of Unknown Functions (with H K G de Z Amerasekera) Proceedings of the First Annual Research Sessions, USJ, pp 236-246 (1998)

4.17 Estimating Parameters of a Mixture of Two Exponential Distributions (with S D L Geeganage & P Dias), Proceedings of the Research Sessions pp 247-263, USJ (1998)

4.18 Approximating Roots of Unknown Functions (with H K G de Z Amarasekera) Annual Sessions of the Sri Lanka Association for the Advancement of Science (December 1997), p 308 **(E1-21)**

4.19 Improved Newton Method for Finding Roots of Non-linear Equation (with T G I Fernando; Annual Sessions of the Sri Lanka Association for the Advancement of Science (December 1997), p 309 **(E1-22)**

4.20 Estimating Parameters of a Mixture of Two Exponential Distributions (with P Dias & S L D Geeganage), Annual Sessions of the S L Association for the Advancement of Sci. (December 1997), p 310 **(E1-23)**

4.21 Annual and Seasonal Trends in Rainfall in Sri Lanka (with A G C Seneviratne, W L Sumathipala & P Dias), Annual Sessions of the S L Association for the Advancement of Sci. (Dec. 1997), p 322 **(E1-35)**

4.22 Approximating Roots of Unknown Functions (with H K G de Z Amarasekera) Research Sessions of the Faculty of Graduate Studies, USJ, (March 1998), p 27

4.23 Improved Newton Method for Finding Roots of a Non-linear Equation (with T G I Fernando) Research Sessions 1998 of the Faculty of graduate Studies, USJ, (March 1998), p 22-26

Records 01 citations as of May 2020

4.24 Estimating Parameters of a Mixture of Two Exponential Distributions, (with P Dias & S L D Geeganage), Research Sessions 1998 of the Faculty of Graduate Studies, USJ (March 1998), p 30

4.25 Third Order Convergence of Improved Newton's Method for Roots of Non-linear Equations (with T G I Fernando), Annual Sessions of SLAAS (December 1998), p 252**(E1-31)**

4.26 Approximating Roots of Unknown Functions of Two variables (with H K G de Z Amarasekera.
Annual Sessions of the S L Association for the Advancement of Sci, (December 1998), p253 **(E1-32)**

4.27 Study of Network Adaptive Routing for Circuit Switched Networks Using Computer Simulation (with M B Herath, J A K S Jayesinghe, E A T A Edirisooriya), Annual Sessions of the Sri Lanka Association for the Advancement of Science (December 1998), p 178**(C-54)**

4.28 Investigation of a Mortality Experience of a Sri Lankan Life Insurance Company, (with B M K N Dissanayake, P Dias & B M S G Banneheke), An. Sessions SLAAS (December 1998), p 352 **(F-25)**

4.29 Finite Difference Newton's method for functions of two variables, Ceylon Journal of Science, Physical Sciences, 5(1),85-95)(1998), (with H K G de Z Amarasekera)

4.30 Software package consisting of Efficient techniques for Numerical Root Finding, Annual Research Sessions, Faculty of Graduate Studies, USJ (October 1999) Published in Abstract form (with H K G de Z Amarasekera & G K Watugala)

4.31 Second Order convergence of Finite Difference Newton's method for function of several variables, Annual Sessions of SLAAS, December 1999 pp (with H K G de Z Amarasekera & G K Watugala)

4.32 Computer based management system for Goods and Services tax administration in Sri Lanka, Annual Sessions of SLAAS, and December 1999. (With R A S P Ranaweera et al)

4.33 A Finite Element Based Topographic Profile Modeling Technique for Propagation Path – Loss Calculation in VHF Electric Field Strength Prediction, Journal of IEEE (2002) (with P S Panawennege, G T F de Silva & W P A M Wijesinghe)

4.34 Third Order Convergent Gaussian Quadrature Newton's Method, SLAAS Annual Sessions 2002 (with G H J Lanel, G K Watugala & H K G de Z Amarasekara)

4.35 Degree Reduction of Bezier Curves, **Fiftieth anniversary academic sessions**, USJ; (2009) (with M D L Salgado, and T G I Fernando)

Adjudged the **Best research paper of the Applied Science Faculty.**

4.36 An optimal production process to maximize profit of a tea factory, Fiftieth anniversary academic sessions, USJ; (2009); (With M.B.Y. Perera & D.D. Ananda Gamini) (2009)

4.37 Review of the citations of the research paper: A variant of Newton's method with accelerated third-order convergence; Proceedings of the Sri Lanka Association for the Advancement of Science (2011) (with PCP Peiris and T G I Fernando)

4.38 Invertibility of Modified Buffon Transformation matrices; Proceedings of the Sri Lanka Association for the Advancement of Science (2011) (with C D B Hewa)

4.39 Traveling Tourist Problem for Selected Destinations in Sri Lanka; Sri Lanka Association for the Advancement of Sciences (2012) (with Seneviratna, DMKN, Lanel GHJ and Liyanage M)

4.40 Analysis of the University of Sri Jayewardenepura students' academic performance according to gender and the Z-score at the Advanced level, Sri Lanka Association for the Advancement of Sciences (2013) (with N Chathuranga Vidanage & B M S G Banneheka)

4.41 Improved Newton method to solve systems of nonlinear equations, Sri Lanka Association for the Advancement of Sciences (2014) (with H P S Nishani, T G I Fernando & L. Menaka Liyanage

4.42 Finding Roots of a Nonlinear Equation Using Bat-Inspired Algorithm, Proceedings of the 70th Annual Sessions of the Sri Lanka Association for the Advancement of Science, 2014.

4.43 Finite Difference Weerakoon-Fernando Method to Solve Nonlinear Equations without using Derivatives, Sri Lanka Association for the Advancement of Science (2017) (with Shadi Heenatigala & T G I Fernando) **Adjudged the best presentation**

4.44 A modified firefly algorithm to solve univariate nonlinear equations with complex roots. Advances in ICT for Emerging Regions (ICTer), 2015 (with MKA Ariyaratne, TGI Fernando)

Records 04 citations as of May 2020

4.45 Preventive maintenance schedule for rubber tyred gantry cranes in ZPMC Lanka (Pvt) Ltd, Uni Alliance (2016) (with K.D.P.M Kariyawasam, R. Sanjeewa and M.T.S De Silva)

Adjudged the best presenter in the Physical Science Section.

4.46 A self-tuning Firefly algorithm to tune the parameters of Ant Colony System (ACSFA); a preprint arXiv:1610.08222 (2016); (with MKA Ariyaratne & TGI Fernando)

Records 01 citations as of May 2020

4.47 A self-tuning modified firefly algorithm to solve univariate nonlinear equations with complex roots, Evolutionary Computation (CEC), 2016 IEEE Congress,1477-1484(with MKA Ariyaratne & TGI Fernand **Records 07 citations as of May 2020**
http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=7743964&isnumber=7743769

4.48 A Modified Firefly Algorithm to Solve Systems of Nonlinear Equations, Proceedings of the 73rd Annual Sessions of the Sri Lanka Association for the Advancement of Science, 2017. (with M K A Ariyaratne and T G I Fernando)

Records **02 citations as of May 2020**

4.49 A self-tuning firefly algorithm to tune the parameters of ant colony system. International Journal of Swarm Intelligence, 3(4):309331, 2018. doi: 10.1504/ijsi.2018.091415.
(with M.K.A. Ariyaratne and T.G.I. Fernando)
http://www.inderscience.com/info/inarticle.php?artid=91415

4.50 An Archived firefly Algorithm; A mathematical software to solve univariate nonlinear equations, The International Journal on Advances in ICT for Emerging Regions (ICTer), Vol 9, No 1, 2016
Special Issue. [Impact Factor: 0.7], [H Index = 8] (with M.K.A. Ariyaratne and T.G.I. Fernando)
http://journal.icter.org/index.php/ICTer/article/view/213/55.

4.51 Weerakoon-Fernando Method with accelerated third order convergence for systems of Nonlinear equations, International Journal of Mathematical Modelling and Numerical Optimisation ; Volume 8, Issue 3, pages 287-304; Inderscience Publishers (IE)
(with H P S Nishani, T G I Fernando & L Menaka Liyanage)

Records 02 citations as of May 2020

4.52 Solving systems of nonlinear equations using a modified firefly algorithm (MODFA), Swarm and Evolutionary Computation, Volume 48, 2019, Pages 72-92, (with M.K.A. Ariyaratne & T.G.I. Fernando) https://doi.org/10.1016/j.swevo.2019.03.010.
Online publication date: 29 March 2019. 2019 Elsevier (ISSN: 2210-6502) [Source Normalized Impact per Paper (SNIP): 2.841] [SCImago Journal Rank (SJR): 1.278] with M.K.A. Ariyaratne & T.G.I. Fernando)

Records 02 citations as of May 2020

4.53 A Self-Tuning Algorithm to Approximate Roots of Systems of Nonlinear Equations Based on The Firefly Algorithm. International Journal of Swarm Intelligence, Inderscience Publishers (with M. K. A. Ariyaratne & T.G.I. Fernando) (2020)

4.54 A hybrid algorithm to solve multi-model optimization problems based on the particle swarm optimization algorithm with a modified firefly algorithm" accepted to be included in the Future Technologies Conference (FTC) 2020 scheduled from 5-6 November 2020 in Vancouver, Canada. (with M. K. A. Ariyaratne & T.G.I. Fernando)

4.55 (Submitted to be published) Finite Difference Weerakoon-Fernando Method to solve nonlinear equations without using derivatives" (with Shadi Heenatigala & T G I Fernando

5 BOOKS & CHAPTERS OF BOOKS AUTHORED / EDITED

5.1 **මූලික සංඛ්‍යාත්මක ක්‍රම**, (Elementary Numerical Methods) - 217 page book in Sinhala. (January 1997)

First Mathematics book at the university level published in Sinhala

5.2 **Numerical Solution of Ordinary Differential Equations**, 164-page book written in English. (1999)

5.3 **Partial Differential Equations,** 147-page book written in English (2000)

5.4 **R**eference **Standard**, Chapter Published in Sinhala Encyclopaedia - (1994)

5.5 **Measurements,** Chapter Published in Sinhala Encyclopaedia (1994)

5.6 **Accuracy & Accuracy Test,** Chapter Published in Sinhala Encyclopaedia - (1994)

5.7 **මූලික සංඛ්‍යාත්මක ක්‍රම**, (Elementary Numerical Methods), Revised Second edition, (2007) (Godage Publishers).

5.8 Public Universities - Present Status and the Way Forward, Proceedings of the Seminar held on the 4th of June 2016 at the Fingara Town & Country Club. (Vidya Publishers)
Joint Editor with Dr. Shirani Perera.

5.9 **උසස් පෙළ වසර 12 ව්‍යවහාරික ගණිතය** (Vidya Publishers)
Joint Editor with GJK Silva - Author: Chalani Eshani Pathirana.(2017)

5.10 **උසස් පෙළ වසර 13 ශුද්ධ ගණිතය** (Vidya Publishers)
Joint editor with GJK Silva - Author: Chathurika Srimali Abeykoon (2017)

5.11 උසස් පෙළ වසර 12 ශුද්ධ ගණිතය, (Vidya Publishers & Samudra Publishers)
Joint editor with Menaka Liyanage & GJK Silva
Authors: Chathurika Srimali Abeykoon & Hiruni Kamali Pallage.(2018)

5.12 උසස් පෙළ වසර 13 ශුද්ධ ගණිතය, Revised second edition (Vidya Publishers & Samudra Publishers)
Joint editor with GJK Silva ; Author: Chathurika Srimali Abeykoon (2018)

5.13 උසස් පෙළ වසර 12 ශුද්ධ ගණිතය, Revised Second Edition (Sarasavi Publishers)
Joint editor with Menaka Liyanage & GJK Silva
Authors: Chathurika Srimali Abeykoon & Hiruni Kamali Pallage.(2019)

5.14 උසස් පෙළ වසර 12 **ව්යවහාරික** ගණිතය, Revised Second Edition (Sarasavi Publishers)
Joint Editor with GJK Silva - Author: Chalani Ehani Pathirana.(2019)

5.15 උසස් පෙළ වසර 13 ශුද්ධ ගණිතය, Revised Third Edition (Sarasavi Publishers)
Joint editor with GJK Silva ; Author: Chathurika Srimali Abeykoon (In print)

6. SUPERVISION OF POSTGRADUATE WORK:

6.1 Ph. D. Ms. M. K. Anuradha Ariyaratne (Joint Supervisor with Dr. T. G. I Fernando), Firefly Algorithm based self-tuning algorithm to solve systems of nonlinear equations, **November 2018**

6.2 M.Phil. Ms Sagari Deepa Lanka Geeganage (Joint Supervisor with Mr P Dias), Estimating the Mixing Proportions and Parameters of a Mixture of Exponential Models, **Dec. 1997**

6.3 M.Phil. Mr. H K G de Z Amarasekera (Joint Supervisor with Dr G K Watugala), Determination of Zeros using Finite difference Newton's method in the absence of the closed form of the function, **July 1999**

6.4 M.Sc. Mr T G I Fernando (Joint Supervisor with Dr G K Watugala & Ms G S Makalanda), Improved Newton's Method for Solving Non-linear Equations, **May 1998**

6.5 M.Sc. Mr Pasdunkorale Arachchige Jayantha (Joint Supervisor with Dr G K Watugala & Prof. D
A Tantrigoda), Direct Resistance Heating of a Circular Sheet Metal, **May 1998**

6.6 M.Sc. Mr Mahinda B. Herath (Jointly with Dr. J.A.K.S. Jayasinghe & Mr. E A T Edirisooriya), Study of Network Adaptive Routing for Circuit Switched Networks, **May 1998**

6.7 M.Sc. Mr. U Angammana (Joint Supervisor with Dr W C W Perera & Dr B M S G Banneheka) Population Growth, Birth & Death Rates in Sri Lanka, **April 2000**

6.8 M.Sc. Mr. P .P. J. Fernando (Joint Supervisor with Dr G K Watugala & Dr. Nalin Ranasighe) Rrecognition of Sinhala Speech by a Signal Processing Approach via Wavelets as an alternative to Statistical Method using Phonemes. **April 2000**

6.9 M.Sc. P. S. Panawennege (Joint Supervisor with Prof. G. T. F. de Silva & Mr. Wijesinghe) Improving Currently Used Techniques for the Prediction of Electric Field Strength in Coverage Area of a VHF Broadcast Transmission, **April 2000**

6.10 M.Sc. Mr. G H J Lanel, Gaussian Quadrature Newton's method for finding roots of nonlinear equations. **November 2002**

6.11 M.Sc. Ms. A. Tennkoon (Jointly with S Basnayaka & M K N Siriwardene) Storm Surge Forecasting. **December 2003**

6.12 M. Sc. Ms. M. B. Y. Perera, (Jointly with D A Gamini) An optimal production process to maximize profit based on data from a factory producing orthodox tea. **October 2008**

6.13 M. Sc. Ms. DMKN Seneviratna, (Jointly with, Lanel GHJ and MenakaLiyanage) Traveling Tourist Problem for Selected Destinations in Sri Lanka; **(2012)**

6.14 M. Sc. Ms. H P S Nishani, (Jointly with TGI Fernando & L M Liyanage) Improved Newton's method for systems of nonlinear equations **(April 2015)**

6.15 M. Sc. Mr. Uhanovitage Nilantha Indrajith Priyadarshana, Easy and effective rescheduling of train timetable for Sri Lanka Raillways (2015) (with R Sanjewa) **(April 2015)**

6.16 M. Sc. Ms. Ganesha Kalyani Thondilege (2015), Investigation of the possibilities of multispecies sharing the same cage at the national zoological gardens. (with G H J Lanel) **(April 2015)**

6.17 PG.Dip. Mr. Balamurari, (Joint Supervisor with Prof. H G Nandadasa & Mr. P. Dias) Probabilistic Study of Population Genetics using Hardy - Weinberg Law, **April 2000**

6.18 PG.Dip. D. A. Rohana (Joint Supervisor with Dr. Amal Kumarage & Mr. P. Dias; A Mathematical Model Based on Road Accidents in Sri Lanka, **April 2000**

6.19 PG.Dip. Mr Sabapathy Krishnakumar (Jointly with Dr G K Watugala & Dr M L Liyanage), Adaptive Stepsize Control in Numerical Analysis in Solving Initial Value Problems, **May 1998**

6.20 PG.Dip. Mr. B. W. K. N. Dissanayake (Jointly with Mr P Dias and Dr B M S G Banneheka, Study of the Mortality Experience in Sri Lankan Insurance Companies, **May 1998)**

6.21 PG.Dip. Ms. Y K Amarasena (Joint Supervisor with Mr. H L Premaratna & Mr P Dias), Performance of Database Access (**August 1997)**

6.22 PG.Dip. Ms. P R R D Peramuna (Joint Supervisor with Mr. H L Premaratna & Mr E A T A. Edirisooriya) Inventory Control System for Atlas Plastics (Pvt.) Ltd. (**August 1997)**

6.23 PG.Dip. Ms A G C Seneviratne (Jointly with Dr. W L Sumathipala & Mr P Dias) Annual and Seasonal Trends Rainfall in Sri Lanka (August 1997)

6.24 PG.Dip. R A S P Ranaweera Computer based management system for Goods and Services tax administration in Sri Lanka (June 1999).

6.25 PG.Dip. A A. P. Liyanage (Joint Supervisor with C J Rajapaksha & P. Dias) A Partial Solution to ease up traffic congestion in Nugegoda metropolitan Area, **July 2002**

6.26 **PG.Dip.** Ms. V. Abeygunawardene – Influence of Repair & Maintenance procedure on the efficiency & productivity of the University and suggestions for improvement.

7 SPECIAL DEGREE IN MATHEMATICS) FINAL YEAR PROJECTS SUPERVISION

7.1 Mr B M S G Banneheka**,** Study of Numerical Methods for Non-linear Equations (1985/86)

7.2 Ms K C N Shanthidevi, Survey of Numerical Methods in Solving Systems of Linear Equations (1985/86)

7.3 Ms L M Lelwela, A survey of Numerical Schemes for Solving Ordinary Differential Equations, (1986/87)

7.4 Mr R K Nihal**,** A Survey of Polynomial Interpolation Methods (1986/87)

7.5 Mr E A T A Edirisooriya, A Survey of Numerical Methods in Solving Partial Differential Equations (1989/90)

7.6 Mr Kapila Alwis, Optimal Stepsize Control for Numerical Algorithms **(**89/90)

7.7 Mr Marcus Brinsden - **Curtin Univ.**, Perth, Australia, A Survey of Transform Methods in Solving Partial Differential Equations (92/93)

7.8 Mr M K Chinthaka Gunadasa, Finite Difference Techniques for Partial Differential Equations (Dec1994)

7.9 Mr H K G de Z Amarasekera**,** Testing Finite Difference Newton's Method in Two Dimensions 1995/96)

7.10 Ms K A D T Kulawansa, Numerical Integration Methods (1998)86.11. Ms. H. V. Vidanagamage, Numerical Methods to Find Eigenvalues of a Matrix (2000)

7.11 Mr. Abeysinghe , Difference Methods in Numerical Analysiis

7.12 Ms. P A N D Perera, Function Approximation Methods (2002)

7.13 Ms. H I B Soysa, A study of Fenchel conjugate of convex functions (2002)

7.14 Ms. R A S S Ranasighe, Analysis of Income and Expenditure of fee-paid Postgraduate programs conducted at the University of Sri Jayewardenepura (2007)

7.15 Ms. Imanthika Ranaweera, Infinite Products (with Mr. G J K Silva) (2007)

7.16 Mr. Dilum de Silva, Music & Mathematics (with Dr. L M L Liyanage) (2008)

7.17 Ms. Dayani Perera, Understanding the framework of Mathematical modelling, (with N C Ganegoda) (2009)

7.18 Ms. Lakmali Salgado, Degree reduction in Bezier curves (2009) (with T G I Fernando)

7.19 Mr. C P Chandima Peiris, Review of the citations of the research paper: A variant of Newton's method with accelerated third-order convergence. (2011)

7.20 Mr. C. B. D. Hewa, Invertibility of the Modified Buffon Transformation Matrix (2011)

7.21 Mr. N. Chathuranga Vidanage, Analysis of the University of Sri Jayewardenepura students' academic performance according to gender and the Z-score at the Advanced level (with B M S G Banneheka) (2012)

7.22 Ms. Piyumi Madhubhashini Welitharage, Teaching Calculus in Sinhala using Audio visual techniques. (with Gayan Jayasinghe) (2013)

7.23 Ms. Chalani Eshani, Using Audio Visual Technology in Learning A/L Mathematics in Sinhala (Yr 12 AM), (with G J K Silva) (2014)

7.24 Ms. Hiruni Pallage Using Audio Visual Technology in Learning A/L Mathematics in Sinhala (Yr 12 PM) (with L Menaka Liyanage) (2014)

7.25 Mr. Pahan Kariyawasam, Preventive maintenance schedule for Rubber Tyred Gantry Cranes In ZPMC LANKA (PVT) Ltd., (with R Sanjeewa) (2014)

7.26 Ms. Chathurika S Abeykoon; Using Audio Visual Technology in Learning A/L Mathematics in Sinhala (Yr 13 PM) (with G J K Silva) (2015)

7.27 Mr. Madhusha Lakshan; Using Audio Visual Technology in Learning A/L Mathematics in Sinhala (Yr 13 AM) (with G J K Silva) (2015)

7.28 Ms. L M Asha Madhuwanthi, A Study of students' performance at Engineering and Physical Science undergraduate degree programs (with Chitraka Wickramarachchi) (2016)

7.29 Shadi Heenatigala, Search for an Efficient Algorithm without the derivatives to numerically solve nonlinear equations (with T G I Fernando) (2016)

8 CONTRIBUTIONS TO CURRICULUM AND INSTITUTIONAL DEVELOPMENT

8.1 Initiated, prepared the proposal, laid all necessary ground work and started the pioneering Master's Degree Program in Industrial Mathematics in Sri Lanka.

8.2 Prepared the proposal (100+ page) to receive the **Science and Technology personnel development Grant** from the Asian Development Bank. Department was given a grant to purchase hardware and software for undergraduate and postgraduate programs.

8.3 Proposal to select the undergraduates to follow the Special Degree in Mathematics at the end of their second year changing the practice of selecting them at the end of their first year considering **the high failure rate prevalent at the time**. Implemented in Mathematics and subsequently all other departments in the faculty of Applied Science.

8.4 Proposed to introduce the subsidiary subject requirement for the Mathematics Special candidates to encourage students to choose the Mathematics Special program, increasing the student number. Donated **100,000.00 LKR** to establish a fund to award a **Gold Medal** for the best performer from the graduating Mathematics Honors batch.

8.5 Laid groundwork and prepared the first Institutional Report of SJP in 2009/10 as the Secretary of the Quality assurance shell with the help of all Deans and the HoDs of the University until voluntarily suggesting and handing over the responsibility to Prof. Samanthi, the present Director.

9 MEMBERSHIPS & POSITIONS HELD IN ACADEMIC SOCIETIES

9.1 Member - Mathematical Association of America (1979 - 1984)

9.2 Member - American Mathematical Society (1979 - 1984)

9.3 Member, Society for Industrial and Applied Mathematics (SIAM) 1991-1993

9.4 Life Member - Sri Lanka Association for the Advancement of Science

9.5 Council Member - Computer and Information Technology Council of Sri Lanka **(CINTEC)** (June1989 - June 1991)

9.6 Member - Examination Council for National Examination in Computer Studies; **(NECS**) (1990/1991)

9.7 Member Syllabus Committee for National Examination in Computer Studies

9.8 Chairperson - **First Research Committee of the Faculty of Applied Science**, SJP (March 1990 July 1991) with members: Prof. P C B Fernando, Prof. Ajit Abeysekera and Prof. Manel Attigalle

9.9 Council member – Computer & Information Technology Council of Sri Lanka (1989 – 1991)

9.10 Member - Australian Mathematical Society (1991 -1993)

9.11 Member - Australian Applied Mathematics society (1991 -1993)

9.12 Chairperson - Faculty Sub Committee to Consider Introducing Forestry & Environmental Studies as a Subject at the Undergraduate Level by establishing a separate department.

9.13 Coordinator - Master's Degree program in Industrial Mathematics (January 1996 to January 2002)

9.14 **Secretary - Physical Sciences Section o**f Sri Lanka Association for the Advancement of Science **(SLAAS)(1999)**

9.15 President **- Physical Sciences Section of SLAAS** (2000)

9.16 Vice President – General Research Committee of SLAAS (2001)

9.17 **Chairperson – General Research Committee of SLAAS (2002)**

9.18 Chairperson – Board of Study in Physical Sciences, Faculty of Graduate Studies, USJ (2002 – 2004)

9.19 Council member (Elected) - Sri Lanka Association for the Advancement of Science (2003)

9.20 Evaluator – Mathematical Olympiad team, Cornell University

9.21 Faculty Fellow –Holland International Living Center, Cornell University

9.22 Evaluator – Integral Bee Competition, Texas A & M University

9.23 Coordinator – PG Diploma/Master's program in Industrial Mathematics (2006 -2010)

9.24 Chairperson - Board of Study in Physical Sciences 2008 -2010

9.25 Chairperson – Faculty sub-committee to resolve issues of the English language learning.

10 REVIEWING PAPERS

The following are some of the journals that requested my services as a referee in recent years. Please note that I refrain from giving the titles of the articles to preserve the confidentiality.

10.1 Journal of Computational and Applied Mathematics. (December 2019)

10.2 IEEE Access. (October 2019)

10.3 Journal of Cogent Business & Management. (September 2019)

10.4 International Journal of Finance and Economics. (August 2018)

10.5 Asian-European Journal of Mathematics (AEJM). (July 2018)

10.6 Journal: of Mathematical Communications. (September 2017)

10.7 Journal of Mathematical Analysis.

11 SEMINARS & WORKSHOPS ORGANISED / ACTED AS RESOURCE PERSON / PARTICIPATED

11.1 Seminar on Control Theory, Centre de Recherché de Mathematics, University of Montreal, Canada. (July,1983)

11.2 International Colloquium on Number Theory to Commemorate Ramanujan's Birth Centenary, Institute of Fundamental Studies, Hantana, Kandy, Sri Lanka. (December, 1987)

11.3 UNESCO Workshop on Teaching Mathematics and Science Using Computers, Royal Melbourne Institute of Technology, Melbourne, Australia. (November 15 - 24, 1989)

11.4 Workshop to formulate the Syllabus for the National Examination in Computer Studies, BMICH, Sri Lanka. (May 1990)

11.5 Seminar on Information Technology - The Need for Law Reforms, BMICH, Sri Lanka. (Sept., 1990)

11.6 Annual Sessions of the Australian Mathematical Society, Perth, Australia (July 6 - 10, 1992)

11.7 Numerical Solution of Nonlinear Algebraic Equations in the Absence of Derivative, School of Math & Statistics, Curtin University of Technology, Australia, September 1992.

11.8 Organized seminars on their postgraduate research when Mr. P Dias, Dr. Prasansa Kalukottege, Dr. Menaka Liyanage, Dr. B M S G Banneheka and Mr. E A T A Edirisuriya returned to the country after finishing their doctoral and Master's degrees in Australia, Japan, Canada, Canada and China respectively.

11.9 Attended Weekly Educational Mathematics seminar/ Dept. of Mathematics, Cornell University, USA (2004/05).

11.10 Shared relevant material I have produced such as articles to public newspapers and contributed to the discussion at the Workshop: "High level consultative dialog on Preventing Ragging and Sexual and Gender based Violence" organized by the University Grants Commission, Hotel Galadari, Colombo (April 21, 2016)

11.11 International Industrial Mathematics Conference **I^2MC** – I, Fingara Town & Country Club and The University of Sri Jayewardenepura, (June 3rd -5th 2016)

11.12 Participated in numerous Mathematics and related talks, seminars and Colloquia held in USA as a doctoral student for 5 years & as a visiting professor for 2 years & in Australia as a visiting Scholar and in Sri Lanka.

12 REPORTS & DOCUMENTED ORATIONS

12.1 How my Teaching evolved over the years - Educational Mathematics Seminar, Cornell University, USA - April 2005

12.2 **Whither Research; Applied or Pure? (**December 2001**), Theme Seminar,** Research Sessions, USJ

12.3 Mathematics **& Industry – Bridging the Gap** (2000), Presidential Address of the Physical Sc**ie**nces Section of SLAAS

12.4 Proposal to start a Master's Degree in Industrial Mathematics submitted to the Council of USJ through Faculty Board of Applied Science and the Senate, USJ (July 1995)

12.5 Documented Oration delivered at the inauguration ceremony of the Masters Programme in Industrial Mathematics (March 1996); Appeared in the centre page of the Daily News on the 24th of April 1996.

12.6 Computer Education, Issues, Policy & Strategies - Country paper presented at the UNESCO Workshop on The Use of Computers in the Teaching of Science and Mathematics in Asia and the Pacific, RMIT, Melbourne, Australia - (November 13-29, 1989)

12.7 Over 100-page proposal to ADB to earn a grant to purchase computers and train man power to the Department of Mathematics, USJ (1997)

13. INITIATIVES

13.1Nurturing a research culture in Mathematics and promoting applications of Mathematics: Pioneered the **field of Industrial Mathematics** in Sri Lanka with the objectives of paving the way for Mathematics, Computer Science, Physics and Engineering graduates who were stagnated in their positions having no avenue for higher studies in their respective fields to further their career goals. Put forward the proposal, laid down all necessary groundwork and was the founding coordinator of the PG Dip/MSc program in Industrial Mathematics instituted in 1996. There were no postgraduate programs for Physical Science and Engineering graduates to follow in any university in Sri Lanka till then. It was instrumental in establishing collaborative Mathematics research and inculcating previously non-existent Mathematical research culture.

13.2 Coordinator/PGDip. / MSc in Industrial Mathematics (1996-2002 & 2006-2010): Coordinator/PGDip. / MSc in Industrial Mathematics (1996-2002 & 2006-2010): Completed three high-achieving Master's batches within 6 years by February 2002 and another two batches during the second term ending in 2010. This is a record for a program that required the completion of three heavy semesters of 27 courses in Mathematics, Computer Science and Statistics followed by examinations and a thesis with high level research. At least 10 IM/MSc graduates have finished PhD degrees while some others hold very useful positions for the country.

13.3 Striving to eradicate ragging: The article written to the newspaper was quoted in the parliament by the minister of higher education to obtain support to pass legislature prohibiting ragging. Formed orientation committees with academics and senior students to take action against ragging. Organized seminars with academics from every faculty and addressed the issue of ragging publicly. Established a ragging-free atmosphere within the Faculty of Applied Science premises.

13.4 Introduction of the Industrial Internship Program: Introduced the Industrial Internship Program as the Head of the Department of Mathematics, allowing Mathematics Honors students to spend a fixed duration before the start of their fourth year in an industrial setting (2003). This paved the way for some to secure employment immediately after graduation.

13.5 Starting the Mathematics Library: Established Mathematics library using personal books (such as Stewart, Burden & Faires, Thomas and Finney) brought after sabbatical leave in June 2005 and contributed large book consignments a few times thereafter to enhance the general library and the Mathematics library. **Donated the monthly coordinator's fee to buy books to the mathematics library for about a year.**

13.6 Donations for student Welfare: Starting from donating the Presidential Award of 100,000 LKR to establish a scholarship for Industrial Math to encourage students in 2001, donated personal funds to needy students to pay tuition for postgraduate studies, and donated another 100,000 LKR to establish a fund for scholarship and a gold medal for best student in the B. Sc. Mathematics Special program.

13.7 Initiated the project: **"Using audio visual technology in learning A/L Combined Mathematics in Sinhala"** to help senior school leavers especially university entrants understand the basic mathematical concepts properly to reverse the trend of exam oriented private tuition culture. Got together with Dr (Ms) Menaka , Mr. GJK Silva and three Mathematics special students Ms. Srimali, Ms. Chalani & Ms. Hiruni to produce videos to cover the G. C. E. Advanced Level syllabus. The objective was to teach the students basic mathematical concepts properly as students didn't seem to have grasped mathematical concepts properly due to the examination oriented tuition culture. Produced videos were uploaded to the university open learning site and subsequently use the text prepared to be published in book form. Spent long hours editing videos and later editing books & coordinating the Project team. Though it was a challenging and a difficult task taking more than five years, the final product is embraced by students and teachers alike. Now the set of books each carrying a CD with video lessons has become the best learning material for Advanced Level students. They are even more used during the lockdown as schools and tuition classes are out of reach.The following link is available in the SJP Open Learning site, free of charge for everybody. http://learn.sjp.ac.lk/course/gce-al-combined-mathematics/

14. CONTRIBUTION TO TEACHING AND ACADEMIC DEVELOPMENT

- **Tried to improve the quality of teaching** by introducing **teacher evaluation forms** to postgraduate level as far back as 1996 and subsequently to undergraduate level to get a feedback for lecturers.
- Provided **Sinhala notes along with English notes** via the power point slides for **first year students** so they could learn English along with Mathematics.
- Encouraged a **"chit" system** to break the ice between the lecturer and the students to counter student reluctance to communicate during lecture.
- Initiated giving continuous assessments, pop-up-quizzes in addition to final exams to encourage students
- Knowing new trends, introduced a new course: "**Mathematical Exposition**" to improve students' independent learning ability and the presentation skills.
- Introduced a course on **History of Mathematics** to the Special program as the first such course in Sri Lanka. Designed it to improve students' enthusiasm in Mathematics, writing and presentation skills and peer evaluation skills as well.
- Introduced a **Seminars course for the Master's program** in Industrial Mathematics with features such an automathography, internet assignment, a library assignment and a term paper in addition to giving student presentations.
- Guided and evaluated nearly 100 Term Papers and nearly 200 presentations by final year Mathematics special and Master's degree in Industrial Mathematics students during the last 10 years of the career.