

## CURRICULUM VITAE

**Dr. R. SUDHESH**

**Associate Professor and Head**

**Department of Mathematics**

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➤ **Research Area:**

- Applied Probability
- Stochastic Models
- Queueing and Reliability

➤ **Educational Qualifications:**

<b>Qualification</b>	<b>College/University</b>
Ph.D. (Specialization: Stochastic Models)	IIT Madras
M.Phil. Applied Mathematics	Bharathiar University
PG (specialization) Mathematics	Madurai Kamaraj University
UG (specialization) Mathematics	Madurai Kamaraj University

**Experience:**

<b>Name of Company / Institutions</b>	<b>Designation of Post</b>	<b>From</b>	<b>To</b>
UCE, BIT Campus, Anna University, Trichy-24	Associate Professor	14-10-2015	Till date
UCE, Anna University, Villupuram	Associate Professor	14-10-2012	13-10-2015
UCE, Anna University, Villupuram	Assistant Professor	14-10-2009	13-10-2012
NIT Warangal	Assistant Professor	31-10-2008	13-10-2009
Muthurangam Govt. Arts College	Assistant Professor	26-12-2007	30-10-2008
VIT University	Assistant Professor	01-02-2006	15-11-2007

➤ **Awards / Honours Received:**

1. Board of Studies, Anna University Nominee for Two of the affiliated colleges (2023-2026)
2. Visited Indian Institute of Technology Delhi to contribute in Airtel research project from March 27, 2023, to April 07, 2023
3. Visited Indian Institute of Technology Delhi to explore research in the area of Stochastic Models in Queueing Theory from November 22, 2019 to December 6, 2019
4. Member, Programme Committee, Annual Convention of The Operational Research Society of India & International Conference on Analytics in Operational Research 12 - 14 December, 2016
5. Visited Indian Institute of Technology Delhi for research collaboration during May 15-30, 2015

➤ **Additional / Academic Responsibilities at University:**

1. Coordinator – NBA –UCE BIT Campus, Tiruchirappalli (Feb. 2021-till date)
2. Zonal Officer – Zone 18, Tiruchirappalli – AUC, Chennai (2016-2019)
3. Chief Superintendent for Anna University Examinations (2013-2015)
4. Placement Officer – UCE, Villupuram (2010-2015)
5. Zonal Officer-Zone 9-AUT Chennai (2010-2011)

➤ **Membership of Scientific and Professional Societies:**

- ISTE Life Member

➤ **Completed PG/UG Projects:**

- Number of PG Projects Completed: 2 Nos

➤ **Research Guidance (M.S/Ph.D.) (Completed):**

Sl. No	Name of the scholar	Title of the thesis	Year of registration	Date of viva voce
1.	Francis Raj L	Transient Analysis of Queues with Presence and Absence of Catastrophe	2009	05-12-2013
2.	Sebasthi Priya R	Analysis of Catastrophic Queueing Models	2011	05.01.2017
3.	Azhagappan A	Analysis of Vacation Queues with	2011	07.06.2017

		Customers' Impatience		
4.	Savitha P	Heterogeneous Multiserver Queueing Models with System Disaster	2014	27.03.2018
5.	Vaithyanathan A	Analysis of Certain Discrete and Continuous Time Queueing Models Subject to Disaster	2011	31.12.2019
6.	Mohammed Shapique A	Transient Analysis Of Certain Vacation Queueing Models for Power Saving in Communication Systems	2017	20.03.2023
7.	Amirthasaravanan A	Performance Amelioration of Web Services Discovery Optimization using Slime Mold Algorithm	2011	28.03-2018

➤ **Research Guidance (M.S/Ph.D.) (Ongoing):**

Sl. No	Name of the scholar	Tentative Title of the thesis	Year of registration	Status
1.	Nagalakshmi V	Resolving the Noisy and Compounded Clusters of an Image to Absolute Resolution in Image Processing	2015	About to Submit Thesis
2.	Balamurugan K	Performance Analysis of Vacation Queueing Model and its Variants	2021	Course Work Completed
3.	Vaishnavi M	Transient Analysis of Vacation Queues	2021	Course Work Completed

**a. Publications: Books / book chapters:**

Title: Time-dependent Analysis of State-dependent Queues (ISBN: 978-3-8465-9918-1)

Publisher: LAP LAMBERT Academic Publishing

**b. Publications: International Journals:**

1. R. Sudhesh, A. Mohammed Shapique and S. Dharmaraja, Analysis of a Multiple Dual-Stage Vacation Queueing System with Disaster and Repairable Server, *Methodology and Computing in Applied Probability*, (2022) 24:2485–2508.
2. R. Sudhesh and A. Mohammed Shapique, Transient analysis of power management in wireless sensor network with start-up times and threshold policy, *Telecommunication Systems*, (2022) 80:123–140.
3. S. Dharmaraja, Anisha Aggarwal, and R. Sudhesh, Analysis of Energy Saving in User Equipment in LTE-A using Stochastic Modelling, *Telecommunication Systems*, (2022) 80:1–16.
4. Ramupillai, Sudhesh, Shapique, M. & Selvamuthu, D. Analysis of a Multiple M/M/1/DV Queueing System with a Dual-Threshold Policy, Vacation Interruption and a Waiting Server. *Bull. Iran. Math. Soc.* (2022). 48, 3561–3591.
5. R Sudhesh and A Vaithyanathan, Stationary Analysis of infinite queueing system with two-stage network server, *RAIRO-Operations Research*, 55, S2349-S2357, 2021.
6. R Sudhesh and A Azhagappan, Transient solution of an M/M/∞ queue with system's additional tasks and impatient customers, *International Journal of Mathematics in Operational Research* 16 (1), 82-97, 2020.
7. R Sudhesh and RS Priya, An analysis of discrete-time Geo/Geo/1 queue with feedback, repair and disaster, *International Journal of Operational Research* 35 (1), 37-53, 2019.
8. Sudhesh Ramupillai and A Vaithyanathan, Analysis of state-dependent discrete-time queue with system disaster, *RAIRO-Operations Research*, 53 (5), 1915-1927, 2019.
9. R Sudhesh and A Azhagappan, Transient analysis of an M/M/1 queue with variant impatient behavior and working vacations, *OPSEARCH* 55 (3-4), 787-806, 2018.
10. R. Sebasthi Priya and R. Sudhesh, Transient analysis of a discrete-time infinite server queue with system disaster, *International Journal of Mathematics in Operational Research* 12(1), 91–101, 2018.
11. R Sudhesh and P Savitha, Transient behaviour of three-heterogeneous servers queue with system disaster and server repair, *RAIRO-Operations Research* 51 (4), 965-983, 2017.
12. R Sudhesh and A Azhagappan, S Dharmaraja, Transient analysis of M/M/1 queue with working vacation, heterogeneous service and customers' impatience, *RAIRO-Operations Research* 51 (3), 591-606, 2017.
13. R Sudhesh, RS Priya and RB Lenin, Transient analysis of a single server discrete-time queue with system disaster, *RAIRO-Operations Research* 51 (1), 123-134, 2017.

14. R Sudhesh, P Savitha and S Dharmaraja, Transient analysis of a two-heterogeneous servers queue with system disaster, server repair and customers' impatience, *Top 25* (1), 179-205, 2017.
15. R Sudhesh and A Azhagappan, Transient Analysis of M/M/1 Queue with Server Vacation Customers Impatient and a Waiting Server Timer, *Asian Journal of Research in Social Sciences and Humanities* 6( 9), 1096-1104, 2016.
16. A.Amirthasaravanan, Paul Rodrigues and R.Sudhesh, An Analysis on Runtime Associated QOS-Based Proficient Web Services Discovery Optimization, *Brazilian Archives of Biology and Technology*, Vol.59 no.spe2 Curitiba 2016 Epub. Jan. 23, 2017.
17. A.Amirthasaravanan, Paul Rodrigues and R.Sudhesh, ISM: Intelligent Slime Mold Optimization Algorithm for Proficient Web services Discovery, *Asian Journal of Information Technology* 15(10), 1579-1585, 2016.
18. K Karthikeyan and R Sudhesh, Recent review article on queueing inventory systems, *Research Journal of Pharmacy and Technology* 9 (11), 2056-2066, 2016.
19. R Sudhesh, RS Priya and RB Lenin, Analysis of N-policy queues with disastrous breakdown, *TOP 24* (3), 612-634, 2016.
20. A.Amirthasaravanan, Paul Rodrigues and R.Sudhesh, Context Aware Web Service Discovery Optimization By Chameleon Inspired Algorithm, *Special Issue-International Journal of Computer Science and Information Security* 14 CIC 2016, (7 Pages)
21. R.Sudhesh and A.Vaithiyathan. Time-Dependent Single Server Markovian Queue with Catastrophe, *Applied Mathematical Sciences* 9( 66), 3275 - 3283, 2015.
22. A.Amirthasaravanan, Paul Rodrigues and R.Sudhesh, Machine driven and effectual web service, discovery by hybrid algorithm. *Applied Mathematical Sciences*, 9( 65), 3213-3225, 2015.
23. R Sudhesh and KV Vijayashree, Stationary and transient analysis of M/M/1 G-queues, *International Journal of Mathematics in Operational Research* 5 (2), 282-299, 2013.
24. R Sudhesh and L Francis Raj, Stationary and transient solution of Markovian queues—an alternate approach , *International Journal of Mathematics in Operational Research* 5 (3), 407-421, 2013.
25. R Sudhesh and LF Raj, Computational analysis of stationary and transient distribution of single server queue with working vacation, *Global Trends in Computing and Communication Systems*, 480-489, 2012.
26. R Sudhesh, Transient analysis of a queue with system disasters and customer impatience, *Queueing systems* 66 (1), 95-105, 2010.

27. PR Parthasarathy and, R Sudhesh, A state-dependent queue alternating between arrivals and services, *International Journal of Operational Research* 7 (1), 16-30, 2009.
28. PR, Parthasarathy and R Sudhesh, Transient solution of a multiserver Poisson queue with N-policy, *Computers & Mathematics with Applications* 55 (3), 550-562, 2008.
29. PR Parthasarathy and R Sudhesh, Time-dependent analysis of a single-server retrial queue with state-dependent rates, *Operations Research Letters* 35 (5), 601-611, 2007.
30. PR Parthasarathy and R Sudhesh, Transient Solution of a Queue with State- and Time-dependent Rates. *The Mathematical Scientist* 32(2), 140-146, 2007.
31. PR Parthasarathy and R Sudhesh, Exact transient solution of a state-dependent birth-death process. *International Journal of Stochastic Analysis* 2006, 2006.
32. PR Parthasarathy and R Sudhesh, A formula for the coefficients of orthogonal polynomials from the three-term recurrence relations, *Applied Mathematics Letters* 19 (10), 1083-1089, 2006.
33. PR Parthasarathy and R Sudhesh, Exact transient solution of a discrete time queue with state-dependent rates, *American Journal of Mathematical and Management Sciences* 26 (3-4), 253-276, 2006.
34. PR Parthasarathy and R Sudhesh, Summation Identities. *International Journal of Modern Mathematics*, 1, 1-12, 2006.
35. PR Parthasarathy and R Sudhesh, Exact transient solution of a state-dependent birth-death process *International Journal of Stochastic Analysis* 2006, 2006.
36. PR Parthasarathy and R Sudhesh, An exact solution for an M/M/1 queue with piecewise-constant rates, *Mathematical Scientist* 31 (1), 48-52, 2006.
37. PR Parthasarathy and R Sudhesh, The overflow process from a state-dependent queue, *International Journal of Computer Mathematics* 82 (9), 1073-1093, 2005.

➤ **List of Seminar / Short Term Course /FDP/ Workshop organized:**

- Organized and served as a Coordinator for the Faculty Development Programme on **Transforms and Partial Differential Equations** from 20<sup>th</sup> to 26<sup>th</sup> June 2013.
- Organized the **International Conference on Mathematics and its Applications-2014** from 15-17, December 2014.

➤ **List of Seminar / Short Term Course /FDP/ Workshop attended:**

- Workshop on “Mathematica and Software packages HYP and HYPQ” conducted by *Institute of Mathematical Sciences*, Chennai between 16 September 2002 to 20 September 2002,
- “International conference & Instructional Workshop on Industrial Mathematics” conducted by *Indian Institute of Technology Bombay* between 2 Dec. 2002 to 09 Dec. 2002
- Workshop on “Modelling in Life and Material sciences and in Technology” conducted by the *Abdus Salam International Center for Theoretical Physics*, Trieste, Italy between 8 March 2004 and 2 April 2004.
- Summer school on “Stochastic Processes and its Applications” conducted by *Indian Statistical Institute Bangalore* between 4 July 2005 to 16 July 2005
- Workshop on “Qualitative Finance” conducted by *Indian Institute of Science*, Bangalore between 20-24 November 2006.
- Participated in the Orientation (Intensive Training) Programme conducted by UGC-University of Madras from 26-12-2007 to 24-01-2008
- Workshop on “Process Modeling, Simulation and Optimization” conducted by *National Institute of Technology, Warangal* between 1-14 June 2009.
- Attended the Faculty Development Training Programme on “Engineering Mechanics” from 9<sup>th</sup> to 15<sup>th</sup> December 2013.
- Participated in the Eighth International conference and Instructional Workshop on “Matrix Analytic Methods in Stochastic Models (MAM8 2014)” during 06-09 January 2014.

**National / International Conferences organized / Participated:**

- Organized **National Technical Symposium-Agnimithra 2012** held on 1<sup>st</sup> and 2<sup>nd</sup> March 2012.
- Organized and served as a Co-ordinator for the Faculty Development Programme on **Probability and Queueing Theory** from 30<sup>th</sup> November to 6<sup>th</sup> December 2012.
- Served as a Co-ordinator for 3<sup>rd</sup> **National Technical Symposium-Agnimithra 2013**.
- Presented a paper entitled "An exact solution of Birth and Death process with state- and time-dependent rates" in the National symposium on Mathematical Methods and Applications conducted by Indian Institute of Technology Madras on 21 December 2002.

- Presented a paper entitled "Inter-arrival time Distribution of Overflow Process with varying Birth-death Rates" in the National symposium on Mathematical Method and Applications conducted by Indian Institute of Technology Madras on 22 December 2003.
- Presented a paper entitled "Exact Transient Solution of State-dependent Birth-Death Processes" in the National symposium on Mathematical Methods and Applications conducted by Indian Institute of Technology Madras on 22 December 2004.
- Presented a paper entitled "Transient Analysis of Multiprocessor Systems" in the International Conference INDICON 2005 conducted by IEEE Madras Section at IIT Madras dur, 11-13, 2005.
- Presented a paper entitled "Exact Transient Solution a Discrete-time Queue with State-dependent Rates" in the National symposium on Mathematical Methods and Applications conducted by Indian Institute of Technology Madras on 22 December 2005.
- Presented a paper entitled "Transient Analysis of an M/M/1 Queueing Model subject to Disaster" in International Conference on Mathematical and Computational Models-ICMCM '11 conducted by PSG College of Technology, Coimbatore during 19-21, December 2011.
- Presented a paper entitled "Transient Solution of a Single server N-policy Poisson Queue with Catastrophe" in the International Conference on Applied Mathematical Models-ICAMM 2014 conducted by PSG College of Technology, Coimbatore during 3-5, January 2014.
- **Professional recognitions:** Reviewer for many reputed International Journals

**(A) Chairperson for conferences / Seminar / Technical symposia:**

- Chairperson and to organize a session of International Conference on Advances in Mechanical Engineering" (ICAME-2015) on 15th October 2015
- Chairperson and to organize a session of Fifth International Conference on Applied Mathematical Models (Icamm 2023) on 5 and 6 January 2023

**(B) Guest lectures delivered:**

- Probability Distributions and Its Applications, SRM Institute of Science and Technology, Tiruchirappalli (February 27, 2023)
- Differential Equation, Dhanalakshmi Srinivasan Engineering College, Perambalur (July 02, 2021)



- Analysis of power management in Wireless Sensor Network with start-up times and threshold policy, National Institute of Technology, Rourkela (May 13, 2022)
- Differential Equations and its Applications (FDP), Dhanalakshmi Srinivasan Engineering College, Perambalur (July 2, 2021)
- Introduction to Probability Distributions and Stochastic Differential Equations, Saranathan College of Engineering (July 30, 2020)
- Queueing and Reliability for Engineering, Academic Staff College, VIT University, Vellore (2019)
- Lecture On Integral Calculus, University College Of Engineering, Dindigul (2019)
- Random Variables A Nd Its Distributions, National Conference, Shri Sakthikailassh Womens College, Salem (2019)
- Stochastic Process and its Applications (Refresher Course), Academic Staff College, Bharathidasan University, Tiruchirappalli (2018)
- Applied Probability and Queueing Models, Academic Staff College, VIT University, Vellore (2018)
- Introduction to Stochastic Differential Equations, VIT University, Vellore (2017)
- Applications of Partial Differential Equations, University College Of Engineering, Ariyalur (2017)
- One and Two Dimensional Random Variables, Alagappa Chettiar Government College of Engineering and Technology, Karaikudi, (September 16, 2016)
- How to Prepare a Research Article and Dissertation using Latex, University College of Engineering Villupuram (2013)
- Two Dimensional Random Variables and its Applications, University College of Engineering Panruti (2012)
- Research Directions in Queueing Theory and Introduction to Jackson Networks, Anna University Chennai (2010)
- MATLAB and Graphics, Kakatiya University, Warangal ( 2009)