

Faculty Profile



Dr. S. Swathi M. Sc, Ph. D

Mathematics/ Science and Humanities

HIGHLIGHTS:

- **Number of Journal Publications: 10**
- **H-Index: 3**
- **Project Funding Received: -**
- **Patents Published: -**
- **Patents Granted: -**

PROFESSIONAL LINKS:

- **Scopus ID: 58940027700**
- **Scopus Link: <https://www.scopus.com/authid/detail.uri?authorId=58940027700>**
- **Google Scholar ID: <https://scholar.google.com/citations?user=99AbxNsAAAAJ&hl=en>**
- **Anna University Faculty ID: 2634631999**
- **AICTE Faculty ID: 1-47891081837**
- **Orchid ID: <https://orcid.org/0000-0003-0676-5533>**

PROFESSIONAL BACKGROUND:

- **Teaching Experience till date: 1 year**

AREA OF SPECIALIZATION:

- Operations Research
- Fuzzy Set Theory
- Fuzzy Inventory Modelling
- Applied Mathematics
- Probability

PAPERS PUBLISHED:

UGC CARE – GROUP II (Scopus Indexed)

1. Kalaiarasi, K., Anitha, N., **Swathi, S.**, & Ranjitha, B. (2024). Optimization of Neutrosophic Vendor-Buyer Economic Order Quantity Model Using Particle Swarm Optimization. *International Journal of Neutrosophic Science (IJNS)*, 23(4).
2. Kalaiarasi, K., & **Swathi, S.** (2024). Development and Evaluation of a Centroid-Based EOQ Model for Items Subject to Degradation and Shortages. *Journal of Applied Mathematics & Informatics*, 42(5), 1063–1076. <https://doi.org/10.14317/JAMI.2024.1063>
3. **Swathi, S.**, & Kalaiarasi, K. (2023). An integrated approach of ant colony optimization (ACO) machine learning (ML) and fuzzy logic for revolutionizing inventory management in modern supply chains. *Tuijin Jishu/Journal of Propulsion Technology*, 44(3).

UGC CARE – GROUP II (Web of Science Indexed)

1. Kalaiarasi, K., **Swathi, S.** (2024) Optimization of Economic Order Quantity (EOQ) Model in Terms of Trigonal Fuzzy Numbers with Linear Regression Analysis. *Indian Journal of Natural Sciences*, Vol.15 / Issue 84 / Jun / 2024, ISSN: 0976 – 0997
2. Kalaiarasi, K., **Swathi, S.** (2023) Arithmetic Operations of Trigonal Fuzzy Numbers Using Alpha Cuts: A Flexible Approach to Handling Uncertainty. *Indian Journal of Science and Technology* 16(47): 4585-4593. <https://doi.org/10.17485/IJST/v16i47.2654>

UGC CARE LIST JOURNAL

1. Kalaiarasi, K., **Swathi, S.** (2024) Optimization of Fuzzy Inventory Management in Industrial Processes Using Deep Learning Algorithms: A Hybrid Approach for Enhancing Demand Forecasting and Supply Chain Efficiency, *Advanced Engineering Letters*, Vol.3, No.4, 141-153, e-ISSN: 2812-9709

Book Chapter Publications

SCOPUS INDEXED

1. Kalaiarasi, K., **Swathi, S.**, Islam (Naz), S.M.N. (2024). Fuzzy Vendor–Buyer Trade Credit Inventory Model-Pentagonal Numbers in Permissible Limits Delay in Account Settlement with Supervised Learning. In: Jain, S., Marriwala, N., Singh, P., Tripathi, C., Kumar, D. (eds) Emergent Converging Technologies and Biomedical Systems. ETBS 2023. Lecture Notes in Electrical Engineering, vol 1116. Springer, Singapore. https://doi.org/10.1007/978-981-99-8646-0_2
2. Iyappan, K., Teraiya, O.M., Kalaiarasi, K., **Swathi, S.**, Sharda, P., Anand, M.C.J. (2024). Fuzzy Inventory Grinding Production Process Optimization for Rotor Manufacturing Using Python and MATLAB. In: Kahraman, C., Cevik Onar, S., Cebi, S., Oztaysi, B., Tolga, A.C., Ucal Sari, I. (eds) Intelligent and Fuzzy Systems. INFUS 2024. Lecture Notes in Networks and Systems, vol 1089. Springer, Cham. https://doi.org/10.1007/978-3-031-67195-1_51

NATIONAL PUBLICATIONS

1. Kalaiaarasi. K., **Swathi. S.** (2024) Fuzzy Inventory Mathematical Models Enhanced by Machine Learning: Revolutionizing Inventory Management. *Fuzzy EOQ model optimization analysis utilizing MATLAB, Python and Weka*, ISBN:978-81-19587-28-5, Ryan Publishers.
2. Kalaiaarasi, K., & **Swathi, S.** (2023) Neutrosophic Inventory Model with Quick Return for Damaged Materials and Python-Analysis. *Neutrosophic Super Hyperalgebra and New Types of Topologies*, 219.

Diploma courses completed

DCA

Diploma in Computer Applications - POS in Tally - A grade - 2019

DMO

Diploma in Microsoft Office - A grade - 2012

Certificate courses completed

MATLAB - A grade – (2018 – 2019)

SCILAB - B grade – (2016 – 2017)

CONFERENCES/SEMINARS/WORKSHOPS ATTENDED:

1. Presented a paper entitled “Technological Innovations in Education System”, organized by Cauvery College for Women (Autonomous), Institutions Innovation Council jointly with CSIR-IMMT on 24th & 25th February 2022.
2. Presented a paper entitled “A trade credit policy for indebted consumers of compliant carbon emissions based on the optimization of a fuzzy inventory model with machine learning”, organized by Bishop Heber College (Autonomous), Heber International Conference on Applied Mathematics, Management, Computer Science and Statistics (HICAMMCS) on 18th March 2022.
3. Presented a paper entitled “A trade credit policy for indebted consumers of compliant carbon emissions based on the optimization of a fuzzy inventory model”, organized by School of Arts, Sciences, Humanities & Education (SASHE), SASTRA Deemed to be University, Thanjavur, National Conference on Recent Developments in Fractional Calculus and Its Applications (RDFCA-2022) on November 18-19, 2022.
4. Presented a paper entitled “MATLAB and Python Comparison of a Fuzzy Inventory Model with Time-Dependent Demand and Partial Surplus for Deteriorating Items”, organized by J.J College of Arts and Science (Autonomous), International Conference on Applied Mathematical Sciences- ICAMS2022, Pudukkottai on 21th December and 22nd December 2022
5. Presented a paper entitled “MATLAB And Python Comparison of a Fuzzy Inventory Model with Time-Dependent Demand and Partial Surplus for Deteriorating Items-ML

Approach”, organized by Bharathidasan University, Tiruchirappalli, XLVI Indian Social Science Congress on 27th to 31st January 2023

6. Presented a paper entitled “Neutrosophic inventory model with Quick return for damaged materials and Python – Analysis”, organized by St. Martin’s Engineering college, Secunderabad on 18th and 19th August 2023.

7. Presented a paper entitled “Revolutionizing supply chain inventory management: A synergistic approach with Ant colony optimization, Machine learning, and Fuzzy logic Integration”, organized by Idhaya college for Women, Kumbakonam on 6th March 2024.

8. Presented a paper entitled “Optimization of Fuzzy Vendor Buyer EOQ Model in Neutrosophic Fuzzy Number by ML Applications”, organized by Cauvery College for Women (Autonomous), Institutions Innovation Council jointly with CSIR-IMMT on 18th & 19th February 2025.

9. Presented a paper entitled “Optimization of Fuzzy Inventory model by ML Applications”, organized by Vivekanandha Arts & Science College for Women – Sankagiri Campus, *International Conference on “RECENT TRENDS IN GRAPH THEORY & NANO MATERIALS- [ICRTGTNM - 2k25]”* were held on 10.10.2025.

Workshop Attended

1. Attended the One Day national level workshop on “AN INVITATION TO REAL ANALYSIS” on 20.10.2022 at Kongunadu College of Engineering and Technology(A), Tiruchirappalli.

FDP Attended

1. Attended Five-Days Online International Faculty Development Programme “*Recent Developments in Advanced Science and Technology*” (RDAST - 2025) organized by K.S.R College of Arts and Science for Women, Tiruchengode, Namakkal (DT) on Nov 2025

2. Attended an AICTE Training and Learning (ATAL) Academy Faculty Development Program “*The Future of Healthcare: AI- Infused Med-Tech*”, Innovations at School of arts and science, Vinayaka Mission's Research Foundation (deemed to be university), Chennai on Nov 2025

3. Attended a One-week International Faculty Development Program “*Innovative Applications of Mathematics*” organized by Babadla Engineering College, Andhra Pradesh on Nov 2025.

4. Attended a One – day National level seminar on “*Recent trends in Mathematical Research*” organized by Jamal Mohamed College, Tiruchirappalli on 12th August 2026.

5. Attended FDP on “*Artificial Intelligence for Mathematics Education, Teaching, Research and Assessment*” organized by Sri Ramakrishna Institute of Technology, Tiruchirappalli on 04.08.2026 – 08.08.2026.