

FACULTY PROFILE

1. Name : Dr. G. Aruna
2. Designation : Assistant Professor, PG and Research
Department of Mathematics, Auxilium
College (Autonomous),
3. Qualification : M.Sc., M.Phil., Ph.D.,
4. Mobile number : 8807576186
5. E-mail id : arunamaths2@auxiliumcollege.edu.in
6. Teaching Experience : 10 years
7. Area of specialization : Complex Analysis, Fuzzy set theory
8. Positions Held in Auxilium :

- Dean of Science (2024- till date)
- Member in Examination committee (2024- till date)
- Rotaract Club of Auxilium College – In charge (2024 - 2025)
- Health and Fine Arts Club – In charge (2017- 2024)
- Value Added Course - Instructor (2022- 2024)
- NIRF In-charge (2023 – 2024)
- Website In-charge (2022 – till date)
- Mentor for UG students (2015- 2023)
- Mentor for PG students (2015- till date)
- AQAR – In charge (2018-2019 & 2021-2022)
- Log Book In-charge (2022- till date)
- ERP In-charge (2021- 2023)
- Extension In-charge (2015- 2020)

9. Research Experience : 4 years
10. No. of Papers Published : 11
11. No. of Papers Presented in the National/ International/ Seminars/ Workshops/ Conferences: 9
12. No. of Seminars/Workshops/Conferences participated: 60
13. No. of Seminars/Workshops/Conferences organized: 23
14. Membership in professional bodies (Descriptive):
- A life time member in Academia for Advanced Research in Mathematics Society (AARM) (Reg. No. SRG/Vellore/96/2019)
15. Other bodies (Descriptive):
- NSF - International Eco Club Student Chapter (IECSC)
16. No. of Online Courses completed (Minimum of 4 Weeks): 3
17. Any Other (Descriptive):
- Nearly 25 PG students finished their project relevant to their interested area under my guidance.
 - **Computer knowledge:** C, C++, Java, LATEX, MATLAB and SCILAB
 - **Technical knowledge:** Completed Junior Grade in Typewriting [English]
 - Completed B.A. in Hindi

PUBLICATIONS

- Aruna G., Jesintha Rosline J., ‘Prism fuzzy number and its applications’, In AIP Conference Proceedings, AIP Publishing, August 2023- Volume 2852, Issue 1.
- G. Aruna, J. Jesintha Rosline,” Properties of Quadrasophic Fuzzy Set and its applications”, Reliability: Theory & Applications, December 2023, Volume 18,No. 4 (76), pp. 208 - 220, ISSN No.:1932-2321.
- G. Aruna, J. Jesintha Rosline, “Neutral-Bipolar Fuzzy Sets and Its Applications”, Trends in Mathematics, 1 March, 2024, Volume 2, pp. 557-568, E. ISSN: (2297-024X), Print ISSN No.:2297-0215.

- G. Aruna, J. Jesintha Rosline, “Quadrastrophic Fuzzy Matrix and its applications”, *Reliability: Theory & Applications*, December 2024, Volume 19, No. 4 (80), pp. 120 - 131, ISSN No.:1932-2321.
- G. Aruna, J. Jesintha Rosline, “A Dissimilarity Relational Bipolar Operator For Evaluating Obesity-Induced Diseases in Bipolar Fuzzy Environment”, *Arthshastra, Indian Journal of Economics and Research*, Volume 13, Issue 4, June- August 2024, 326-332.
- G. Aruna, J. Jesintha Rosline, Maria Singaraj, Mohammad Rezam Farahani, Mehdialaeiyan, Murat Cancan, “Integrating Fuzzy Numbers In Analyzing Students Decisions On Higher Education And Employment”, *Journal of Combinatorial Mathematics and Combinatorial Computing*, Volume 124, pp. 277 - 290, ISSN: No.:0835-3026(Print), E-ISSN: 2817-576X, March, 2025.
- G. Aruna, J. Jesintha Rosline, “Exploring Quadrastrophic Fuzzy Set: Applications in Assessing Stress levels and Self-Esteem connections”, *Reliability: Theory & Applications*, Volume 21, No. 1 (82), pp. 700 - 220, ISSN: No.:1932-2321, March 2025.
- A. Anthoni Amali, J. Jesintha Rosline, G. Aruna, “Alternate Quadra- Submerging Polar fuzzy Graph and its Decision Making Analysis”, *Reliability: Theory & Applications*, Volume 20, No. 1 (82), pp. 157 -171, ISSN: No.:1932-2321, March 2025.
- G. Aruna, J. Jesintha Rosline, “Advancing MCDM Solutions with Prism Intuitionistic Fuzzy Numbers”, *Lecture Notes in Networks and Systems (LNNS, volume 1528)*.
- Aruna G., Jesintha Rosline J., “A Comparative Study of MCDM Approaches: Exploring the Influence of Additional Parameters in Mathematics”, *Optimality*, 2(3), 2025, pp. 177-192. August <https://doi.org/10.22105/opt.v2i3.88>
- Aruna G., Jesintha Rosline J., A Statistical Exploration of the effects of Additional Parameters In Mathematics, *Reliability: Theory & Applications*, Volume 20, No. 4 (89), 2025, pp. 277 - 284, ISSN: No.:1932-2321.

Presentations:

- “Prism Fuzzy Number And Its Applications”, International Conference on “Mathematical Techniques and Applications (e-ICMTA- 2022)”, Department of Mathematics, SRM Institute of Science and Technology, Kattankulathur, Tamil Nadu, March 23 - 25, 2022.
- “Neutral - bipolar Fuzzy sets and its applications”, International Conference on Recent Developments in Mathematics(ICRDM 2022), Faculty of engineering , Applied Science and Technology, Canadian University Dubai, Dubai UAE in conjunction with the Department of Mathematical sciences, United Arab Emirates University, Al Ain, UAE. August 24 - 26 , 2022
- “Properties of Prism Fuzzy Number And Its Applications”, State level Intercollegiate Paper Presentation, Committee for Research Ethics, Publication & IPR, Auxilium College (Autonomous), Vellore, Tamil Nadu, October 20, 2022.
- “Prism Intuitionistic Fuzzy Number and its applications”, International Conference on “Mathematical Sciences and Applications” (ICMA 23), PG and Research Department of Mathematics, Sacred Heart College (Autonomous), Tirupattur, Tamil Nadu, March 24 – 25, 2023.
- “The Application of Bipolar Fuzzy Matrix in the Diagnosis of Diabetes”, International Conference on Mathematical Sciences and Applications (ICMA 24), PG and Research Department of Mathematics, Sacred Heart College (Autonomous), Tirupattur, Tamil Nadu, February 15-16 2024.
- “Induced fuzzy cognitive map and its application: Analysing symptoms of lung cancer”, National Conference on Advances in Applied Mathematics & IKS, PG and Research Department of Mathematics, Mannar Thirumalai Naicker College (Autonomous), Pasumalai, Madurai, February 28, 2025.
- “A comparative Study of MCDM approaches: Exploring the Influence of Additional Parameters in Mathematics”, The First International society of Fuzzy Sets Extensions and Applications Conference (ISFSEA 2025), May 05 – 06, 2025.
- “Advancing MCDM Solutions with Prism Intuitionistic Fuzzy Numbers” , International Conference on Intelligent and Fuzzy systems, Istanbul Technical University and Yildiz Technical University, Istanbul, Turkiye, 29-31July, 2025.

Online course:

- “Introduction to Programming with MATLAB” an online non-credit course authorized by Vanderbilt University – Coursera - 9 weeks – 2018.
- “Fuzzy sets, Logic and Systems & Applications” NPTEL Online Certification funded by MoE, Govt. of India - 12 weeks (3 Credits) - (Jan –Apr) 2022.
- “Approximate Reasoning using Fuzzy Set theory” NPTEL Online Certification funded by MoE, Govt. of India - 12 weeks (3 Credits) - (Jul - Aug) 2022.

Patent:

- Quantum computing based method for solving NP Hard problems in Mathematics and Computer science

FDP's/ Seminars/ Workshops/Webinars:**Offline Programmes:**

- Workshop on “Research methodology and Ethics”- conducted by the Centre of Research, Thiruvalluvar University, Serkkadu – on July 22nd, 2023.
- A National Seminar on “Emerging Trends in applied Mathematics ETAM - 2023”- conducted by Department of Mathematics, Auxilium College (Autonomous), Vellore – on September 1st, 2023.
- Young Student Scientist Programme (YSSP -2023), Auxilium College (Autonomous), Vellore, December 24, 2023 – January 1, 2024.
- State Level workshop: Hands on training on MATLAB- PG and Research Department of Mathematics, Auxilium College (Autonomous), Vellore, February 12, 2024.
- FDP in “Idea Generation Methods”, ICT Academy, August 05 - 07, 2024.

- International conference on “Youth for Earth: Restore and Protect our Environment”, Enviro club in collaboration with Tamil Nadu Pollution Control Board, Vellore, October 10, 2024.
- National conference on “Mathematical Analysis and Applications (NCMAA 2025), Voorhees College, Vellore, March 21, 2025.
- Capacity Building Programme on “Personalizing Education: Assessing Learner Types in Higher Education”, Auxilium College (Autonomous), Vellore, August 26, 2025.
- Capacity Building Programme on “Systemic Sequelae of Stress”, Auxilium College (Autonomous), Vellore, October 22, 2025.

Online Programmes:

- Online workshop on “Basic Statistical Analysis and its interpretation using SPSS”- conducted by Global Institute of Statistical solutions (GISS) – during January 7th - 9th, 2023.
- National webinar on the topic “Green Campus Initiatives towards Sustainable Development”- conducted by The Internal Quality Assurance Cell (IQAC), Auxilium College (Autonomous)- on July 29th, 2023.
- National webinar on the topic “Publish and Progress” – conducted by The Internal Quality Assurance Cell (IQAC), Committee for Research Ethics, Publication and IPR & Library, Auxilium College (Autonomous) - August 26th, 2023.
- FDP on “Unveiling Emerging Research Trends in Mathematics”, RM Madurai College for Engineering and Technology, Sivagangai, August 20 – 21, 2024.
- National Level Five Day Virtual FDP on “SEPT@360- Skill enhancement Program for Teachers”, IQAC of Stella Matutina college of Education, Chennai (SMCE) & Sri Vidhya College of Arts and Science, Virudhunagar (SVCAS), September 02- 06, 2024.
- Workshop on “Graph Theory”, Sridharacharya Academy of Mathematical Sciences (SAAMS) Midnapore, West Bengal, India, September 22, 2024.
- Five-Day Online Faculty Development Programme on “Research in Mathematics”, PG and Research Department of Mathematics, Sacred Heart College (Autonomous),

Tirupattur District in collaboration with the PG Department of Mathematics, Patrician College of Arts & Science, Chennai, November 18 – 22, 2024.

- A Five-Day Faculty Development Programme on the topic, “Mathematical foundations of Artificial Intelligence and Machine Learning”, PG and Research Department of Mathematics, Sacred Heart College (Autonomous), Tirupattur in collaboration with Mathematics Division, Department of Science & Humanities, Jerusalem College of Engineering (Autonomous), Chennai, during February, 03 - 07, 2025.
- One Day National Webinar on “Mathematical Modelling and application”, The Department of Mathematics & Internal Quality Assurance Cell (IQAC), VKV government Degree College, Kothapeta, Andhra Pradesh, February 20, 2025.
- Five Days Faculty Development Programme on the topic,” Transforming Higher Education: Faculty Development Programme on Institutional Autonomy and NEP 2020 Implementation”, the IQAC unit, Mazharul Uloom College (Autonomous), Vellore, May 10-15, 2025.
- A Five Day International FDP on “Innovative Application of Mathematics and Real world challenges” organized by the Department of Mathematics, New Prince Shri Bhavani college of Engineering and Technology, Chennai, August 15-19, 2025.
- A Seven Day International Faculty Development Workshop on “Indhiya Arivu Sar Marabhum Tamizh Valamum (IKS)” , Auxilium College (Autonomous), Vellore , September 22- 28, 2025
- A Seven- Day Online Faculty Development Programme on “Empowering Research Integrity & Innovation” organized by The Committee for Research Ethics, Publication & IPR, Auxilium College(Autonomous), Vellore , October 27-November 2, 2025.