Name of Faculty	Dr. Matam Santoshi Kumari	
Designation	Assistant Professor	
Nature of Job/Appointment	Contract	
Date of Joining	17-04-2023	
E-mail	santoshikumari_maths@cbit.ac.in	

Education Qualifications	Name of the Degree	Class
Ph. D	Doctor of Philosophy (Mathematics), VTU, Karnataka.	Awarded
SET	TS-SET, Karnataka SET	Qualified
PG	M.Sc. (Pure Mathematics)	Distinction
UG	B.Sc (MPC)	Distinction

Work Experience

Teaching	12 Years
Research	06 years
Industry	--
Others	

Area of Specialization	Numerical methods, Quantum Computing, Quantum Machine Learning, Quantum Cryptography.
Professional Memberships	Member of IFERP- 11708224
Responsibilities held at Institution Level	1. Member of Finance Committee, Sudhee and Shruthi, CBIT. 2. Worked as, Member of BOS, SMEC, Hyderabad 2022 3. Worked as R&D Coordinator, SMEC, Hyderabad, 2022-2023 4. Worked as, SIP Induction Program Coordinator, DBIT, Bangalore -2021.
Responsibilities held at Department Level	1. Course Coordinator for Fundamentals of Quantum Computing and Quantum Machine Learning, CBIT, Since 2023. 2. Member of CEG. 3. Member of the Board of Studies, contributing to curriculum design and academic revisions. 4. Served as Class In-charge for first year Students at CBIT. 5. Mentor for the First-Year SIP Induction Program at CBIT.

Awards Received	1. Received Second Proficiency Prize in Bachelor's degree from St. Francis College for women, Hyderabad. 2. Received Second Proficiency Prize in Master's degree from St. Francis College for women, Hyderabad. 3. Best Poster Presentation Award on 7th Research Day, Dec 2025 at CBIT, Hyderabad.
Courses Handled at Under Graduate / Post Graduate Level.	Ordinary and Partial differential equations, Integral Equations, Real Analysis, Linear Algebra, Calculus of Variation, Topology, Numerical methods, Complex Analysis, Operational Research, Fourier series and Fourier transforms, Vector Calculus, Probability and Statistics, Fundamentals of Quantum Computing and Quantum Computing for Machine Learning.
No. of Papers Published	National Journals – 00 International Journals – 9 National Conference – 01 International Conference – 9
Projects Carried out	In house Major seed grant of Rs. 1.7 Lakhs funded project at CBIT, Hyderabad, India **Title:** A Hybrid Quantum Convolutional Neural Network for Skin Lesion Classification
Patents	--
Technology Transfer	--
Invited Speaker	Delivered an invited talk titled *'Quantum Computing for Speech Processing'* as part of the Two-Week Winter School on *Computer Vision and Speech Processing* at Chaitanya Bharathi Institute of Technology (CBIT) on 18 December 2024.
No. of Books/Chapter Published with details	1. Fuzzy Decision Model for Selecting Core Factors in Vehicular Network Communications, Networking, Transport, and Quality of Service in Vehicular Networks, IGI global scientific publishing, DOI: 10.4018/979-8-3693-6422-2, ISBN: 9798369364222, page: 113-130, March 2025. 2. Ordinary Differential Equations and Vector Calculus, M/s Sun Techno Publications, ISBN: 978-81-945268-9- 6, February-2023.
Details of Short-Term Training Programs/Faculty Development Programs/Seminars/Workshops. Other Training (**Attended and/or Organized**).	**Organized:** 1. Co-ordinator for IPR awareness program under NIPAM during July 1st 2022 at St. Martin's Organized Online Workshop on "***Writing a Research Proposal***" during 3rd March 2023, at St. Martin's Engineering College, Hyderabad.

2. Co-ordinated in conducting International Conference on **Recent trends in Scienceand Engineering** during 24th- 25th Feb, 2023 at St. Martin's Engineering College, Hyderabad.

3. Coordinator for Faculty Development program on **Research Pedagogy and Contemporary research** during June 23rd- 25th, 2022 at St. Martin's Engineering College, Hyderabad.

4. Coordinator for two-days International conference on **ICCIASH** during 16- 17th September, 2022 at St. Martin's Engineering College, Hyderabad.

5. Coordinator for one day webinar on **COVID Do's and Don'ts** in Don Bosco Instituteof Technology, Bangalore during June, 2022.

6. Coordinator for one week **Student Induction Program** in DBIT, Bangalore during May, 2022.

Attended:

7. State Level seminar on "***Impact of Mankind on Environment***" held during 25th and 26thAugust at B.M.S. College for Women, Bangalore.

8. National Conference on "***An Insight into Analysis and Applications of Mathematics***" held during 24th August, 2016 at National College, Jayanagar, Bangalore.

9. Open Lecture Series on "***Recent advances in Science and Technology: Mathematica***" held during 19th September 2016, Organized by department of Mathematics, MES College, Bangalore.

10. Three day workshop on "***Research Methodology and Latex***" Conducted byVTU at RRCE, Bangalore from 20th to 22nd December 2017.

11. Workshop on "***Analysis and Linear Algebra***" from 6th to 7th January 2017 atNational College, Bangalore.

12. Five day workshop on, "***Advanced Numerical Techniques for Engineers and Researchers***" held during 23rd to 28th January 2017 at B.M.S. College of Engineering Bangalore.

13. Two day workshop on "***Role of Statistics in Scientific Research***" Organized by Karnataka Science and Technology Academy, DST, GOK, Bangalore held during 04- 05th January 2018.

14. Five day International FDP on, "***Recent trends in Applied Mathematics***", during July 2020 Organized by SNS College of Technology, Coimbatore.

15. Attended One week short term course on "***Differential Equations: solution Techniques and Applications***" at IIT Guwahati during September 7-12, 2020.

16. Attended the International Conference on, "***Differential equations and Numerical Analysis***", Organized by department of Mathematics, Indian Institute of Technology Guwahati, India from 2-15th October 2020.

17. Attended "***Two Day Online Workshop on LaTeX***" Organized by School of Advanced Sciences, Vellore

Institute of Technology from 27-28Th May 2021.

18. Attended One week National level FDP on "*Number Theory and its Applications*" Organized by department of H&S, Gates Institute of Technology, Gooty, Anantapur, AP, India from 14th to 19th June, 2021.

19. Attended two weeks International FDP on "*The Art of doing Research*" organized by Jyothi Engineering College, Trissur, India during 12-22 July, 2021.

20. On line Short term Training Programme on "*Role of Statistics in Machine Learning and Data Science*" Organized BY UGC-HRDC, JNTUH, Hyderabad during 29 November 2021- 4th December 2021.

21. Attended one week AICTE-VTU Joint Teachers Training Programme on "*An overview of Teaching Techniques in Data Science and Analytics*" between 25th and 29th April 2022 Organized by VTU HRDC, Chikkaballapur, Karnataka.

22. Attended 5-Day Workshop on "*Statistical Analysis using Python*" held at VNRVJIET, Hyderabad, Telangana, India during 6-11th March 2023, Organized by the Dept.of H &S, CSE.

23. Attended 5-Day Workshop on "*Mathematics & its Applications*" held at Madanapalle Institute of Technology, Andhra Pradesh, India during 5-9th June 2023.

24. Attended one week Online FDP on "*Mathematics and its Applications in Technology & Science*" organized by Madanapalle Institute of Technology & Science, Madanapalle, India during 5th- 9th June, 2023.

25. Online one week FDP on "*Quality Education through OBE*" organized by Chaitanya Bharathi Institute of Technology, Hyderabad, India. In association with IEEE Educational Society student branch chapter, CBIT during 22nd-27th January, 2024.

26. Online one week International short term Training Program (STTP) on, "*Comprehensive Cyber Security and Ethical Hacking from Fundamental to Advanced Techniques*", held from 4th March to 9th March 2024, organized by Department of CET, Chaitanya Bharathi Institute of Technology, Hyderabad, India.

27. Online one week Faculty development programme on "*Quantum Computing Building a Rapid and Secure Information Tomorrow*" held in June, 2024, organized by Department of CSE, Chaitanya Bharathi Institute of Technology, Hyderabad, India.

28. Attended one Day worshop in "**Quantum Computing foundations and applications**" held on 28th February 2025, Organized by University of Hyderabad, India.

29. Completed six 3-credit FDP courses under the **AICTE Minor Degree Programme in Quantum Technologies**, organized by **MNIT Jaipur** in collaboration with **IIT Roorkee and NIT Warangal** (Feb–Oct 2025).

30. Successfully completed **Qiskit Global Summer School 2025 – Quantum Excellence Track**, organized by **IBM Quantum**.

31. Successfully completed **IBM Quantum certified training programmes in Quantum Computing**, with

practical exposure to quantum circuit design and execution on IBM Quantum platforms.

Details of Journal Publications/ Conferences **(National and International)**

International Journal from the year 2021

1. M. Santoshi Kumari, Samson Anosh Babu, "Quantum steganography-based least significant bit algorithm for confidential data communication," Proceedings of ICAMS-2025, NIT Hamirpur, Springer Proceedings, Accepted January 2025. (SCI indexed)
2. M. Santoshi Kumari, Shrivalli H. Y., Mallikarjuna B., "Natural cubic spline for hyperbolic equations with constant coefficients," Communications in Mathematics and Applications, ESCI, Vol. 16, pp. 127–141, 2025.
    ISSN: 0975-8607, https://doi.org/10.26713/cma.v16i1.2946.
3. M. Santoshi Kumari, Shrivalli H. Y., Mallikarjuna B., "Natural cubic spline for parabolic equations with constant and variable coefficients," International Journal of Engineering and Computer Science, Vol. 14, No. 7, pp. 27508–27530, 2025.
    ISSN: 2319-7242, https://doi.org/10.18535/ijecs.v14i07.5188.
4. M. Santoshi Kumari, "A numerical solution of second-order linear boundary value problems using natural cubic splines," International Journal of Engineering and Computer Science, Vol. 14, No. 11, pp. 27945–27957, November 2025.
    ISSN: 2319-7242, https://doi.org/10.18535/ijecs.v14i11.5313.
5. Madhukar K., M. C. Jayaprakash, M. Santoshi Kumari, H. Y. Shrivalli, K. V. Nagaraja, Raman Kumar, R. Naveen Kumar, "Behavior of suspended natural rubber balls in water at small Reynolds numbers," Modern Physics Letters B, 2024, Article ID: 2450477.
6. Sindhuja N., M. Santoshi Kumari, K. Kalaiarasi, G. J. Manjula, H. Y. Shrivalli, "Energizing inventory management to optimize energy consumption of handling shortages by neutrosophic fuzzy trapezoidal number," International Journal of Neutrosophic Science, Vol. 1, pp. 219–219, 2024.
7. Prabha S. K., M. Clement Joe Anand, V. Vidhya, G. Nagarajan, Utpal Saikia, Nivetha Martin, M. Santoshi Kumari, Mohit Tiwari, "Sorting out interval-valued neutrosophic fuzzy shortest cycle route problem by reduced matrix method," International Journal of Neutrosophic Science, Vol. 2, pp. 91–91, 2024.
8. Mallikarjuna B., M. Santoshi Kumari, Shrivalli H. Y., "Natural cubic spline for singular boundary value problems," Journal of Xidian University, Vol. 16, pp. 562–575, 2022.
    ISSN: 1001-2400, https://doi.org/10.37896/jxu16.5/059.
9. Mallikarjuna B., M. Santoshi Kumari, Shrivalli H. Y., "Natural cubic spline for nonlinear singular boundary value problems," Journal of Xidian University, Vol. 16, pp. 612–623, 2022.

International /National Conferences from the year 2020

1. M. Santoshi Kumari, "Natural Cubic Splines for Singular Boundary Value Problems," International Conference on Differential Equations and Numerical Analysis, IIT Guwahati, October 2020.
2. M. Santoshi Kumari, "Natural Cubic Splines for Nonlinear Boundary Value Problems," International Conference on Mathematical, Physical and Computational Sciences, Aurora's Degree and PG College, Hyderabad, August 2021.
3. M. Santoshi Kumari, "Natural Cubic Splines for Parabolic Equations with Constant and Variable Coefficients," International Conference on Applied Mathematical and Computational Sciences, DIT University, Dehradun, October 2022.
4. M. Santoshi Kumari, "Natural Cubic Splines for the Solution of Hyperbolic Equations with Constant Coefficients," Two-Day National Seminar on Recent Trends in Mathematical Sciences, St. Pious X Degree and PG College, Hyderabad, 26–27 April 2023.
5. M. Santoshi Kumari, "Natural Cubic Splines for Linear and Nonlinear Boundary Value Problems," International Conference on Modelling, Simulation and Optimization of Energy Systems (MSOES 2023), Canadian University, Dubai, UAE, 17–18 July 2023.

6. M. Santoshi Kumari, "Quantum Computing in the Modern Era," 5th Research Day, CBIT, Hyderabad, 18 November 2023.
7. M. Santoshi Kumari, "Improving Breast Cancer Diagnosis with Variational Quantum Classifiers," International Conference on Recent Advances in Mathematical and Data Sciences (ICRAMDS), NIT Bhopal, 28 June 2024.
8. M. Santoshi Kumari, "A Hybrid Quantum Convolutional Neural Network for Skin Lesion Classification," 6th Research Day 2024, CBIT, 13–14 December 2024.
9. M. Santoshi Kumari, "Quantum Steganography-Based Least Significant Bit Algorithm for Confidential Data Communication," International Conference on Advanced Mathematical Sciences (ICAMS), NIT Hamirpur, 7–8 February 2025.
10. M. Santoshi Kumari, "Quantum Convolutional Neural Network for Skin Lesion Classification: A Hybrid Classical–Quantum Approach," 7th Research Day, CBIT, 12–13 December 2025.