

NIRMALA COLLEGE FOR WOMEN (AUTONOMOUS)

COIMBATORE

STAFF PROFILE

NAME : Ms.M.MUTHUMALATHI
DESIGNATION : ASSISTANT PROFESSOR
DEPARTMENT : COMPUTER APPLICATIONS
QUALIFICATION : M.Sc(CS),, M.Phil.,
EXPERIENCE : 6 Years
AREAS OF SPECIALIZATION : WIRELESS COMMUNICATIONS &
WIRELESS SENSOR NETWORKS.
E-MAIL : muthumalathi3004@gmail.com

ACADEMIC QUALIFICATIONS :

| DEGREE | YEAR OF COMPLETION | NAME OF THE INSTITUTION | CLASS |
|-----------|--------------------|---------------------------|------------------------------|
| M.Phil | 2018 | Bharathiar University | First Class |
| M.Sc (CS) | 2017 | Nirmala College for Women | First Class with Distinction |
| BCA | 2015 | Nirmala College for Women | First Class |

RESEARCH PUBLICATIONS:

INTERNATIONAL:

- [1] A Q-Learning Based Approach in Clock Synchronization in Wireless Sensor Networks, Int. J. of Systems, Control and Communication (Scopus), 2025.
- [2] A Network-Based Approach for Clock Synchronization in Wireless Sensor Networks, 2025, IEEE Digital Library (Scopus), 2026.
- [3] Exploring the IoT and AI Technologies in Energy-Efficient Sustainable Agriculture, Secure Energy Optimization: Leveraging IoT and AI for Enhanced Efficiency, Wiley, 2025.
- [4] Towards 6G technologies: Insight into architecture, communication, AI applications and use cases, Advances in Computers, Elsevier Volume 139, 2025,
- [5] AI-Driven Hybrid IoT Architectures for Smart Agriculture: Design, Challenges, and Sustainable Applications” under the key topic “Applications and Emerging Directions”,

and the subtopic “AI for IoT, Industrial Automation, and Smart Infrastructure”, for the book “Artificial Intelligence Empowered Next-Generation Wireless Communication Networks, 2025.

- [6] Deep Learning-Based Predictive Models for Energy Efficient Clock Synchronization in Wireless Sensor Networks: A Survey, International Journal of Scientific Research in Computing, Volume 7, Issue 1, 2025.
- [7] Comparative Study of Energy Efficient Clustering and Routing Based Optimization and Localization Techniques in Wireless Sensor Networks, International Journal of Scientific Research in Computing, Volume 4, Issue 2, 2022.
- [8] A Comparative Analysis of Various Time Synchronization Protocols in Wireless Sensor Networks, International Journal of Engineering Research in Computer Science and Engineering (IJERCSE), Vol 9, Issue 11, 2022.
- [9] Topology Control using Cluster based Routing Techniques in Wireless Sensor Networks – a Survey, GIS science journal (UGC CARE GROUP – II), Volume 8, Issue 2, 2021.
- [10] Review on Information Telemetry System for Industrial Application in Wireless Sensor Networks, The International Journal of Analytical and Experimental Model Analysis, Volume 11, issue 10, 2019.
- [11] Efficient Clock Synchronization using Energy based Proportional Integral and Least Common Multiple Protocol in Wireless Sensor Networks, Journal of Engineering Science and Technology Review (Scopus), Volume 12, Issue4, 2019.
- [12] Mobility – Zonal Based Stable Election Routing Protocol for Wireless Sensor Networks, IPASJ International Journal of Computer Science (IJCS), Volume 6, Issue 10, 2018.
- [13] Survey on Clock Synchronization in Wireless Sensor Networks, International Conference on Research Trends in Computing Technologies, ICRTCT- N- 23, ISBN: 978-93-87862-01-2, 2018.

PRESENTATIONS IN CONFERENCE:

INTERNATIONAL:

- [1] A Comparative Study Analysis of Clock Synchronization in WSNs based on Quantum Approaches, Department of Computer Science, Bharathiar University, 29.01.2026 and 30.01.2026.
- [2] A Network-Based Approach for Clock Synchronization in Wireless Sensor Networks, 2025 Innovations in Power and Advanced Computing Technologies (i-PACT), Surabaya, Indonesia, September 2025. DOI: 10.1109/i-PACT65952.2025.11308048.

- [3] Average Partial Time Synchronization: A Consensus-Based Time Synchronization Protocol for WSNs, 2025 International Conference on Signal Processing, Computation, Electronics, Power and Telecommunication (IconSCEPT 2025).
- [4] Thirukuralin Kalvi Sinthanaikal, Department of Tamil and Ulaga Thirukural Maiyam, Nirmala College for Women, Coimbatore, 25.01.2025.
- [5] Deep Learning-Based Predictive Models for Energy Efficient Clock Synchronization in Wireless Sensor Networks: A Survey, Department of Computer Science, Bharathiar University, 26.09.2024 and 27.09.2024.
- [6] A Review of Data Aggregation Methods and Protocols based on Energy Management in Wireless Sensor Networks, International Conference on Advanced Computing (ICAC-2023), 02.05.2023 and 03.05.2023.

NATIONAL:

- [1] Third national conference on advanced computing (NCAC -2020) on 23.01.2020 & 24.01.2020 in Bharathiar University, Coimbatore – 46.

PARTICIPATION IN CONFERENCES:

- [1] International Conference on Mathematics & Computer Science on 15.12.2016 to 17.12.2016 in Nirmala college for women, Coimbatore -16.

PARTICIPATION IN SEMINARS:

- [1] Online Seminar on Role of AI in IoT and Semiconductor Technologies, Department of Electronics and Computer Engineering of VPM's Maharshi Parshuram College of Engineering, Velneshwar. 23.09.2024.
- [2] Lecture Series on Students Engagement through Effective Teaching and Learning, The Internal Quality Assurance Cell, Dr.M.G.R. Educational and Research Institute. 27.06.2024.
- [3] Entrepreneurship and Innovations as Career Opportunities, Department of Computer Applications, Nirmala College for Women, Coimbatore. 31.10.2023.
- [4] Digital Age Pedagogy, The Internal Quality Assurance Cell, Nirmala College for Women. 16.06.2023.
- [5] International Seminar on the Topic: How to Plan for Start-Up and Legal & Ethical Step, Department of Computer Applications, Nirmala College for Women, Coimbatore. 24.05.2023.
- [6] Impact of Research During Pandemic on 14.09.2021 & 15.09.2021 in Kaypeeyes College of Arts and Science.

- [7] Research for Academic Excellence on 22.07.2021 & 23.07.2021 in SRM Institute of Science and Technology.
- [8] Innovative Teaching Practices in Higher Education on 11.06.2021 in TMM College of Arts & Science, Kulathur, Tuticorin.
- [9] Research Finding Project & IPR (Part III) on 07.06.2021 to 09.06.2021 in R & D Cell, IQAC and Department of EXTC, Computers & IT, K. C. College of Engineering & Management Studies & Research, Thane (E).
- [10] Landscapes in Research Language and Literature on 01.06.2021 to 03.06.2021 in Dr.M.G.R Educational and Research Institute.
- [11] IoT for Agricultural Applications on 22.10.2020 to 24.10.2020 in P. R. Patil College of Engineering & Management, Amaravathi in association with IEEE (Mumbai Section) & Pantech E Learning.
- [12] Industry 4.0 Technology for Non-Computing Disciplines on 22.07.2020 to 24.07.2020 in Department of Computer Science, Bharathiar University, Coimbatore – 641046.
- [13] Creativity with Passion Leads to Success on 20.06.2020 in National Service Scheme (Units 132, 136), G.T.N. Arts College (Autonomous), Dindigul.
- [14] Nanostructured Metal Oxide Thin Films for Sensor Technology on 16.06.2020 in Department of Physics, Saveetha Engineering College, affiliated to Anna University, approved by AICTE.
- [15] Research Gateway on 15.05.2020 in Annai College of Arts and Science, Tiruchirappalli.
- [16] The Industry 4.0 – The New Normal on 01.05.2020 in VET Institute of Arts and Science, Bangalore.
- [17] Research and Teaching Aptitude on 29.04.2020 & 30.04.2020 in Annai College of Arts and Science, Tiruchirappalli.
- [18] Innovative Eco-System, Incubation Centres and Start-Ups for Higher Education Institutions on 19.03.2020 in Nirmala College for Women.
- [19] Cyber Security & Ethical Hacking on 11.02.2020 in St. Paul's College of Arts and Science for Women, Coimbatore.
- [20] Future of Mobile Technologies and Artificial Intelligence (SFMTAI'17) on 15.12.2017 in Bharathiar University, Coimbatore – 46.

PARTICIPATION IN WORKSHOPS:

- [1] Emerging Significance of Artificial Intelligence (AI) across Key Technological Domains such as Blockchain, IoT, Cyber Security, Big Data Analytics, Cloud Computing and Robotics, Department of Electronics & Computer Engineering, VPM's Maharshi Parshuram College of Engineering Velneshwar, 1st July to 7th July 2025.

- [2] Tips on Literature Search & Writing Scientific Papers on 24.06.2021 in Research & Development Cell, P. B. Siddhartha College of Arts & Science, Vijayawada.
- [3] Two-Days Online Workshop on Universal Human Values on 10.06.2021 & 11.06.2021 in Department of Humanities & Applied Sciences and M.M.S. Department in association with IQAC of K. C. College of Engineering & Management Studies & Research, Thane (E).
- [4] Writing an Effective Research Paper: Means and Methods using LaTeX on 19.05.2020 in Departments of Computer Science, Information Technology and Computer Applications of Kovai Kalaimagal College of Arts and Science.
- [5] Basics of Data Analytics on 16.05.2020 in Department of Computer Science, Information Technology and Computer Applications of Kovai Kalaimagal College of Arts and Science, Coimbatore.
- [6] Doom in Palm - Hidden Threats of Mobile Usage on 15.05.2020 in Departments of Computer Science, Information Technology and Computer Applications of Kovai Kalaimagal College of Arts and Science.
- [7] Micro & Nanotechnology and its Applications on 14.05.2020 in Department of Physics, G.T.N. Arts College (Autonomous), Dindigul.
- [8] R Programming on 02.05.2020 in Shri Krishnasamy College for Women, Chennai, Tamil Nadu.
- [9] Tensors in Graph Theory on 11.01.2020 in Nirmala College for Women, Coimbatore - 16.
- [10] Statistical Analysis using R (NWSAR-2018) on 06.09.2018 and 17.09.2018 in Bharathiar University, Coimbatore – 46.

**PARTICIPATION IN ORIENTATION PROGRAMME/ INDUCTION PROGRAMME/
SHORT TERM COURSES:**

- [1] Virtual Reality in Coursera
- [2] Data Scientist's Toolbox in Coursera
- [3] Software Architecture for the Internet of Things in Coursera
- [4] Real Time Operating System in Swayam
- [5] Microsoft Project in Master of Project Academy
- [6] Ethical Hacker in Master of Project Academy
- [7] Computer Network in Europe Academy

PARTICIPATION IN FACULTY DEVELOPMENT PROGRAMMES:

- [1] Block Chain and Digital Transformation, Digital South and hosted by Nirmala College for Women, Coimbatore, 14.11.2025 to 20.11.2025.
- [2] Emerging Trends and Challenge in Cyber Security, Department of Computer Science and Engineering, Guru Nanak Institute of Technology, 10.11.2025 to 15.11.2025.
- [3] Futuristic Pathways in Technology & Computational Methodologies, Department of Computer Science, Mary Matha College of Arts and Science (Co-Ed), Theni. 06.01.2025 to 11.01.2025.
- [4] A Five-Day National Level Online FDP on Beyond Boundaries: Driving Innovation in Research Committee for Research Ethics, Publication & IPR, Auxilium College (Autonomous), Gandhi Nagar, Vellore in Collaboration with North East Institute of Social Sciences & Research, Dimapur, Nagaland. 26.12.2024 to 30.12.2024.
- [5] Learning Outcome Based Curriculum Framework in the Context of NEP, IQAC, Nirmala College for Women, Coimbatore. 04.12.2024.
- [6] Steps to write persuasive project proposal, The Internal Quality Assurance Cell, Dr.M.G.R. Educational and Research Institute. 27.11.2024.
- [7] One Week National Level Faculty Development Programme on Recent Advancements in AI & IoT – Industry Perspective, Department of Computer Applications, Periyar Maniammai Institute of Science and Technology (PMIST). 25.11.2024 to 30.11.2024.
- [8] Python Programming for Data Analysis, Electronics and ICT Academy, C-DAC Hyderabad. 20.11.2024 to 24.11.2024.
- [9] Python Programming for Data Analysis, Electronics & ICT Academy. 20.11.2024 to 24.11.2024.
- [10] Deep Learning-Based Predictive Models for Energy Efficient Clock Synchronization in Wireless Sensor Networks: A Survey, Department of Computer Science, Bharathiar University. 26.09.2024 & 27.09.2024.
- [11] Deep Learning Techniques for Social Media Analytics, Kongu Engineering College (Autonomous), Perundhurai, Tamilnadu. 15.04.2024 to 20.04.2024.
- [12] Fortifying Digital Fortresses: Navigating the Current Landscape of Cyber Security, The School of Computer Science and Engineering and Information Science. 09.12.2023.
- [13] Faculty Development Programme - Workshop on Data Analytics, Nirmala College for Women, Coimbatore. 07.10.2023.
- [14] Big Data Technologies, FutureSkills Prime. 08.08.2023 to 17.08.2023.
- [15] Education 5.0, Dr.M.G.R. Educational and Research Institute. 15.05.2023 to 19.05.2023.

- [16] Getting Started with Internet of Things, Internet of Things and Machine Learning Platform-Bolt IoT a part of the academia connect program. 11.04.2023.
- [17] Fabricating Powerful Webs using CMS, Department of Computer Science, Computer Applications and Information Technology, Nirmala College for Women. 15.11.2021 to 19.11.2021.
- [18] Silent Sound Technology – Future Advanced Technology (FAT), RS Research Academy, Coimbatore. 25.10.2021.
- [19] How to Publish Research Articles in SCI Journals, Department of Botany, Nirmala College for Women, Coimbatore. 18.10.2021.
- [20] The Fourth Industrial Revolution - Opportunities and Challenges for the Indian Industry, Parvathaneni Brahmayya Siddhartha College of Arts and Science. 10.07.2021.
- [21] Internal Quality Assurance Cell (IQAC) under PARAMARSH Scheme, Nirmala College for Women, Coimbatore – 18. 28.06.2021.
- [22] Best Practices and Evolving Benchmarks in Higher Education Institutions, IQAC, Nirmala College for Women, Coimbatore – 18 under PARAMARSH Scheme. 28.06.2021.
- [23] Tips on Literature Search & Writing Scientific Papers, Research & Development Cell, P. B. Siddhartha College of Arts & Science, Vijayawada. 24.06.2021.
- [24] Zero Coding: Data Analytics & Machine Learning for IoT Automation, VIT Vellore Institute of Technology. 21.06.2021 to 25.06.2021.
- [25] Applications of Graphical Methods in Computer Science, Department of Mathematics, Dr.M.G.R Educational and Research Institute, Adayalampattu Phase II Campus, Chennai. 14.06.2021.
- [26] Analyse of Structure and Surface Morphology of Engineering Materials using Various Microscopy Techniques, Department of Physics, Dr.M.G.R Educational and Research Institute. 14.06.2021.
- [27] Natrinai Kurum Eyarkkai Vaalkkai, Department of Tamil, Dr.M.G.R Educational and Research Institute. 12.06.2021.
- [28] Innovation, Intelligence and Intellectual Property Rights (IPR), Department of Human Resource Management, Dr.M.G.R Educational and Research Institute. 09.06.2021 to 11.06.2021.
- [29] Familiarizing Digital Literature to Digital Natives, Department of English, Dr.M.G.R Educational and Research Institute. 08.06.2021.
- [30] Manitha Maanbey Valvin Uyirmutchu, Department of Tamil (SF), Nirmala College for Women, Coimbatore. 07.06.2021.

- [31] Big Data: God of Small Things, Department of Physics, Dr.M.G.R Educational and Research Institute. 06.06.2021.
- [32] Awareness About Startup and Related Ecosystem, Department of Computer Science, Nirmala College for Women, Coimbatore. 02.06.2021.
- [33] Revised NAAC Accreditation Guidelines 2020, Jain University, School of Computer Science and IT. 01.06.2021 to 05.06.2021.
- [34] Innovative Teaching Strategies, Nirmala College for Women, Coimbatore. 30.10.2020.
- [35] Outcome Based Education, Rai University, Ahmedabad, Gujarat – India in Association with Inpods India, Pune. October 2020.
- [36] Nanomaterials - A Multidisciplinary Approach (International), Department of Physics, Saveetha Engineering College, affiliated to Anna University, approved by AICTE. 20.06.2020.
- [37] IoT and Connected Nation, Michael Job College of Arts and Science for Women, Sulur, Coimbatore. 15.06.2020.
- [38] Signals and Systems, Ramco Institute of Technology, Rajapalayam, Virudhunagar. 13.06.2020 to 18.06.2020.
- [39] Two Days Online Training on R-Programming, Department of Mathematics (SF), Nirmala College for Women, Coimbatore. 22.05.2020 & 23.05.2020.
- [40] Internet of Things, Kovai Kalaimagal College of Arts and Science, Coimbatore. 20.05.2020.
- [41] Recent Trends in Color Image Processing, Partician College of Arts and Science. 11.05.2020.
- [42] Recent Trends in Cyber Security, Cauvery College of Women (Autonomous), Trichy. 07.05.2020.
- [43] Robotics Process Automation, Jeppiaar Institute of Technology, Kanchipuram, Tamil Nadu. 04.05.2020 to 06.05.2020.
- [44] R Training, Sri Ramakrishna College of Arts and Science for Women. 04.05.2020.
- [45] Moodle Learning Management System, Sri Ramakrishna College of Arts and Science for Women. 04.05.2020.
- [46] Moodle Learning Management System, Kaypeeyes College of Arts and Science, Kotagiri, Nilgiris. 01.05.2020.
- [47] Moodle Learning Management System, Kaypeeyes College of Arts and Science, Kotagiri, Nilgiris, sponsored by Spoken Tutorial Project, IIT Bombay, MHRD, Govt of India. 29.04.2020 to 01.05.2020.

[48] Business Agility Towards Innovation in IT, SRM Institute of Science and Technology, Ramapuram Campus, Chennai – 89. 28.04.2020.

[49] Java Training, Zeal College of Engineering and Research, Pune, sponsored by National Mission on Education through ICT, MHRD, Govt of India. 13.04.2020.

CONFERENCE/ SEMINAR/ WORKSHOP ORGANIZED:

[1] Organized and coordinated numerous seminars, workshops, and FDPs in Computer Science and research domains (2019–present), covering emerging areas such as Artificial Intelligence, Machine Learning, Deep Learning, Internet of Things (IoT), Data Analytics, Big Data, Cyber Security, Cloud Computing, Blockchain, Data Science, Research Methodology, Intellectual Property Rights (IPR), and Outcome-Based Education.

INVITED SPEAKER/ SESSION CHAIR- CONFERENCE/ SEMINAR/ WORKSHOP:

[1] Mobile App Development

[2] Cyber Security

BOOK PUBLICATIONS:

[1] Think, Build, Present: A Guide to Innovative Projects and Papers, Nirmala College for Women publisher, 9788199379541,2026

[2] IoT Essentials: MCQ Handbook, Self Publication, 9789334217704, 2025.

[3] Foundations of Wireless Sensor Networks: A Comprehensive Guide, Nirmala College for Women Publisher, 9788198387066, 2024.

[4] Cyber Security, Nirmala College for Women publisher, 978- 93-81723-98-2, 2021.

[5] Digital Security, Nirmala College for Women publisher, 978-81-949829-4-4, 2021.

[6] E-Book titled Computer Networking Skills, Amazon Publications, ASIN: B086HP9Q7G, 2020.

MEMBERSHIP IN PROFESSIONAL BODIES:

[1] Membership in IAENG – International Associations of Engineers From 2019 to Till Date