

BIO-DATA



Dr. R. UMAMAHESWARI
ASSOCIATE PROFESSOR/ECE
Date of Joining: 11.06.2025

HIGHLIGHTS

- Number of Journal Publications: 28
- H-Index: 4
- Patents Published: 03
- Patents Granted: 01

PROFESSIONAL LINKS:

- Scopus ID: 27667880600
- Scopus Link: <https://www.scopus.com/authid/detail.uri?authorId=58062228000>
- Google Scholar ID: <https://scholar.google.com/citations?user=tfDBRbAAAAAJ&hl=en>
- Anna University Faculty ID: 4128353 (COE)
- Anna University Faculty ID: 2668531982
- AICTE Faculty ID: 1-3365371663
- Anna University Supervisor ID: 3740009
- LinkedIn: <https://www.linkedin.com/in/umamaheswari-r-577b15136/>

PROFESSIONAL BACKGROUND:

- Teaching Experience till date: 15 Year
- Industrial Experience: 1 Year

AREA OF SPECIALIZATION:

- Reconfigurable Architecture
- VLSI signal Processing
- Image Processing

Ph.Ds. AWARDED WITH DETAILS: NIL

Ph.Ds. GUIDING:

- **Full Time Scholars: 01**
- **Part Time Scholars: Nil**

PATENTS PUBLISHED/GRANTED:**PATENTS PUBLISHED:**

Title: Quantum Computing Enabled Medical Image Reconstruction System, Application Number: 202641098953 A dated 21 August 2026

Title: Self-Contained Portable Solar Power System, Indian Patent Application No. 202541125581, published on 13 February 2026.

Title: Utilizing Machine Learning to Identify Target Objects in the Context of Animals, Application No: 202341076247 dated 08/11/2023

PATENTS GRANTED:

Title: Monolithically Integrated Thin - Film Solar Cell Charger for Electronic Gadgets, Patent number: 2020101896, eight years from 19 August 2020, Certificate of Grant-Innovation Patent, Australian Government.

COURSES CERTIFIED:**NITTTR Course Module**

- Module 1- Orientation towards technical education and curriculum aspects- 8 weeks- Feb'21
- Module 2-Professional ethics and sustainability -8 weeks- Feb'21
- Module 3- Communication skills, modes and knowledge dissemination- 8 weeks- Feb'22

NPTEL Course Certifications

- NPTEL CERTIFIED COURSE on Research Methodology Course during October 2023.
- NPTEL CERTIFIED COURSE on Body Language- Key to Professional Course during July 2019.
- NPTEL CERTIFIED COURSE on Digital Electronics during Digital Circuits July-October 2018.
- NPTEL certified course on Outcome based pedagogic principles for effective teaching during August 2017.
- NPTEL certified course on Educational Leadership during July-September 2017.
- NPTEL certified course on Computer Architecture during January-April 2017.

JOURNAL PUBLICATIONS

- [1] U. Ramalingam, "An interpretable fuzzy reward-based reinforcement learning framework for cost-emission-reliability optimization in smart grids," International Review of Applied Sciences and Engineering, vol. 17, no. 2, pp. 207–217, 2026, doi: 10.1556/1848.2026.01194.
- [2] U. Ramalingam, S. Navaneethan, K.-Y. Chan, and L. Lee, "Energy-efficient FPGA acceleration of reinforcement learning algorithms using high-level synthesis," International Review of Applied Sciences and Engineering, 2026, doi: 10.1556/1848.2026.01404.
- [3] A. J. Albert, U. Ramalingam, A. S. A. Leon, S. P. Selvam, S. Thiagarajan, and A. Kuppusamy, "A comparative study and design investigation: scalable magnitude comparators across technology nodes," International Journal of Informatics and Communication Technology, vol. 15, no. 1, 2026.

- [4] P. Madhumathy, R. Saravanakumar, R. Umamaheswari, A. J. Albert, and D. Devasenapathy, "Optimizing design and manufacturing processes with an effective algorithm using anti-collision enabled robot processor," *International Journal on Interactive Design and Manufacturing*, 2024.
- [5] D. Devasenapathy, P. Madhumathy, R. Umamaheswari, B. K. Pandey, and D. Pandey, "Transmission-efficient grid-based synchronized model for routing in wireless sensor networks using Bayesian compressive sensing," *SN Computer Science*, vol. 5, no. 1, 2024.
- [6] U. R. Umamaheswari, M. Senthil Kumar, L. Karthikeyan, and B. Chidhambararajan, "An intelligent deep neural sentiment classification network," *Intelligent Automation & Soft Computing*, vol. 36, no. 2, Jan. 2023.
- [7] R. Umamaheswari, "Efficient NoC router method in VLSI using packet switching method," *International Journal of Electrical, Electronics and Data Communication*, vol. 11, no. 3, pp. 35–37, 2023.
- [8] R. Umamaheswari, "Analysis of high gain dual loop antenna for Wi-Fi connectivity," *International Journal of Mechanical Engineering*, vol. 7, no. 2, Feb. 2022.
- [9] R. Umamaheswari, A. Prakash, and A. Arunkumar, "Automated accident detection and rescue system," *A Journal of Composition Theory*, vol. 15, no. 4, Apr. 2022.
- [10] R. Umamaheswari, "Cluster method for sensor networks using hybrid cluster algorithm," *Natural Volatiles & Essential Oils*, vol. 8, no. 6, pp. 819–828, Oct. 2021.
- [11] T. Kumar, D. Pandey, and R. Umamaheswari, "Development of an agent-based interactive tutoring system for online teaching in school using Classter," in *Machine Learning and IoT for Intelligent Systems and Smart Applications*. CRC Press, Taylor & Francis, 2021.
- [12] R. Ray, M. Pal, R. Umamaheswari, and I. Banerjee, "Machine learning based microstrip antenna design in wireless communications," in *Machine Learning and IoT for Intelligent Systems and Smart Applications*. CRC Press, Taylor & Francis, 2021.
- [13] R. Umamaheswari, M. Ramya Princess, and K. Sriram Kumar, "Fuzzy approaches for mobile robotics in dynamic environment," *IJSREM*, vol. 5, no. 2, 2021.
- [14] R. Umamaheswari and M. Ramya Princess, "Lattice reduction algorithm for low complexity full diversity MIMO detection," *Sambodhi*, vol. 44, no. 1, pp. 63–72, 2021.
- [15] S. Chitra, T. Isaiyarasi, and R. Umamaheswari, "The study of energy graphs with the given super domination theory," *A Journal of Composition Theory*, vol. 14, no. 3, 2021.
- [16] M. Ramya Princess and R. Umamaheswari, "An advanced ATM machine proposal—contactless cash dispenser," *A Journal of Composition Theory*, vol. 14, no. 4, 2021.
- [17] R. Umamaheswari and K. Sriram Kumar, "Multitasking robot and web application," *Gorteria*, vol. 34, no. 4, 2021.
- [18] R. Umamaheswari and P. Nirmal Kumar, "Improved whale optimized MLP neural network-based learning mechanism for multiuser detection in MIMO," *Journal of Circuits, Systems and Computers*, vol. 29, no. 15, Art. no. 2050239, 2020.
- [19] R. Umamaheswari, S. Chitra, and D. Kavitha, "Reliability analysis and dynamic maintenance model based on fuzzy degradation approach," *Soft Computing*, Oct. 2020.
- [20] R. Umamaheswari, M. Ramya Princess, and P. Nirmal Kumar, "Performance analysis of SISO-OFDM architecture for wireless applications using VLSI technology," *International Journal of Scientific Research & Engineering Trends*, vol. 5, no. 3, May–Jun. 2019.
- [21] R. Umamaheswari and M. Ramya Princess, "Performance analysis of ad-hoc routing protocols," *International Journal of Electronics, Communication & Instrumentation Engineering Research and Development*, Jun. 2019.
- [22] R. Umamaheswari and P. Nirmal Kumar, "An FPGA implementation of FSM-based 2-step interleaver for 3G-LTE turbo codes," *Journal of Computational and Theoretical Nanoscience*, vol. 14, no. 3, pp. 1288–1293, Mar. 2017.
- [23] R. Umamaheswari and C. Divyabharathi, "Needed recursive thinking for an engineer," *Imperial Journal of Interdisciplinary Research*, vol. 3, no. 2, 2017.
- [24] R. Umamaheswari and P. Nirmal Kumar, "Optimized 512-point FFT with effective computational components for WLAN application," *Information—An Interdisciplinary Journal*, vol. 17, no. 6, pp. 2225–2238, Jul. 2014.

- [25] R. Umamaheswari and P. Nirmal Kumar, "Design of a MAP decoder for OFDM," in Proc. National Conference on Emerging Challenges in Information and Communication Engineering, Asan College of Engineering and Technology, Apr. 2014.
- [26] R. Umamaheswari and P. Nirmal Kumar, "A high speed low area ASIP-based FFT processing," in Proc. National Conference on Communication and Advanced Research in Electrical, Electronics and Robotics, SNS College of Engineering, Mar. 2013.
- [27] R. Umamaheswari and T. R. Ganesh Babu, "Implementation of DWT invisible watermarking algorithm using QR decomposition," International Journal of Advances in Engineering, vol. 1, no. 7, pp. 584–590, 2014.
- [28] R. Umamaheswari and P. Nirmal Kumar, "An efficient implementation of ML-M-SISO decoder for wireless application—OFDM," in Proc. International Science Congress, Karunya University, vol. 1, p. 150, Dec. 2013.

BOOK PUBLICATIONS

- Editor for a book titled "Machine Learning and IoT for Intelligent Systems and Smart Applications" in CRC Press, Taylor and Francis, 2021
- Dr. S. Visalakshi and **Dr. R. Umamaheswari** authored a text book on Basic Electrical, Electronics, Measurements and Instrumentation Engineering-Volume 1. ISBN No: 978-81935988-5-6 (R2017 B.E-ECE students)
- Dr. S. Visalakshi and **Dr. R. Umamaheswari** authored a text book on Basic Electrical, Electronics and Measurements Engineering, ISBN No: 978-81-935988-9-4 (R2017 B.E-CSE and IT students)
- Dr. S. Visalakshi and **Dr. R. Umamaheswari** authored a text book on Basic Electrical, Electronics and Instrumentation Engineering, ISBN No: 978-81-935988-9-3 (R2017 B.E. Mechanical students)

CONFERENCES/SEMINARS/FDP/WORKSHOPS ATTENDED:

- Co-ordinator for Anna University Sponsored FDP on 4G/5G Communication systems from 29.01.24 to 03.02.24 (One Week)
- Certified FDP course on Universal Human Values organized by AICTE – 22.03.21 to 26.03.21 (One week)
- Certified AICTE- ATAL FDP course on IIOT – 07.06.21 to 11.06.21 (One week) Training Programme
- 10.05.2021 to 15.05.2021 (One week)
- Participated in Online training program sponsored by NITTTR IOT with MATLAB on 27.05.2021
- Certified AICTE sponsored STTP – Application of Artificial Intelligence – 18.01.2021 to 23.01.2021 (One week)

PROFESSIONAL MEMBERSHIPS:

- Life Member of THE INDIAN SOCIETY FOR TECHNICAL EDUCATION (ISTE) (LM 119328)
- Life Member of Computer Society of India- I1505773
- Life Member for IAENG (International Association of Engineers) –Membership Number: 189062
- Annual Member of THE INDIAN SCIENCE CONGRESS ASSOCIATION (Membership No: A5916)