

Faculty Profile



Dr. V.UmaRani , M.E., Ph.D

Associate Professor ,CSE

Date of Joining: 01.06.2021

HIGHLIGHTS:

- Number of Journal Publications:20
- H-Index:4
- Patents Published: 4
- Patents Granted: NIL

PROFESSIONAL LINKS:

- Scopus ID: 57201067545
- Scopus Link: <https://www.scopus.com/authid/detail.uri?authorId=57201067545>
- Google Scholar ID: H7OXDXoAAAAJ
- Anna University Faculty ID: 1108099
- AICTE Faculty ID: 1-83524811
- Anna University Supervisor ID:
- LinkedIn: <https://www.linkedin.com/in/uma-rani-17364a177/>

PROFESSIONAL BACKGROUND:

- Teaching Experience till date: 20 yrs 7 months
- Industrial Experience:NIL

INTERNATIONAL EXPOSURE:

- Served as a reviewer for various international conferences organized by academic institutions.
- Presented a paper at the ICISCT 2024 Conference held at Kookmin University, Republic of Korea.

AREA OF SPECIALIZATION:

- Wireless sensor networks
- Artificial Intelligence
- Machine Learning

PATENTS PUBLISHED/GRANTED:

- Ann Based Device for Reading Mood and Mind (Application number : 202341002412, Published Date: 17.02.2023)
- A System with Machine Learning to Diagnose Autism at an Earlier Stage (Application Number: 202241042291, Published Date: 29.07.2022)
- Plantain Tree Cultivation Utilizes a Deep Learning Model of Sequential Image Classifiers for Crop Disease Diagnosis(Application Number: 202241074035, Published Date: 13.01.2023)
- System for categorizing medications with different trade names and identical compositions (Application number: .202441092159, Published Date: 26/11/2024)

COURSES CERTIFIED:

- Completed 4 courses on Udemy, 5 courses on NPTEL, and 31 online courses on Coursera, including "Introduction to Unity and Basic C# Scripting," "Deep Learning," "Artificial Intelligence," "Internet History, Technologies, and Security," and "Python for Everybody," among others.
- Earned the AWS Academy Cloud Foundations Certificate through AWS Academy.

ACHIEVEMENTS AND AWARDS:

- Participated as FacultyGuide in the NiralThiruvizha(Hackathon)competition (2024)
- Conducted a workshop on “Laptop Diagnostics Mastery” on 7th Nov2024 at Saveetha Engineering College
- Conducted a workshop on “The Ethical Implications and Responsible use of Artificial Intelligence”, 2nd march 2024 at Saveetha Engineering College
- Act as a coordinator for AICTE Sponsored International Conference on Application of AI, ML, DL, Big Data on Recent Societal Issues (ICARSI'2023) on April 21 & April 22, 2023 at Saveetha Engineering College.
- Conducted a workshop on “PODMAN with Containerization” 21st Oct 2023 at Saveetha Engineering College.
- Conducted a Online Workshop on “GUI Programming & Database Connectivity Using PYTHON” 14th Oct 2022 at Saveetha Engineering College.
- Conducted a Guest Lecture on “Machine learning techniques in AI ” 12th April 2022 at Saveetha Engineering College.
- Conducted a Guest Lecture on “Theory of Computation” 15th Dec 2021 at Saveetha Engineering College.
- Conducted one day PALS Virtual Lab training for staff on 18th September 2021.
- Received best teacher award at 2015.
- Conducted a one week Faculty Development Programme on “C# and .NET framework” on Jaya Engineering College conducted by Anna University during May2012.
- Presented a session “Role of this pointer and Storage classes on Object Oriented Programming” in Faculty Development programme “Programming and Data Structures-II” on 24th June 2014 at Jaya Engineering College .

SPECIAL SESSIONS DELIVERED:

- Deliver a Guest lecture on topic “Artificial intelligence :A new Synthesis” at SRMIST on 23/01/2024
- Deliver a Guest lecture on topic “Machine Learning Projects” at SRMIST on 07/03/2024
- Act as a resource person and deliver a session on the topic “Evolutionary Computation” on 23.02.2024 in faculty development program of “Advances in Computational Intelligence” at Coimbatore Institute of Technology, Coimbatore

CONFERENCES/SEMINARS/WORKSHOPS ATTENDED:

- Attended 2 weeks faculty development Programme on “Mastering Research Paper and Proposal Writing” from 19-08-2024 to 30-08-24 organized by the SRMIST.
- Attended 1 week faculty development Programme on “AWS Cloud practitioner” from 3 June 2024 to 07 June 2024 at Alpha Arts and Science College
- Attended 8 days faculty development Programme on “Block Chain Technology and Applications” from 15 June 2023 to 24 June 2023 organized by Asi@Connect ,PDPM IITDM,Jabalpur
- Attended 8 days faculty development Programme on “Cyber Security and hacking” from 16 June 2023 to 24 June 2023 organized by SRM institute of technology,Ramapuram Campus.
- Attended ten days short term training programme on “Cyber Security: Global Hackathon,Defense mechanism and Digital Forensics from 1st February to 11th February 2023.
- Attended two weeks international FDP on “DataScience Tools” from 7th October to 20th October 2022.
- Attended National intellectual property awareness mission on October 11,2022.
- Attended one week FDP on “Amazon Web Services” from 22nd August 2022 to 27th August 2022 organized by M.kumarasamy College of Engineering.
- Attended AICTE training and Learning Academy online elementary FDP on “Bio inspired Computing for Data Analytics” from 8th February to 12th February 2022 at NIT Delhi.
- Attended IP Awareness or Training program under national intellectual property awareness mission on 29th January 2022.
- Attended online FDP on Virtual Labs from 23rd August 2021 to 27th August 2021.
- Attended faculty orientation program organized by Saveetha Teaching Learning Center on 18th August 2021.
- Attended two days international level workshop on “Internet of Robotic Things” organized by Nallamuthu Gounder Mahalingam College, 31st and 2nd August 2021.
- Attended AICTE training and Learning Academy online elementary FDP on “Nature Inspired Optimization Technique” from 19th July to 23rd July 2021 at NIT Delhi.
- Attended 4 Webinars conducted by Pantech solutions during 2020.
- Attended 12 Webinars conducted by Jaya Engineering college during 2020.
- Attended one day workshop on “Effective Research Grant writing” conducted by IET on 16th February 2013.
- Attended National level Workshop on “Mathematical modeling in Wireless sensor networks and hands on training in OMNeT++-Version 1.0” on 12th and 13th of December 2013
- Attended a workshop on “webinar on Pure Data and Arduino” at Jaya Engineering

College on 14th February, 2015.

- Attended a three days workshop on “Modern Teaching Methodology for Computer Science Faculty” during December 15-17, 2014, at Jaya Engineering College.
- Attended Two days workshop on NS2-MATLAB-AResearch Perspective” on 18 & 19 December 2014.
- Attended one day workshop on “Effective Research Grant writing” conducted by IET on 16th February 2013.
- Attended National level Workshop on “Mathematical modelling in Wireless sensor networks and hands on training in OMNeT++- Version 1.0” on 12th and 13th of December 2013.
- Attended 2-Weeks AICTE sponsored National Seminar Programme on “Recent Security Issues in Cloud Computing Application Areas” during 18–30 November 2013, at Jaya Engineering College.
- Attended a one day National workshop on “Network simulator-2” in 22nd March 2012 at Jaya engineering college.
- Attended a one day National workshop on “Journal Writing ” in May 2012 at Jaya engineering college.
- Attended a one day workshop program in KaaShiv InfoTech on May 2012.
- Attended a Workshop on “Free software, Freedom and Education” conducted by Free Software Foundation Tamil Nadu on Monday, 6th February 2012.
- Attended a one day national conference on Web Technologies and open source WEBTOPS’ 12 in Jaya Engineering College during 30th March 2012.
- Attended a one week Faculty Development Programme on “Artificial Intelligence” on Venkateswara Engineering College conducted by Anna University during 14th to 21st November 2011.
- Attended a workshop on Software Freedom Day’ 11 celebration conducted by “JAYA FOSS CLUB” on 17th September 2011.
- Attended a one day workshop on “Intellectual Property Rights” organised by JEC –ISTE chapter on September 2006.
- Attended a one week Faculty Development Programme on “Visual Programming” on Arulmigu Kalasalingam college of Engineering conducted by Anna University during 7th to 12th November 2005.

PROFESSIONAL MEMBERSHIPS:

- Life Member of the Indian Society of Technical Education (No: LM 11348)
- Member of The Society of Digital Information and Wireless Communications (ID: 13779)
- Member of CSTA
- NDLI Club Member

OTHER DETAILS (If any):

Journal Publications:

- V. UmaRani, V. Saravanan, and J. Jebamalar Tamilselvi. "A Hybrid Grey Wolf-Meta Heuristic Optimization and Random Forest Classifier for Handling Imbalanced Credit Card Fraud Data." International Journal of Intelligent Systems and Applications in Engineering 11, no. 9s (2023): 718-734. (Scopus)
- V. UmaRani, Kaldevi Ramar, J. Jebamalar Tamilselvi, P. Sarasu, V. Charles Prabu, "Analysis of multiclass imbalance handling in red wine quality dataset using oversampling and

machine learning techniques” Journal of Theoretical and Applied Information Technology, Vol. 101. No. 19, 2023. **.(Scopus)**

- Manju, A., A. Revathi, M. Arivukarasi, S. Hariharan, V. Umarani, Shih-Yu Chen, and Jin Wang. "Fuzzy Rule-Based Model to Train Videos in Video Surveillance System." *Intelligent Automation & Soft Computing* 37, no. 1 (2023). **.(SCI & Scopus)**
- R Sudharsanan, PV Gopirajan, V UmaRani, M Kanchana, "Secure Multi-Authentication using Blockchain Technology in Cloud based Internet of Things", 2022 in *Telematique*, pp. 6640-6650
- V.UmaRani, J. JebamalarTamilselvi, Rajan John, Classification of Twitter COVID Tweets Using Deep CNN-SLSTM Technique, in *Journal of PERIODICO di MINERALOGIA*, 2022, 91(4), 1182-1197.
- Dr J. JebamalarTamilselvi, Dr V.UmaRani, "Context Pseudo Relevance Feedback using Machine Learning Technique" in *international journal of creative research thoughts*, Vol 10, Issue 1 (2022), ISSN 2320-2882.
- V.UmaRani, AnithaJulian, J.Deepa, "Sentiment Analysis using various Machine Learning and Deep Learning Techniques. *Journal of the Nigerian Society of Physical Sciences*, pp.385-394. **.(Scopus)**
- D.Ramya, S.K Manigandan, J.Deepa, V.UmaRani, Click prediction for Advertisement in websites using Linear Regression" in *Turkish Journal of Computer and Mathematics Education*, Vol 12, No 4 (2021), 271-276. **.(Scopus)**
- V.UmaRani and K.SomaSundaram, "Dirichlet Distribution based Trust Model for Malicious Node Detection in Wireless Sensor Network" in *Journal of Engineering and Applied Sciences*, (2019) ISSN :1818-7803.
- V.UmaRani and K.SomaSundaram, "Detection of Packet forwarding Misbehaviours using Trust Model in Wireless Sensor Networks, *International Journal of Pure and Applied Mathematics*, ISSN: 1311-8080, Volume 117 No. 22 (2017), 265-269.
- V Umarani, Yuvasri.S, Charles Prabhu.V, "Survey Of Black Hole Detection In Wireless Sensor Networks", *International Journal For Research & Development In Technology*, Vol:8, Issue:4 (2017), 185-189.
- V Umarani, T Saraswathi, M Kumaran, "Predicting and Preventing the Denial Of Service Attacks Using Trust Based Fuzzy Logic Mechanism" in *International Journal of Emerging Technology in Computer Science & Electronics*, (2017) Volume:24, Issue 9, 35-38.
- V.Uma Rani, J.LinEby Chandra, D. Jayashree, "Efficient Storage Location Assignment Using Genetic Algorithm In Warehouse Management System" in *International Journal of advanced research*, Volume :4 Issue:6, (2016), 18-24.
- V.UmaRani, Dr K.SomaSundaram "Detection and Elimination of Packet Drop Attack in WSN" in *International Journal of Applied Engineering Research* Volume 10, Number 9, 2015 ISSN 0973-4562.
- V.UmaRani, D.JayaShree, Dr K.SomaSundaram "Trust Based Misbehaviour Detection in WSN" in *Applied Mechanics and Materials*. Vol 622, 2014, pp 191-198. **.(Scopus)**

- V.UmaRani, Dr K.SomaSundaram “Review of Trust Models in Wireless Sensor Networks” in World Academy of Science, Engineering and Technology, International Journal of Computer, Information Science and Engineering Vol:8 No:2, 2014,Pgno 101-107.
- V.UmaRani, Dr K.SomaSundaram “Survey of Various Trust models in Wireless Sensor networks” in International Journal of Emerging Technology and Advanced Engineering ISSN 2250-2459, ISO 9001:2008 Certified Journal, Volume 3, Issue 10, October 2013.
- V.UmaRani, A.Shylesh Manuel Raj(2012) ,”Interval Analysis Based Mobile Target Tracking In Sensor Network With Enhanced Ant Colony Optimization” in ISR journals and publications.
- V.Umarani, R.Dinesh Babu(2012)” Preventing False Injection Attack In Secure Data Aggregation Of Wireless Sensor Networks” in ISR journals and publications.
- V.UmaRani, E.A.Mary Anita(2011) ,”Security issues and Challenges in Wireless sensor networks” in CIIT international journal of Wireless Communications, Vol 3, No 15,November 2011.

International Conference:

- Sujatha, E., Umarani, V., Rekha, K.S., Gopirajan, P.V., and Manickavasagan, V. "Handling Imbalanced Data for Credit Card Fraudulent Detection: A Machine Learning Approach." *Communications in Computer and Information Science*, vol. 2203 CCIS, 2025, pp. 220–233.
- Pradeep, S., and Umarani, V. "Drug Sentiment Analysis: A Comprehensive Study Using Regression Models and Natural Language Processing." *IFIP Advances in Information and Communication Technology*, vol. 717 IFIPAICT, 2024, pp. 16–28.
- Ramya, D., Manigandan, S.K., Velmurugan, J., Umarani, V., and Reddy, P.V.S.R. "Advanced Brain Tumor Segmentation Using UNet and Multiple Residual Networks." *Proceedings of the 2nd IEEE International Conference on Networking and Communications 2024 (ICNWC 2024)*, 2024.
- Umarani, V., Srimathi, S. "Automatic Fabric Defect Detection Using Deep CNN-AlexNet Models." *Proceedings of the 2nd IEEE International Conference on Device Intelligence, Computing and Communication Technologies (DICCT 2024)*, 2024, pp. 82–87.
- Umarani, V., Swetha, K. "A Hybrid Slime Mould Meta Heuristic Algorithm and Machine Learning Technique for Intrusion Detection System." *2024 IEEE International Conference on Intelligent Techniques in Control, Optimization and Signal Processing (INCOS 2024)*, 2024.
- Umarani, V., Anupriya, J. "Automated Multiclass Dermatological Diagnosis Prediction Using Improved Mobile-Net Model." *2024 IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI 2024)*, 2024.
- Umarani, V., and Thirisaa, S. "Analysis of Pre-Trained CNN Models for Pepper and Potato Leaf Disease Prediction." *2024 International Conference on Emerging Smart Computing and Informatics (ESCI 2024)*, 2024.
- Uma Rani, V., Karnati Yogendra Reddy, Mekala Praneeth Kumar, and Teja Ramana Reddy Raju. "Blockchain-Based Voting System Using Ethereum Network." In *Artificial Intelligence, Blockchain, Computing, and Security: Volume 2*, pp. 382–387. CRC Press, 2024.

- Umarani, V., M. Jagadeesh Raj, K. Garshan Kumar, and Somu Vasanth Reddy. "Cartoonify Real-Time Images Using Machine Learning." In *Artificial Intelligence, Blockchain, Computing, and Security: Volume 2*, pp. 499–503. CRC Press, 2024.
- Uma Rani, V., and Thirisaa, S. "Analysis of Various Machine Learning Regression Models for AQI Prediction." *Proceedings of the 3rd International Conference on Innovative Sustainable Computational Technologies (CISCT 2023)*, 2023.
- Umarani, V., Moneesh, P., Sanjeev, M., and Nischitha, S. "A Hybrid Mel Frequency Cepstral Coefficients and Bayesian Gaussian Mixture Model for Voice-Based Authentication Websites." *Proceedings of the IEEE International Conference on Device Intelligence, Computing and Communication Technologies (DICCT 2023)*, 2023, pp. 367–370.
- Deepa, J., R. Naveen, Kambam Aneka, J. Velmurugan, V. Uma Rani, and Merry Ida. "Computational Drug Discovery Using QSAR Modeling." In *Recent Trends in Computational Intelligence and Its Application*, pp. 438–445. CRC Press, 2023.
- Umarani V, M. Dimpusowjanya, Dodla Poojitha, and Gurijala Sai Sriya. "Application Access for Chromatic Color Detection." In *Journal of Physics: Conference Series*, vol. 2484, no. 1, p. 012049. IOP Publishing, 2023.
- Uma Rani V, Jebamalar Tamil Selvi, Kaladevi R., and Shanmugasundaram, H. "A Hybrid MFWT Technique for Denoising Audio Signals." *Proceedings of the 2nd International Conference on Innovative Sustainable Computational Technologies (CISCT 2022)*.
- Uma Rani, V., Jebamalar Tamilselvi, J., John, R., and Deepa, J. "Trust Model for Secure Routing in Wireless Sensor Networks Using AI Techniques." *8th International Conference on Smart Structures and Systems (ICSSS 2022)*.
- Dr. V. Uma Rani and Dr. J. Jebamalar Tamil Selvi. "Sentiment Analysis of Online Product Reviews Using Machine Learning Techniques." *International Conference on Machine Intelligence and Green Computing at Kalaingar Karunanidhi Institute of Technology*, 2021.
- V. Uma Rani and Dr. K. Soma Sundaram. "Detection of Selective Forwarding Attack Using BDRM in Wireless Sensor Networks." *AIP Conference Proceedings*, vol. 2271, 2020.
- V. Uma Rani, Dr. K. Soma Sundaram, and D. Jaya Shree. "Enhanced Beta Trust Model in Wireless Sensor Networks." *International Conference at S.A Engineering College*, 2016.
- S.A. Mariam Benazir and V. Uma Rani. "Detection of Selfish & Malicious Behavior Using DTN-Chord Monitoring in Mobile Networks." *International Conference on Information Communication and Embedded System (ICICES 2016)*.
- V. Uma Rani and Dr. K. Soma Sundaram. "Detection and Elimination of Packet Drop Attack in WSN." *2nd International Conference on Engineering Technology and Science (ICETS)*, 2015.
- V. Uma Rani and P. Karpagam. "Adaptive File Replication and Consistency Maintenance in P2P Network Systems." *International Conference on Information Communication and Embedded System (ICICES)*, 2011.

National Conferences:

- V.UmaRani, E.Sujatha, Gopirajan P.V(2021), "Recommendation Filtering based Trust Model for Secure Routing in WSN", National Conference Innovative Data Engineering Applications at Vel Tech High Tech Dr. Rangarajan Dr. Sakunthala Engineering College.

- JebamalarTamilselvi, V.UmaRani (2021),” Domain Specific Search Engine using Context Pseudo Relevance feedback”, National Conference Innovative Data Engineering Applications at Vel Tech High Tech Dr. Rangarajan Dr. Sakunthala Engineering College,
- R.Dinesh Babu, V.UmaRani(2012),”Attack Resilient Synopsis Diffusion Approach for Data Aggregation in Wireless Sensor Networks” in national conference NCETCA’12 at SRM university.
- A.Shylesh Manuel Raj, V.UmaRani(2012)” Interval Analysis Based Mobile Target Tracking In Sensor Network With Enhanced Ant Colony Optimization” in WEBTOPS’12 at Jaya engineering college.
- R.Dinesh Babu, V.UmaRani(2012),”Preventing False Injection Attack In Secure Data Aggregation Of Wireless Sensor Networks” in national conference WEBTOPS’12 at Jaya engineering college.
- C. Prameela devi, V.UmaRani (2012)”Single key assignment scheme for wireless networks in WEBTOPS’12 at Jaya engineering college.
- V.UmaRani,MaryLisy (2011),”Clone attack detection in Wireless sensor networks” in national conference of Prathusha Institute of Technology.
- V.UmaRani,Arul Jothy.R (2011), “Detecting Sinking Malicious behaviour in wireless Ad Hoc network using cross layer approach” in national conference of “Recent Trends in computer Applications and Technology on 30th September 2011.
- V.UmaRani, P.Vijalakshmi,Dr K.RadhaKrishnan “ Dynamic Reconfiguration of Wireless networks using GA “ in national conference on Recent trends in Communication Techniques NATCON’04 at Noorul Islam college of Engineering.