

Faculty Details for Department Website

Name: Dr. M.P. Rajakumar

Degree: M.E., Ph.D

Designation: Professor

Experience: 25 years and 4 months

Area of Specialization: Soft Computing, Theoretical Computer Science, Machine Learning

Contact (Email id): rajakumarmp@stjosephs.ac.in

Subjects Handled:

- Neuro-fuzzy Computing
- Computational Linguistics
- Data Mining
- Machine Learning Techniques
- Design and Analysis of Algorithms
- Graph Theory and Applications
- Foundations of Data Science
- Resource Management Techniques (Operations Research)
- Theory of Computation
- Microprocessors and Microcontrollers
- Cryptography and Network Security
- Discrete Mathematical structures

Publications (Journals & Conferences):

International Journals Publications

- Poyyamozi Natesan, **M.P. Rajakumar**, Sreevidya R C, Srimanickam B, Suresh Vellaiyan, Nguyen Van Min (2025), “Exergy efficiency optimization of a water-based titanium dioxide nanofluid hybrid solar collector using advanced machine learning models” Case Studies in Thermal Engineering, Volume 74, October 2025, 106815
- Samiayya Duraimurugan, Ambayiram Chinnasamy, Natarajan Hariprasad, **Muthusamy Palani Rajakumar** (2025), “Optimized Video Streaming in Mobile Environments: A Novel Multihead Autoencoder and Red-Tailed Hawk Optimization Framework”, IETE Journal of Research

- S. Sasikumar, R. Pugalenth, G.M. Sasikala, and **M.P. Rajakumar** (2023), “Medical Image Segmentation and Classification using Modified DoubleU-Net and PolyNet Deep Neural Networks”, International Journal of Pattern Recognition and Artificial Intelligence, 2023, 37(13), 2357013
- Ramya, J., Maheswari, B.U., **Rajakumar, M.P.**, Sonia (2022), “R.Alzheimer’s Disease Segmentation and Classification on MRI Brain Images Using Enhanced Expectation Maximization Adaptive Histogram (EEM-AH) and Machine Learning”, Information Technology and Control, Vol. 51, No. 4, pp. 786-800.
- Maheswari, B.U., **Rajakumar, M.P.**, Ramya J(2022), “Dynamic differential annealing-based anti-spoofing model for fingerprint detection using CNN”, Neural Computing and Applications, Vol. 34, No. 11, pp. 8617-8633.
- Ramya, J.,**Rajakumar,M.P.**, Maheswari, B.U (2022), “Deep CNN with Hybrid Binary Local Search and Particle Swarm Optimizer for Exudates Classification from Fundus Images”, Journal of Digital Imaging, Vol. 35, No. 1, pp. 56-67.
- Uma Maheswari, B.,Sonia, R.,**Rajakumar, M. P.**,Ramya, J(2021), “Novel Machine Learning for Human Actions Classification Using Histogram of Oriented Gradients and Sparse Representation”, Information Technology and Control, Vol. 50, No. 4, pp. 686-705.
- R. Sonia,B. Uma Maheswari, **M.P. Rajakumar**, J. Ramya (2021), “Medical Information System for Classification of Diabetes Mellitus Using Layered Neural Network”, Journal of Control Engineering and Applied Informatics, Vol. 23, No. 4, pp. 95-104.
- Rajakumar, M.P., Sonia, R., Uma Maheswari, B., Karuppiah, SP (2021), “Tuberculosis Detection in Chest X-ray Using Mayfly-algorithm Optimized Dual-deep-learning Features’, Journal of X-Ray Science and Technology, Vol. 29, No. 6, pp. 961-974
- Ramya, **M.P.Rajakumar**, B.Uma Maheswari (2021), “HPWO-LS-based deep learning approach with S-ROA-optimized optic cup segmentation for fundus image classification” Neural Computing and Applications, Vol. 33, No. 15, pp. 9677-9690.
- **M.P.Rajakumar**, J.Ramya, ,B.Uma Maheswari (2021), “Health monitoring and fault prediction using a lightweight deep convolutional neural network optimized by Levy flight optimization algorithm”, Neural Computing and Applications, Vol. 33, No. 19, pp. 12513-12534.
- **Rajakumar, M.P.**, Ramya, J.,Uma Maheswari, B.Sonia, R (2021).” A Novel Scheme for Encryption and Decryption of 3D Point and Mesh Cloud Data in Cloud Computing”, Journal of Control Engineering and Applied Informatics, Vol. 23, No. 1, pp. 93-102.

- R. Pugalenth, M.P. Rajakumar, J.Ramya ,V. Rajinikanth (2019),” Evaluation and Classification of the Brain Tumor MRI using Machine Learning Technique”, Journal of Control Engineering and Applied Informatics, Vol. 21, No. 4, pp. 12-21.
- **Rajakumar M. P** and Jeyaraman M.P (2018), “Investigating Unstructured Intelligent Information for Stock Market Prediction Using Neural Network”, International Journal of Pure and Applied Mathematics”, Volume 118, No. 18, pp. 2749-2755.
- Pugalenth R and **Rajakumar M.P** (2018) “Robust, Efficient and Scalable Multicast Scheme for a Secure Heterogeneous Network”, TAGA Journal, Vol. 14, pp.822-832.
- **Rajakumar M.P**, Pugalenth R and C. Shanmugha Priya (2018), “A Novel Method for Event Detection Using Non-Intrusive Load Monitoring”, TAGA Journal, Vol.14, pp.752-759.
- **Rajakumar M. P** and Ramya J (2017), “A Comparison of Intelligent Soft Computing Techniques for Forecasting Earnings Per Share” International Journal of Pure and Applied Mathematics, Vol.114, No. 9, pp.167-177.
- C. Shanmugha Priya and **M. P. Rajakumar** (2017), “Non-Intrusive Load Monitoring Techniques for Energy Disaggregation: A Survey”, International Journal of Advanced Research in Electrical, Electronics and Instrumentation Engineering, Vol. 6, Special issue 3, pp. 12-21.
- **Rajakumar M. P** and Shanthi V (2014), “Forecasting Earnings Per Share for Companies in IT Sector using Markov Process Model”, Journal of Theoretical and Applied Information Technology, Vol. 59, No. 2, pp. 332- 341.
- **Rajakumar M. P** and Shanthi V (2014), “Security Breach in Trading System - Countermeasure using IPTraceback”, American Journal of Applied Sciences, Vol. 11, No. 3, pp. 492-498.
- **Rajakumar M. P** and Shanthi V (2014), “A Hybrid Competitive Genetic Algorithm Models in Stock Market Prediction”, International Journal of Artificial Intelligence and Neural Networks, Vol. 4, No. 1, pp. 16-19.
- **Rajakumar M. P** and Shanthi V (2013), “Markov Process Model Forecasting of Quarterly Accounting Earnings Per Share”, Indian Journal of Applied Research, Vol. 3, No. 6, pp. 99-103.
- **Rajakumar M. P** and Shanthi V (2013), “Fusion Model for Forecasting the Major Indicator of Leading Industries”, Advances in Computational Sciences and Technology, Vol. 6, No. 1, pp. 47-59.
- **Rajakumar M. P** and Shanthi V (2013), “Computationally Intellectual Structure for Forecasting Share Price”, International Journal of Soft Computing, Vol. 8, No. 3, pp. 218-222.

- **Rajakumar M. P** and Shanthi V (2012), “Economic Prediction Using Computationally Intelligent Hybrid Systems”, Wulfenia Journal, Vol. 19, No. 12, pp. 297-307.

International Conference Publications:

- Sri Sathvig. K, Priyanka Bharathi. Santhosh. M, **M.P. Rajakumar (2025)**, “Multi-Phase Parkinson's Disease Detection: An Adaptive Deep Learning Approach Combining Brain MRI Analysis, Gait Dynamics, and Automated Reporting” 2025 International Conference on Data Science and Business Systems (ICDSBS)
- Vinston Raja R, Jose P; **Rajakumar M P**; R. Balamurugan; M. S. Malchijah Raj; M. Robinson Joel (2025), “Creating a Secure Data Sharing Network for Disease Identification Using CT Images and RHC-Based Encryption Scheme” 2025 International Conference on Intelligent and Cloud Computing (ICoICC)
- Rama A, N Mythili, **M.P. Rajakumar**, S. Arunmozhi, Mazin Abed Mohammed and Rajinikanth V (2023), “Lightweight Deep-Learning Based Music Genre Classification: A Study”, 2023 International Conference on System, Computation, Automation and Networking, ICSCAN 2023.
- Rama, A., **Rajakumar, M.P.**, Mythili, N., Mohammed, M.A. and Rajinikanth, V (2023), “Detection of TB from Chest X-ray: A Study with EfficientNet”, 2023 International Conference on System, Computation, Automation and Networking, ICSCAN 2023.
- Maheswari, B.U. , Guhan, T. , Britto, C.F. , **Rajakumar, M.P.** and Pratyush, K. (2023), “Performance analysis of classifying the breast cancer images using KNN and naive bayes classifier”, AIP Conference Proceedings, 2023, 2831(1), 020012
- **Rajakumar M. P** and Shanthi V (2014), “A Hybrid Competitive Genetic Algorithm Models in Stock Market Prediction”, Proceedings of the Second Intl. Conf. on Advances in Computer and Information Technology.
- **Rajakumar M. P** and Shanthi V (2013), “A Comparison of Stock Trend Prediction Using Accuracy Driven Neural Network Variants”, Proceedings of the Fourth International Conference on Control, Communication and Power Engineering, pp. 73-79.

National Conference Publications

- **Rajakumar M. P** and Shanthi V (2013), “A Comparison of Intelligent Hybrid Neural Networks for Stock Market Prediction”, Proceedings of the Second National Conference on Emerging Trends in Information and Communication Technologies, pp. 01-07.

- **Rajakumar M. P** and Shanthi V (2013), “Layered Model of Data Mining Techniques for Stock Market Prediction”, Proceedings of the National Conference on Innovations in IT and Engineering, pp. 274-278.

Book Chapter

- M. Balasubramani, P. Jose , **M. P. Rajakumar**, Sumithra Devi, Krishnan M. Navaneetha, and Joel M. Robinson (2025), “Methods for Promoting Students' Active Engagement in Digital Environments”, Digital Tools and Platforms for Effective and Personalized Learning, pp. 375-402.
- M Balasubramani, **M. P. Rajakumar**, R. Suganthi, M. Navaneetha Krishnan, K. Raghavi and M. Robinson Joel (2025), “ Using AI to Improve Crop Tracking, Soil Investigation, and Nutrient Management in Precision Agriculture”, Precision and Intelligence in Agriculture Advanced Technologies for Sustainable Farming, pp. 247-272.
- **M. P. Rajakumar**, R. Balamurugan, R. Kavitha, N. Alamelu Menaka, Joel Jacson and M. Robinson Joel (2025), “Personalized precision integrating AI for tailored treatment planning in nuclear medicine” AI Insights on Nuclear Medicine, pp. 181-201

Patents Grants:

- **Rajakumar, M. P.**; Behura, Aradhana; Sairam, K.V.S.S.S.S.; Bhat, Anup Purushottam; Sawle, Yashwant; Bohre,Aashish Kumar; Verma, Deepak; Shekhar, Snehanthu; Chakrabarti, Prasun; Hati, Ananda Shankar;Mandal(Vijayvergiya), Rashmi and Chhawchharia, Pradeep, An Efficient Power Distribution Based on IOT-Fog Resource for Effective Proxy Negotiation for Traffic Reduction, Australian Patent 2020104365, Filed Date: 29/12/2020, Granted : 03/03/2021

Patents Published:

- Dr B.Sarada ,Chidananda T,M.Madhavi,Dr. G. Suganya, Surya G, Dr. Nagababu Pachhala, Srishyla K, Nandhini D, **Dr Rajakumar M P**, R.Sasikala, Gangu Dharma Raju , AI and Blockchain-Based Secure Payment Gateway for In-App Purchases on Social Media Platforms, Indian Patent 202441030296, Filed Date: 29/10/2024, Published Date: 08/11/2024.
- Dr. Deepali Gupta, Ms. Mudita, Dr. Kamali Gupta, Ms. Gifty Gupta, Ms Neha Gautam, Mrs. Priyanka Kumari Bansali, **Dr M P Rajakumar**, Mr. Praveen C Menon, Mr. Rajasekhar Boddu ,Mr.Rajendar Kalvala, Hybridization with Deep

Learning Techniques and Data Mining for Advanced Use of Industrial Sensor Networks, Indian Patent 202011035974 A, Filed Date: 20/08/2020, Published Date: 18/09/2020.

NPTEL Certifications:

- Introduction to Internet of Things (**TOPPER**)
- Cloud Computing (**TOPPER**)
- Operating System Fundamentals
- Linear Algebra Through Geometry
- Computational Arithmetic - Geometry for Algebraic Curves
- Data Science for Engineers
- Introduction to Graph Algorithms
- Data Base Management System (**TOPPER**)
- Data Analytics with Python
- Natural Language Processing
- Deep Learning - IIT Ropar
- Secure Computation: Part I
- Project Management
- Fundamental Algorithms: Design and Analysis (**TOPPER**)
- Python for Data Science
- Introduction to probability and Statistics
- Learning Analytics Tools
- Operations and Supply Chain Management
- Theory of Computation
- Introduction to Machine Learning - IITKGP
- Project management for managers
- Computer Graphics
- Advanced Computer Architecture
- Decision making with spreadsheet
- Compiler Design
- Computer Networks and Internet Protocol
- Programming, Data Structures and Algorithms Using Python
- Design and analysis of algorithms
- A basic course in number theory
- Microprocessors and Interfacing
- Cryptography and Network Security (**TOPPER**)
- Microprocessors and Microcontrollers
- Fuzzy Logic and Neural Networks
- Data Mining
- Introduction to Automata, Languages and Computation
- Graph Theory (**TOPPER**)
- Software Engineering
- Discrete Mathematics

- Business Analytics & Data Mining Modeling Using R-PART II
- Introduction to Operations Research
- Introduction to Soft Computing
- Business Analytics and Data Mining Modeling using R
- Computer architecture and organization
- Introduction to algorithms and analysis (**TOPPER**)
- Privacy and Security in Online Social Media
- Introduction to Database Systems

Awards /Achievements:

Received 19 NPTEL Star Awards in various categories.

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| ● NPTEL DOMAIN SCHOLARS-Systems | Jan-Apr 2025 |
| ● NPTEL MOTIVATED LEARNERS | Jan-Apr 2025 |
| ● NPTEL DOMAIN SCHOLARS-DATA SCIENCE | Jan-Apr 2024 |
| ● NPTEL DOMAIN SCHOLARS-OPERATIONS | Jan-Apr 2024 |
| ● NPTEL DOMAIN SCHOLARS-FOUNDATIONS OF COMPUTING | Jul-Dec 2024 |
| ● NPTEL BELIEVERS | Jan-Apr 2022 |
| ● NPTEL BELIEVERS | Jan-Apr 2024 |
| ● NPTEL MOTIVATED LEARNERS | Jul-Dec 2019 |
| ● NPTEL DISCIPLINE STARS | Jul-Dec 2019 |
| ● NPTEL EVANGELISTS | Jan-Dec 2020 |
| ● NPTEL ENTHUSIASTS | Jul-Dec 2022 |
| ● NPTEL BELIEVERS | Jul-Dec 2023 |
| ● NPTEL DISCIPLINE STARS | Jul-Dec 2023 |
| ● NPTEL DISCIPLINE STARS | Jul-Dec 2023 |
| ● NPTEL SUPERSTARS | Jul-Dec 2024 |
| ● NPTEL ENTHUSIASTS | Jul-Dec 2024 |
| ● NPTEL EVANGELISTS | Jul-Dec 2024 |
| ● NPTEL DISCIPLINE STARS | Jul-Dec 2024 |
| ● NPTEL CHAMPIONS | Jul-Dec 2024 |

Google Scholar ID: <https://scholar.google.co.in/citations?user=pikDCAIAAAAJ&hl=en>

Scopus ID: <https://www.scopus.com/authid/detail.uri?authorId=55967104900>

WOS researcher ID:

<https://www.webofscience.com/wos/author/record/AAR-5169-2020>

Orchid id: <https://orcid.org/0000-0003-2821-7677>