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Raspberry Pi Enabled IoT Public Transport Tracking and Digital Arrival Information Display System

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KEYWORDS

Internet of Things (IoT), Raspberry Pi, Public Transport Tracking, Real-Time Monitoring, RFID Technology.

ABSTRACT

Public transportation systems play a crucial role in urban mobility; however, the lack of real time tracking and accurate arrival information often leads to passenger inconvenience and operational inefficiencies. To address these challenges, this research proposes a Raspberry Pi enabled IoT based Public Transport Tracking and Digital Arrival Information Display System. The system integrates RFID technology, IoT communication, and embedded processing to provide real time monitoring and information dissemination. The system leverages IoT connectivity for continuous data transmission and remote monitoring, ensuring timely updates and improved service transparency. By automating tracking and arrival notifications, the proposed solution minimizes waiting time, reduces uncertainty, and improves overall commuter experience. Furthermore, the system is cost effective, scalable, and suitable for deployment in both urban and semi urban areas, aligning with modern smart city initiatives.

I. INTRODUCTION

Public transportation is an essential component of modern urban infrastructure, providing affordable and accessible mobility to a large population. Despite its importance, many public transport systems still face significant challenges, particularly in providing accurate and real-time information regarding vehicle location andarrival times. Passengers often rely on fixed schedules, which are frequently disrupted due to traffic congestion, delays, and operational inefficiencies, resulting in increased waiting times and dissatisfaction.

With the rapid advancement of the Internet of Things (IoT), there is a growing opportunity to transform traditional; transportation systems into intelligent and connected networks. IoT enables seamless communication between devices, allowing real time data collection, processing, and dissemination. Recent studies have highlighted that IoT based transport monitoring systems significantly improve operational efficiency and passenger convenience by enabling continuous tracking and data driven decision making[1]. Furthermore, integrating technologies such as RFID and cloud

platforms enhances system reliability and supports real time updates for users[2].

The proposed system introduces a Raspberry Pi enabled IoT based Public Transport Tracking and Digital Arrival Information Display system. The system utilizes RFID technology to detect buses at specific checkpoints and employs a Raspberry Pi as the central processing unit to manage and process incoming data. Additional components such as a push button interface allow user interaction, while digital displays and audio announcement systems provide real time updates to passengers, ensuring inclusivity for visually impaired individuals.

It reduce uncertainty in public transportation by delivering accurate and timely information about bus arrivals and status. By automating tracking and information dissemination, the system enhances passenger experience, minimizes waiting time, and improve overall transport efficiency. Moreover, the proposed solution is cost effective, scalable, and suitable for integration into smart city infrastructures, contributing to the development of intelligent transportation systems.

2. LITERATURE SURVEY

Thedevelopment of intelligent public transportation systems has gained significant attention with the advancement of IoT and embedded technologies. Various research works have explored different approaches for real time vehicle tracking, passenger information systems, and transport management.

Ihor Zakutynskyi et al. proposed an IoT based system for monitoring and managing public transport data, emphasizing real time communication between vehicles and centralized systems. Their work highlights the importance of cloud connectivity and efficient data transmission in improving decision making and optimizing passenger flow [1]. This study management of transportation networks.

An IoT based public transport management system presented by IJRTI authors integrates RFID, GPS, and ckoud storage to provide real time tracking and passenger monitoring. The system supports features such as cashless ticketing and data storage using cloud platforms, improving convenience for both passengers and transport authorities [2]. However, the inclusion of GPS increases system cost and complexity.

Varun Krishna K.G. et al. introduced a ticketless transportation system using RFID technology. Their system automates fare collection and tracks passenger movement using RFID, GPS, and Zigbee communication. This approach reduces manual errors and enhances system efficiency, but it requires additional infrastructure for communication between modules [3].

The study by IJCRT authors focuses on a Raspberry Pi-based bus tracking and monitoring system. This system uses GPS and sensors to provide real-time location updates and emergency alerts. It improves passenger safety and enables remote monitoring by authorities, although dependency on GPS may affect performance in certain environments [4].

Neelam R. Gawade et al. proposed an automatic IoT-based smart public transport system that integrates RFID, GPS, and Wi-Fi for bus identification and real-time arrival announcements. The system enhances passenger experience by providing accurate updates and reducing manual intervention [5]. This work strongly supports the integration of multiple technologies for smarter transport solutions.

A review paper by IJAEM authors analyzes different bus tracking systems based on GPS, RFID, and mobile applications. The study identifies key challenges such as high cost, signal interference, and reliability issues, and emphasizes the need for cost-effective and scalable solutions [6].

Anandkumar A. et al. developed an IoT-enabled smart bus system focusing on passenger safety and monitoring. The system uses RFID and sensors to track buses and provide notifications, improving both safety and operational efficiency [7].

3. EXISTING METHOD

The public transport tracking and management systems primarily rely on technologies such as GPS, RFID, IoT platforms, and mobile applications to monitor vehicle movement and provide passenger information. These methods have significantly improved transportation systems, yet they also present certain limitations.

One of the most commonly used approaches is the GPS-based tracking system, where the location of buses is continuously monitored using satellite communication. These systems provide real-time location updates and are widely used in smart

transportation solutions. Research shows that GPS-enabled systems can improve tracking accuracy and passenger information services; however, they are often associated with high implementation costs and may suffer from signal loss in dense urban areas or tunnels [4].

Another widely adopted method is the IoT-based transport management system, where sensors and communication modules are used to send vehicle data to cloud platforms. These systems enable real-time monitoring, data storage, and analysis for better decision-making. Studies indicate that IoT-based solutions improve operational efficiency and passenger convenience by enabling continuous data exchange between vehicles and control centers [1]. However, such systems require stable internet connectivity and robust cloud infrastructure.

RFID-based systems are also used in public transportation for identification and tracking purposes. In these systems, RFID tags are placed on buses and readers are installed at checkpoints or stations. When a bus passes through a checkpoint, its data is captured and processed. This method is cost-effective and reliable for short-range communication, but it lacks continuous tracking capability compared to GPS systems [3].

Some advanced systems combine GPS, RFID, and cloud technologies to create hybrid solutions. These systems provide features such as real-time tracking, passenger monitoring, and automated ticketing [2]. While these integrated systems offer better performance, they increase system complexity, cost, and maintenance requirements.

Additionally, mobile application-based systems allow passengers to track buses and receive notifications. Although convenient, these systems depend heavily on user devices, internet access, and backend server performance [6].

4. PROPOSED METHODOLOGY

The proposed system is designed as a Raspberry Pi–enabled IoT-based Public Transport Tracking and Digital Arrival Information Display System, aimed at providing real-time and reliable information about bus arrivals. The methodology focuses on integrating RFID technology with embedded systems and IoT communication to create an efficient, cost-effective, and scalable solution for public transportation monitoring.

In this system, each bus is equipped with a unique RFID tag that stores identification information. At designated bus stops or checkpoints, RFID readers are installed to detect these tags whenever a bus approaches. When a bus enters the range of the RFID reader, the tag information is captured and transmitted to the central processing unit, which is the Raspberry Pi. This approach enables automatic identification of buses without requiring continuous tracking, thereby reducing system complexity and operational cost compared to GPS-based systems [3].

The Raspberry Pi acts as the core controller of the system, responsible for processing the incoming data from the RFID reader. Upon receiving the tag information, it identifies the corresponding bus and determines its arrival at a specific stop. The processed data is then used to update the passenger information system in real time. This ensures that commuters receive accurate and timely updates regarding bus arrivals and status.

To communicate this information effectively, the system incorporates a digital display unit, such as an LCD or LED screen, which shows details like bus number, arrival status, and expected timing. In addition to visual output, a speaker module is integrated to provide audio announcements. This feature is particularly beneficial for visually impaired passengers, making the system more inclusive and user-friendly.

The system also includes a push-button interface that allows passengers to interact with the system. By pressing the button, users can request updated information or trigger audio announcements. This demand-based interaction enhances usability, especially in busy environments where continuous announcements may not be practical.

Furthermore, the proposed methodology utilizes IoT connectivity to enable data transmission and remote monitoring. The system can be extended to send data to centralized servers or mobile applications, allowing transport authorities to monitor vehicle movement and performance. IoT-based communication has been shown to improve efficiency and enable real-time decision-making in transportation systems [1].

The proposed methodology offers a reliable and efficient solution by combining RFID-based detection, Raspberry Pi processing, and IoT communication. It overcomes the limitations of existing systems by reducing dependency

on costly technologies while still providing accurate, real-time information to passengers.

BLOCK DIAGRAM & WORKING SYSTEM

Block Diagram:

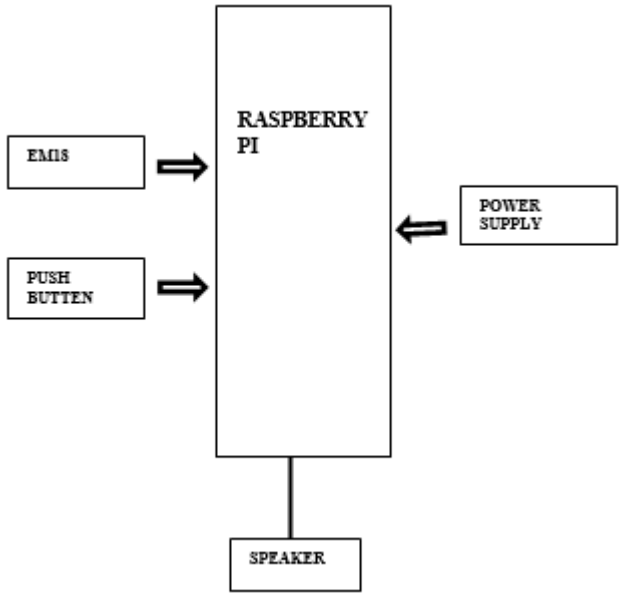

Fig 4.1: BLOCK DIAGRAM

Working System:

The working ofthe proposed system is based on the integration of RFID technology, Raspberry Pi processing, and IoT communication to provide real-time updates of public transport vehicles. The system operates in a sequential and automated manner to ensure accurate detection and information dissemination.

Initially, each bus is equipped with a unique RFID tag that contains identification details. RFID readers are installed at specific locations such as bus stops or checkpoints. When a bus approaches a bus stop, the RFID reader detects the presence of the tag and captures the stored information. This detection process occurs automatically without requiring manual intervention, ensuring fast and reliable identification of the vehicle.

Once the RFID tag is detected, the collected data is transmitted to the Raspberry Pi, which acts as the central processing unit of the system. The Raspberry Pi processes the received information to identify the bus and determine its arrival at the respective stop. Based on this processing, the system updates the current status of the bus in real time. This method provides accurate arrival detection at fixed points while avoiding the continuous tracking requirements of GPS-based systems [3].

After processing the data, the Raspberry Pi sends the updated information to the output devices. The digital display unit, such as an LCD or LED screen, shows relevant details including bus number, arrival confirmation, and expected timing. Simultaneously, the speaker module generates audio announcements to inform passengers about the bus arrival. This dual-mode communication enhances usability and ensures accessibility for visually impaired individuals.

In addition to automatic updates, the system includes a push-button interface for user interaction. When a passenger presses the button, the system can trigger an immediate update or repeat the audio announcement. This feature is particularly useful in crowded environments where passengers may miss initial notifications.

Furthermore, the system can utilize IoT connectivity to transmit data to a remote server or monitoring system. This allows transport authorities to track bus movements, analyze system performance, and make informed decisions. IoT-based communication enables efficient data sharing and enhances the overall effectiveness of the transportation system [1].

The working system ensures smooth and continuous operation by combining automated detection, real-time processing, and effective information delivery. It significantly reduces passenger uncertainty, improves waiting time management, and contributes to a smarter and more efficient public transport system.

5. RESULTS AND OUTCOMES

The implemetation of the proposed Raspberry Pi–enabled IoT-based Public Transport Tracking and Digital Arrival Information Display System demonstrates significant improvements in the efficiency and reliability of public transportation monitoring. The system was successfully able to detect buses at designated checkpoints using RFID technology and process the data in real time through the Raspberry Pi. The accurate identification of buses at bus stops confirms the effectiveness of RFID-based detection as a cost-efficient alternative to continuous GPS tracking [3].

One of the key outcomes of the system is the ability to provide real-time information to passengers through digital displays. The LCD/LED screen effectively shows

bus arrival status and related details, reducing uncertainty and helping passengers plan their travel more efficiently. Additionally, the integration of audio announcements through a speaker module ensures accessibility for visually impaired users, making the system inclusive and user-friendly.

The push-button interface further enhances system usability by allowing passengers to request updates or replay announcements when needed. This feature proved particularly useful in crowded or noisy environments, where continuous announcements may not be easily heard. The combination of visual and audio outputs significantly improves the overall passenger experience.

From an operational perspective, the system demonstrates improved transport management capabilities. By enabling real-time monitoring of bus arrivals at specific checkpoints, it allows transport authorities to analyze movement patterns and identify delays. IoT-based communication also provides the potential for remote monitoring and future integration with mobile applications, which aligns with modern smart transportation systems [1].

Another important outcome is the cost-effectiveness of the system. By using RFID technology instead of GPS for continuous tracking, the overall system cost is reduced while still maintaining reliable performance at key locations. The system is also scalable, meaning it can be extended to multiple buses and bus stops without significant infrastructure changes.

The results indicate that the proposed system effectively reduces passenger waiting time, improves information accuracy, enhances accessibility, and supports better transport management. These outcomes highlight the system's potential for real-world implementation in smart city transportation networks.

6. CONCLUSION

The proposed Raspberry Pi–enabled IoT-based Public Transport Tracking and Digital Arrival Information Display System provides an effective solution to the limitations of traditional public transportation systems. By integrating RFID technology with embedded processing and IoT communication, the system enables accurate detection of buses at designated checkpoints and ensures real-time dissemination of arrival information to passengers.

The implementation of this system significantly improves passenger convenience by reducing uncertainty and waiting time through timely updates displayed on digital screens and announced via audio systems. The inclusion of voice-based alerts enhances accessibility, making the system suitable for visually impaired individuals. In addition, the push-button interface allows user interaction, further improving usability in real-world scenarios.

Compared to existing methods that rely heavily on GPS and complex cloud infrastructures, the proposed system offers a cost-effective and reliable alternative. RFID-based detection minimizes dependency on continuous internet connectivity while still providing accurate tracking at key locations [3]. Moreover, IoT integration enables remote monitoring and future scalability, supporting efficient transport management and data-driven decision-making [1].

The system is highly scalable and can be deployed in urban, semi-urban, and rural areas with minimal infrastructure requirements. It aligns with the concept of smart cities by promoting intelligent, transparent, and efficient transportation services. Overall, the project demonstrates that combining simple hardware components with IoT technologies can lead to a practical and impactful solution for modern public transport challenges.

Conflict of interest statement

Authors declare that they do not have any conflict of interest.

REFERENCES

[1] K. K. . Kommineni and A. . Prasad, "A Review on Privacy and Security Improvement Mechanisms in MANETs", Int J Intell Syst Appl Eng, vol. 12, no. 2, pp. 90–99, Dec. 2023.

[2] Kommineni, K.K., Prasad, A. Enhancing Data Security and Privacy in SDN-Enabled MANETs Through Improved Data Aggregation Protection and Secrecy. Wireless Pers Commun 139, 855–882 (2024). https://doi.org/10.1007/s11277-024-11635-w

[3] "Blockchain-Enabled Secure Data Aggregation for SDN-Enabled Ad-Hoc Networks," International Journal of Intelligent Engineering and Systems, vol. 18, no. 5, pp. 704–717, Jun. 2025, doi: https://doi.org/10.22266/ijies2025.0630.49.

[4] K. K. Kommineni, P. Ande, "Blockchain-driven key management and privacy-preserving data Aggregation Scheme for SDN-enabled MANETs," International Journal of Intelligent Engineering and Systems, vol. 18–18, no. 9, pp. 601–615, 2025, doi: 10.22266/ijies2025.1031.39.

[5] Kumar, K. K., Kumar, S. G. B., Rao, S. G. R., & Sydulu, S. S. J. (2017, November). Safe and high secured ranked keyword searchover an outsourced cloud data. In 2017 International

Conference on Inventive Computing and Informatics (ICICI) (pp. 20-25). IEEE.

[6] K. K. Kommineni, S. J. Basha, M. Sandeep, P. S. Vadana, T. S. R. Sai and D. S. Kumar, "A Review on IoT-based Defensive Devices for Women Security," 2023 9th International Conference on Advanced Computing and Communication Systems (ICACCS), Coimbatore, India, 2023, pp. 99-104, doi: 10.1109/ICACCS57279.2023.10113015.

[7] Vellela, S. S., & Balamanigandan, R. (2024). Optimized clustering routing framework to maintain the optimal energy status in the wsn mobile cloud environment. Multimedia Tools and Applications, 83(3), 7919-7938.

[8] Vellela, S. S., & Balamanigandan, R. (2023). An intelligent sleep-awake energy management system for wireless sensor network. Peer-to-Peer Networking and Applications, 16(6), 2714-2731.

[9] Vellela, S. S., & Balamanigandan, R. (2022, December). Design of Hybrid Authentication Protocol for High Secure Applications in Cloud Environments. In 2022 International Conference on Automation, Computing and Renewable Systems (ICACRS) (pp. 408-414). IEEE.

[10] Vellela, S. S., Balamanigandan, R., & Praveen, S. P. (2022). Strategic survey on security and privacy methods of cloud computing environment. Journal of Next Generation Technology, 2(1).

[11] Reddy, N. V. R. S., Chitteti, C., Yesupadam, S., Desanamukula, V. S., Vellela, S. S., & Bommagani, N. J. (2023). Enhanced Speckle Noise Reduction in Breast Cancer Ultrasound Imagery Using a Hybrid Deep Learning Model. Ingenierie des Systemes d'Information, 28(4), 1063.

[12] Vellela, S. S., & Balamanigandan, R. (2024). An efficient attack detection and prevention approach for secure WSN mobile cloud environment. Soft Computing, 28(19), 11279-11293.

[13] Polasi, P. K., Vellela, S. S., Narayana, J. L., Simon, J., Kapileswar, N., Prabu, R. T., & Rashed, A. N. Z. (2026). Data rates transmission, operation performance speed and figure of merit signature for various quadurature light sources under spectral and thermal effects. Journal of Optics, 55(1), 633-643.

[14] Vellela, S. S., & Krishna, A. M. (2020). On Board Artificial Intelligence With Service Aggregation for Edge Computing in Industrial Applications. Journal of Critical Reviews, 7(07).

[15] Vellela, S. S., Rao, M. V., Mantena, S. V., Reddy, M. J., Vatambeti, R., & Rahman, S. Z. (2024). Evaluation of Tennis Teaching Effect Using Optimized DL Model with Cloud Computing System. International Journal of Modern Education and Computer Science (IJMECS), 16(2), 16-28.

[16] Biyyapu, N., Veerapaneni, E. J., Surapaneni, P. P., Vellela, S. S., & Vatambeti, R. (2024). Designing a modified feature aggregation model with hybrid sampling techniques for network intrusion detection. Cluster Computing, 27(5), 5913-5931.

[17] Vuyyuru, L. R., Purimetla, N. R., Reddy, K. Y., Vellela, S. S., Basha, S. K., & Vatambeti, R. (2025). Advancing automated street crime detection: a drone-based system integrating CNN models and enhanced feature selection techniques. International Journal of Machine Learning and Cybernetics, 16(2), 959-981.

[18] Praveen, S. P., Vellela, S. S., & Balamanigandan, R. (2024). SmartIris ML: harnessing machine learning for enhanced multi-biometric authentication. Journal of Next Generation Technology (ISSN: 2583-021X), 4(1).

[19] Vellela, S. S., Roja, D., Purimetla, N. R., Thalakola, S., Vuyyuru, L. R., & Vatambeti, R. (2025). Cyber threat detection in industry 4.0: Leveraging GloVe and self-attention mechanisms in BiLSTM for enhanced intrusion detection. Computers and Electrical Engineering, 124, 110368.

[20] Vellela, S. S., Varshini, K., Jeevana, M., Kadheer, S. K., & Kumar, T. P. (2024). Iot based smart irrigation and controlling system. IoT Based Smart Irrigation and Controlling System, International Journal for Modern Trends in Science and Technology, 10(02), 77-85.

[21] Vellela, S. S., Manne, V. K., Trividha, G., Chaithanya, L., & Shaik, A. (2025). Intelligent transportation systems ai and iot for sustainable urban traffic management. Available at SSRN 5250812.

[22] Vindhya, A. S., Vellela, S. S., Malathi, N., Vullam, N. R., Vuyyuru, L. R., & Rao, T. (2025, September). Integrating Quantum Computing with Genomic Data Analysis: A Next-Generation Approach for Predicting Disease Susceptibility. In 2025 4th International Conference on Innovative Mechanisms for Industry Applications (ICIMIA) (pp. 1168-1173). IEEE.

[23] Vellela, S. S., Rao, M. V., Krishna, C. V. M., Rao, T. S., & Dasthavejula, R. (2026). Piezoelectric and Shape-Memory Materials for Actuators and Energy Harvesting in Mechanical, Electronics, and Biomedical Engineering Using AI-Based Design. In Advanced Materials for Biomedical Devices (pp. 195-206). CRC Press.

[24] Vellela, S. S., Malathi, N., Vuyyuru, L. R., Javvadi, S., Rao, T. S., Bindu, M. N. H., & Rao, K. N. (2025, August). Improving Medical Image Analysis with Convolutional Neural Networks (Cnns). In 2025 International Conference on Intelligent and Secure Engineering Solutions (CISES) (pp. 579-584). IEEE.

[25] Roja, D., Jidugu, S. K., Rao, T. S., Vuyyuru, L. R., Vellela, S. S., & Ranjani, B. S. (2025, December). High-Fidelity Image Synthesis using Enhanced Generative Adversarial Networks with Attention Mechanisms. In 2025 International Conference on NexGen Networks and Cybernetics (IC2NC) (pp. 885-890). IEEE.

[26] Pakalapati, S., Rani, C. J., Vellela, S. S., Thanuja, N., & Bindu, M. N. H. (2025, November). Progressive GAN-based Framework for Realistic Image Generation and Style Transfer. In 2025 5th International Conference on Evolutionary Computing and Mobile Sustainable Networks (ICECMSN) (pp. 474-479). IEEE.

[27] Yanamadala, N., & Vellela, S. S. (2025, June). Ensuring Authenticity and Confidentiality in Images using SHA-ECC Fusion. In 2025 Second International Conference on Networks and Soft Computing (ICNSoC) (pp. 684-689). IEEE.

[28] Rao, M. V., Sreeraman, Y., Mantena, S. V., Gundu, V., Roja, D., & Vatambeti, R. (2024). Brinjal Crop yield prediction using Shuffled shepherd optimization algorithm based ACNN-OBDLSTM model in Smart Agriculture. Journal of Integrated Science and Technology, 12(1), 710-710.

[29] Reddy, B. V., Kumar, A. H., Gopi, C., Prasad, Y. V. D., Vellela, S. S., & Roja, D. (2025, April). Machine learning based automated liver fibrosis stage diagnosis with prediction. In 2025 International Conference on Advances in Modern Age Technologies for Health and Engineering Science (AMATHE) (pp. 1-6). IEEE.

[30] Burra, R. S., APCV, G. R., & Vellela, S. S. (2024). Enhancing Ddos Detection Through Semi-Supervised Machine Learning: A Novel Approach for Improved Network Security. International Research Journal of Modernization in Engineering Technology and Science, 6.

[31] Vellela, S. S., Vullam, N. R., Gorintla, S., Rao, T. S., & Harinadh, T. (2025, July). Exploring the Anti-Inflammatory Potential of Green-Synthesized Pyrazolines. In 2025 6th International Conference on Data Intelligence and Cognitive Informatics (ICDICI) (pp. 814-819). IEEE.

[32] Vellela, S. S., Chandra, S. S., Thommandru, R., Mastan Basha, S., & Sri Ram, D. (2023). Novel Approach to Mitigate Starvation in Wireless Mesh Networks. Available at SSRN 5262254.

[33] Praveen, S. P., Vellela, S. S., Sharma, K., & Dalavai, L. Quantitative Evaluation of Smart Textile Adoption in Rural Weaving Communities using Machine Learning. Journal of the Textile Association, 86(3), 277-284.

[34] Mandava, R., Dalavai, L., Vellela, S. S., Purimetla, N. R., Mohan, B. K., & Harinadh, T. (2025, June). An In-Depth Study on the Integration of Explainable AI Techniques to Enhance

Interpretability in Clinical Risk Prediction Models. In 2025 Second International Conference on Networks and Soft Computing (ICNSoC) (pp. 43-47). IEEE.
[35] Rao, M. V., Krishna, C. V. M., Vellela, S. S., Vara, J., Paul, K. J., & Rao, K. N. (2025, March). Enhancement and Blind Image Restoration for Quality Improvements of Camera Captured Pictures/Videos. In 2025 7th International Conference on Intelligent Sustainable Systems (ICISS) (pp. 791-796). IEEE.
[36] Vellela, S. S., Anusha, P., Vullam, N. R., Jala, J., Bellapu, V. S., & Vindhya, A. S. (2025, October). Quantum Cryptography and Key Distribution for Secure Communication in the Post Quantum World. In 2025 International Conference on Sustainable Communication Networks and Application (ICSCN) (pp. 619-624). IEEE.
[37] Vellela, S. S., Vuyyuru, L. R., Jidugu, S. K., Rao, M. P., & Srinivas, B. R. (2025, November). The Impact Of Quantum Computing On Blockchain Security And Quantum Resistant Protocols. In 2025 2nd International Conference on Intelligent Systems for Cybersecurity (ISCS) (pp. 1-6). IEEE.
[38] Kumar, M. S., Vellela, S. S., Gorintla, S., Malathi, N., Rao, T. S., & Rani, N. R. (2025, October). Intelligent Resource Allocation in Wireless Sensor Networks: A Hybrid Optimization Approach for Energyconstrained Environments. In 2025 2nd International Conference on Electronic Circuits and Signaling Technologies (ICECST) (pp. 724-729). IEEE.
[39] Krishna, T. V., Rani, N. R., Ranjani, B. S., & Vellela, S. S. (2025). Distributed Big-Data Analytics with PySpark for Personalized Restaurant Recommendation Systems. Journal of Next Generation Technology (ISSN: 2583-021X), 5(6).
[40] Harinadh, T., Anusha, P., Roja, D., Vellela, S. S., & Muthukumar, P. (2025). PySpark Orchestrated Machine Learning Paradigms for Advanced Network Intrusion Detection. Journal of Next Generation Technology (ISSN: 2583-021X), 5(6).
[41] Mandava, R., Haritha, K., Vellela, S. S., Purimetla, N. R., Mohan, B. K., & Harinadh, T. (2025, June). Analysing User Perceptions of Trust in Financial Systems Using Explainable AI. In 2025 Second International Conference on Networks and Soft Computing (ICNSoC) (pp. 26-30). IEEE.
[42] Burra, R. S., APCV, G. R., & Vellela, S. S. (2024). Strategic Insights: Unleashing the Power of Big Data Analytics for Credit Investigation and Risk Mitigation in Commercial Banking. International Journal of Progressive Research in Engineering Management and Science, 4(01), 458-464.
[43] Vellela, S. S., Purimetla, N. R., Vindhya, A. S., Vullam, N. R., Srinivas, B. R., & Vuyyuru, L. R. (2025, October). Design and Simulation of Quantum Error Correction Codes for Scalable Quantum Architectures. In 2025 7th International Conference on Innovative Data Communication Technologies and Application (ICIDCA) (pp. 1570-1575). IEEE.
[44] Devana, V. K. R., Beno, A., Devadoss, C. P., Sukanya, Y., Ravi Sankar, C. V., Balamuralikrishna, P., ... & Babu, K. V. (2024). A compact self isolated MIMO UWB antenna with band notched characteristics. IETE Journal of Research, 70(8), 6677-6688.
[45] Potti, Dr Balamuralikrishna. "Characteristic Mode Analysis of Two Port Semi-circular Arc-Shaped Multiple-Input-Multiple-Output Antenna With High Isolation for 5G Sub-6 GHz and Wireless Local Area Network Applications." Int J Commun Syst (2022): e5257.
[46] Srija, V., & Krishna, P. B. M. (2015). Implementation of agricultural automation system using web & gsm technologies. International Journal of Research in Engineering and Technology, 4(09), 385-389.
[47] Potti, B., Subramanyam, M. V., & Prasad, K. S. (2013). A packet priority approach to mitigate starvation in wireless mesh network with multimedia traffic. International Journal of Computer Applications, 62(14).
[48] Potti, B., Subramanyam, M. V., & Satya Prasad, K. (2016). Adopting Multi-radio Channel Approach in TCP Congestion Control Mechanisms to Mitigate Starvation in Wireless Mesh Networks. In Information Science and Applications (ICISA) 2016 (pp. 85-95). Springer Singapore.
[49] Potti, D. B., MV, D. S., & Kodati, D. S. P. (2015). Hybrid genetic optimization to mitigate starvation in wireless mesh networks. Hybrid Genetic Optimization to Mitigate Starvation in Wireless Mesh Networks, Indian Journal of Science and Technology, 8(23).
[50] Devana, V. K. R., Beno, A., Alzaidi, M. S., Krishna, P. B. M., Divyamrutha, G., Awan, W. A., ... & Alathbah, M. (2024). A high bandwidth dimension ratio compact super wide band-flower slotted microstrip patch antenna for millimeter wireless applications. Heliyon, 10(1).
[51] Doss, B., Balamuralikrishna, P., Nagaraju, C. H., Lakshmaiah, D., & Naresh, S. Blockchain-Based Secure Big Data Storage on the Cloud. In Blockchain Technology for IoT and Wireless Communications (pp. 11-18). CRC Press.
[52] Kapileswar, N. and Simon, J., 2025, October. A Hybrid Acoustic-Optical Communication Technique for Ultra-Low Latency Underwater IoT Network. In 2025 2nd International Conference on Electronic Circuits and Signaling Technologies (ICECST) (pp. 468-473). IEEE.
[53] Simon, J. and Kapileswar, N., 2025, June. Federated deep learning-driven cloud-IoT framework for real-time healthcare monitoring and privacy-preserving anomaly detection. In 2025 3rd International Conference on Self Sustainable Artificial Intelligence Systems (ICSSAS) (pp. 1866-1871). IEEE.
[54] Kapileswar, N. and Simon, J., 2025, June. Quantum-Resilient Consensus Mechanisms for Scalable Blockchain Networks using Lattice-based Cryptography. In 2025 6th International Conference on Intelligent Communication Technologies and Virtual Mobile Networks (ICICV) (pp. 1849-1854). IEEE.
[55] Kapileswar, N. and Simon, J., 2025, August. DeepCurrent: An Attention-Driven Graph Neural Network for Energy-Efficient Routing and Data Aggregation in UIoT Networks. In 2025 International Conference on Modern Sustainable Systems (CMSS) (pp. 716-720). IEEE.
[56] Sathish, K., 2025, February. Dynamic Topology Optimizing Magnetic Circuits for Underwater Systems for Improved Performance and Efficiency. In 2025 International Conference on Electronics and Renewable Systems (ICEARS) (pp. 433-438). IEEE.
[57] Sathish, K., 2025, September. Adaptive Fusion and Feature Refinement for Visibility Enhancement in Turbid Underwater Scenes. In 2025 3rd International Conference on Intelligent Cyber Physical Systems and Internet of Things (ICoICI) (pp. 456-460). IEEE.
[58] D. N. Ravikiran and C. G. Dethe, "Improvements in routing algorithms to enhance lifetime of wireless sensor networks," Int. J. Comput. Netw. Commun., vol. 10, no. 2, pp. 23–32, 2018.
[59] R. Thommandru and R. Saravanakumar, "Performance analysis of circularly polarised MIMO antenna for wireless applications," in Proc. ICICNIS, IEEE, Dec. 2024, pp. 513–518.
[60] D. N. Ravikiran et al., "Secure visual data processing: Image encryption and decryption through reversible logic gates in VLSI design," Int. J. Mod. Trends Sci. Technol., vol. 10, no. 2, 2024.
[61] R. Saravanakumar et al., "Cross scoop fractal antenna design with notch at 15 degree for emerging applications at 5.2 GHz," in Proc. RAEEUCCI, IEEE, Apr. 2024, pp. 1–7.