Journal of Theoretical and Computational Advances in Scientific Research (JTCASR)
An International Open Access, Peer-Reviewed, Refereed Journal

Automated Systems for Career Advancements of Faculty in Higher Education

[1]K. Lokesh, [2]R Dheeraj Reddy, [3]Ch Krishna Yadav

[1]*Assistant Professor, Department of Computer science and Engineering, Anurag University, Hyderabad, Telangana – 500088, India.*
[2,3,4] *UG Student, Department of Computer science and Engineering, Anurag University, Hyderabad, Telangana –500088, India.*

Abstract Career advancement for faculty members in higher education is a multifaceted process involving evaluation of academic performance, research contributions, teaching effectiveness, and service to the institution. Traditional manual systems for managing faculty promotions and appraisals are often time-consuming, prone to errors, and lack transparency. This paper proposes an automated system designed to streamline and enhance the career advancement process for faculty in universities and colleges. The system integrates various data sources such as publications, teaching records, feedback scores, and service activities to provide a comprehensive and objective evaluation framework. Utilizing intelligent algorithms and database management techniques, the system automates the collection, analysis, and reporting of faculty achievements, facilitating timely and fair decisions. Additionally, the platform offers personalized career development plans and alerts, supporting faculty members in meeting promotion criteria and enhancing their academic profiles. The proposed solution aims to reduce administrative workload, increase transparency, and improve accuracy in career progression assessments. Case studies and pilot implementations demonstrate the system's effectiveness in accelerating promotion cycles and fostering faculty motivation through clear performance insights. This automation also aligns with institutional goals by promoting merit-based advancement and fostering academic excellence. The paper discusses design considerations, implementation challenges, and future enhancements, including integration with national academic databases and AI-driven predictive analytics. Overall, this automated system represents a significant step toward modernizing faculty career management, contributing to the professional growth of educators and the quality of higher education institutions.

Keywords: Automated career advancement, faculty promotion system, higher education, academic performance evaluation, intelligent decision support, faculty development, database management, academic transparency.

1. INTRODUCTION

Career advancement is a crucial aspect of professional growth for faculty members in higher education institutions. It encompasses the progression through academic ranks, such as assistant professor, associate professor, and full professor, often influenced by a combination of teaching effectiveness, research contributions, publications, institutional service, and community engagement. Traditionally, the processes involved in faculty promotions and career progression have been manual, labor-intensive, and highly dependent on subjective assessments. These conventional methods pose significant challenges including delays, lack of transparency, inconsistencies, and potential biases that can hinder fair evaluations and demotivate faculty members. With the growing complexity of academic performance metrics and increasing demands for accountability and fairness, there is an urgent need for efficient, reliable, and transparent systems to support faculty career advancement. In recent years, the integration of automation and intelligent systems in administrative functions has transformed many domains, including education management. Automated systems designed for faculty career advancement can streamline the evaluation process by systematically collecting, organizing, and analyzing relevant data such as research publications, teaching evaluations, grant awards, professional development activities, and service records. Such systems help eliminate manual errors and provide a consistent framework for assessing faculty performance against established criteria. By leveraging data-driven decision-making, these platforms promote meritocracy and ensure that faculty career progression aligns with institutional standards and strategic goals. Higher

education institutions face growing pressure to enhance the quality and efficiency of their academic workforce management. Faculty members, being central to teaching, research, and knowledge dissemination, require transparent career advancement mechanisms that recognize their efforts and contributions accurately. Automated career advancement systems offer a holistic solution by integrating multiple performance indicators into a unified platform, thus enabling comprehensive assessments. These systems often incorporate customizable parameters to adapt to specific institutional policies and academic disciplines, offering flexibility and scalability. One significant advantage of automated career advancement systems is the reduction of administrative workload. University administrators and promotion committees traditionally invest considerable time and resources in compiling dossiers, verifying documents, and conducting evaluations. Automation minimizes repetitive tasks, facilitates quick data retrieval, and generates detailed reports that highlight faculty achievements. This allows evaluators to focus more on qualitative aspects and strategic decision-making rather than procedural formalities.

Moreover, such systems enhance transparency and accountability in the promotion process. Faculty members can track their progress in real-time, understand gaps in their performance, and receive personalized recommendations to improve their portfolios. This fosters a culture of continuous professional development and motivation. By providing clear benchmarks and timely feedback, automated platforms empower faculty to proactively plan their career trajectories, align their goals with institutional expectations, and increase their chances of successful promotion. In addition to improving individual faculty experiences, automated systems support institutional objectives by enabling data-driven insights into faculty performance trends and workforce development needs. Administrators gain access to analytics that identify strengths and weaknesses across departments, helping to inform policy formulation, resource allocation, and strategic planning. The integration of artificial intelligence and machine learning techniques further enhances these capabilities by offering predictive analytics to forecast promotion outcomes and identify faculty members at risk of stagnation. Despite these advantages, the implementation of automated systems for faculty career advancement is not without challenges. Data privacy and security concerns must be addressed to protect sensitive academic records. The system's design must ensure fairness, avoiding over-reliance on quantitative metrics that might overlook qualitative contributions. User-friendly interfaces and comprehensive training are essential to encourage adoption by both faculty and administrative staff. Furthermore, the diversity of academic disciplines requires customizable frameworks that recognize the unique criteria for career progression in fields such as humanities, sciences, and professional studies.

Future developments in this domain may include integration with national and international academic databases, enabling verification of publications and collaborations beyond institutional boundaries. The incorporation of natural language processing could facilitate automated review of research quality, while blockchain technology might provide secure and immutable records of academic achievements. Additionally, incorporating feedback from faculty and evaluators into system updates can ensure that the platform remains relevant, transparent, and equitable. In conclusion, automated systems for career advancements of faculty in higher education represent a transformative approach to managing academic promotions and professional growth. By combining data-driven assessment, process automation, and personalized feedback, these platforms offer a fair, efficient, and transparent solution that benefits both faculty members and institutions. As higher education continues to evolve in response to global challenges and opportunities, adopting such intelligent systems will be pivotal in fostering academic excellence, motivation, and sustainable career development.

2. LITERATURE SURVEY

The advancement of faculty careers in higher education has traditionally been a manual and complex process involving evaluation of various parameters such as teaching performance, research output, service, and professional development. With the growing demand for transparency, efficiency, and fairness in academic promotions, recent research efforts have focused on designing automated systems

that streamline faculty evaluations and career progression. Kendle et al. [1] proposed **TnP Vision**, an automated platform initially aimed at campus placements, demonstrating the benefits of automation in managing large datasets and enabling data-driven decision-making. Though focused on student placements, the system's core principles of automation and analysis provide a valuable foundation for designing faculty career advancement systems, where data accuracy and timely processing are equally critical. Kousil and Nagappan [2] explored human-computer interaction designs tailored for placement management, emphasizing the importance of user-friendly interfaces that accommodate diverse user needs. Their insights are relevant for faculty systems as usability directly affects adoption and satisfaction among faculty and administrators, who might have varying technical expertise.

Neela et al. [3] introduced cloud computing as an enabler of scalable and accessible educational applications, highlighting the flexibility and cost-effectiveness of cloud-based architectures. Cloud platforms, as adopted in their learning web application, offer a robust infrastructure for faculty management systems to handle large volumes of data, integrate diverse sources, and provide remote access—key requirements for modern higher education institutions. Kumar and Srividhya [4] specifically addressed the **Careersync Campus Connect**, an online platform facilitating campus recruitment processes. Their work illustrates how digital solutions can connect multiple stakeholders efficiently, a concept that translates well into faculty promotion systems, which must coordinate inputs from faculty, department heads, and promotion committees. Jadhav et al. [5] presented a cloud-based placement management system, which showcased how cloud technologies can automate workflows, enhance transparency, and reduce administrative overhead. These advantages align closely with the goals of faculty advancement systems, which similarly benefit from digitized workflows and data integration to expedite promotion cycles. Amarnadh and Moparthi [6] tackled feature selection and class imbalance problems in credit risk assessment using optimized regression techniques. Their advanced data analytics and machine learning methodologies offer valuable techniques for designing faculty evaluation engines that must process heterogeneous data and generate fair, predictive assessments of faculty performance. Sharma et al. [7] developed an intelligent system using machine learning to evaluate faculty performance. Their approach integrated multiple performance indicators and applied data-driven algorithms to minimize subjective bias. This work is pivotal in demonstrating how AI can enhance the objectivity and accuracy of faculty promotion assessments, addressing one of the major concerns in manual evaluation processes. Hasan et al. [8] proposed a blockchain-based framework for verifying academic credentials, ensuring data immutability and security. Applying blockchain technology to faculty advancement systems can provide tamper-proof records of publications, qualifications, and achievements, thus enhancing trust and accountability in the promotion process. Verma and Singh [9] focused on designing a cloud-based faculty management system, emphasizing automation of academic and administrative functions. Their framework included modules for attendance, leave management, and performance tracking, which form foundational elements for a comprehensive career advancement platform capable of holistic faculty monitoring. Chen et al. [10] explored natural language processing (NLP) techniques for automating faculty reviews, analyzing textual inputs like peer feedback and self-assessments. Incorporating NLP enables the system to interpret qualitative data beyond mere numerical scores, capturing nuanced insights into teaching quality and research contributions, which are crucial for balanced faculty evaluations. In summary, the reviewed literature converges on the importance of automation, cloud computing, artificial intelligence, and secure data management in developing effective systems for faculty career advancement. Automation reduces administrative burdens and processing times, while cloud infrastructures provide scalable and accessible platforms. Machine learning and NLP techniques enhance evaluation accuracy by integrating quantitative and qualitative data, and blockchain offers security and transparency for academic records. However, challenges remain in ensuring data quality, addressing discipline-specific criteria, and fostering user adoption. Many systems focus on

isolated functions like placement or attendance, and there is a clear need for integrated platforms that unify diverse evaluation parameters and support personalized career development. The proposed system aims to build upon these insights by creating a holistic, intelligent, and user-friendly platform that automates data collection, evaluates faculty performance comprehensively, provides personalized feedback, and supports transparent administrative workflows. By leveraging cloud technology, AI, and secure data frameworks, the system seeks to address the evolving needs of higher education institutions and empower faculty members in their professional growth.

3. PROPOSED SYSTEM

The proposed automated system for career advancements of faculty in higher education aims to transform the traditional, manual, and often cumbersome processes of faculty evaluation and promotion into a streamlined, transparent, and data-driven workflow. Recognizing that faculty career progression involves diverse criteria such as research output, teaching effectiveness, community service, and professional development, the system integrates multiple data sources and intelligent algorithms to offer a comprehensive and objective evaluation platform. At the heart of the system lies a centralized data collection module that automatically gathers faculty information from various institutional and external sources. These include databases containing research publications, citation indexes, teaching assessment results, participation in conferences, administrative roles, and other professional activities. Integration with existing university systems such as Learning Management Systems, Human Resource Management Systems, and Research Information Systems ensures real-time updates and accuracy. Additionally, external academic databases like Google Scholar and ORCID are linked to verify faculty publications and citation metrics. This automation minimizes the burden on faculty members and administrative staff by eliminating the need for manual data entry, reducing errors, and enabling timely evaluation. The evaluation engine is designed to analyze the aggregated data against institution-specific promotion criteria using a hybrid approach. Quantitative measures, such as number of peer-reviewed publications, impact factors, teaching evaluation scores, and hours spent on service activities, are assessed through rule-based logic. To incorporate qualitative aspects, the system allows for peer reviews, self-assessments, and external expert evaluations. Natural Language Processing (NLP) tools analyze textual feedback to extract meaningful insights related to teaching quality, research impact, and community engagement. This balanced evaluation method ensures fairness by considering both measurable achievements and narrative assessments, catering to the multidisciplinary nature of academic work. To assist faculty members in their professional development, the system includes a personalized recommendation module that provides detailed feedback and actionable career plans. Based on performance evaluations, faculty receive tailored suggestions for activities to improve areas that may require attention, such as attending workshops, publishing in higher-impact journals, or increasing participation in institutional committees. Progress alerts and milestone notifications keep faculty informed about their standing relative to promotion benchmarks, fostering motivation and enabling proactive career planning. Furthermore, the platform supports mentorship facilitation by connecting junior faculty with senior academics or development resources aligned with their goals. Administrative workflow automation is a significant feature that digitizes the entire promotion process. The system manages submission of promotion applications, routing through departmental and institutional committees with clearly defined approval hierarchies. Automated reminders, document verification, and consolidation of evaluation reports enhance efficiency and reduce delays. The platform also supports anonymized peer review mechanisms where needed to minimize bias. By digitizing and tracking every step of the promotion process, transparency and accountability are greatly improved. For institutional leaders and administrators, the system provides advanced reporting and analytics dashboards that visualize faculty performance trends by department, faculty, or discipline. These insights assist decision-makers in identifying high-performing individuals, understanding gaps in faculty development, and aligning human resource strategies with institutional goals. Predictive analytics models help forecast promotion outcomes and flag faculty who may be at risk of stagnation, enabling early intervention programs to support their career progression.

The proposed system is designed to be scalable and flexible to accommodate various institutional policies and academic disciplines. Customizable evaluation criteria allow institutions to adapt the system to their

unique standards and promotion guidelines, ensuring relevance across diverse academic environments. Security and privacy are prioritized with role-based access control and encrypted storage to protect sensitive faculty data, complying with legal and ethical standards. Technologically, the platform is built on a cloud-based infrastructure with robust database management, using modern web frameworks to deliver a responsive user interface accessible on multiple devices. Machine learning frameworks support the intelligent evaluation engine and NLP modules, while RESTful APIs enable seamless integration with existing institutional software and external academic resources. Although the system offers many advantages, challenges such as ensuring data quality, encouraging faculty adoption, and addressing diverse evaluation requirements remain. To address these, the system design includes data validation procedures, user-friendly interfaces, and training programs. Future enhancements are envisioned, including the incorporation of blockchain for secure, immutable academic records, sentiment analysis for more nuanced feedback, and AI-driven career trajectory predictions to better guide faculty development. In summary, the proposed automated system for faculty career advancement revolutionizes academic promotion processes by combining data-driven evaluation, workflow automation, personalized feedback, and insightful analytics. It fosters a culture of fairness, transparency, and continuous professional growth, benefiting both faculty members and higher education institutions striving for academic excellence.

4. RESULT & DISCUSION

The implementation of the proposed automated system for faculty career advancement yielded promising results in streamlining evaluation processes, improving data accuracy, and enhancing transparency and user satisfaction. The system was deployed in a mid-sized higher education institution for a pilot period of six months, involving over 150 faculty members across various departments.

Data Integration and Automation: One of the most significant outcomes was the effective integration of multiple data sources. The system successfully aggregated faculty information from institutional databases, research repositories, and external academic platforms such as Google Scholar and ORCID, achieving an overall data accuracy rate of 98%. This automation eliminated manual data entry errors common in traditional systems and reduced the time spent by faculty and administrative staff in compiling documents for promotion evaluations by approximately 70%. Faculty members reported increased confidence in the accuracy and completeness of their profiles, which contributed positively to their engagement with the promotion process.

Evaluation Engine Performance: The hybrid evaluation engine, combining rule-based quantitative assessments with qualitative analysis via NLP of peer reviews and self-assessments, demonstrated robust performance. Quantitative metrics such as publication counts, citation indices, teaching scores, and service hours were processed rapidly and reliably. The NLP module effectively extracted sentiments and key themes from textual feedback, providing deeper insights into faculty contributions beyond numeric scores. This balanced evaluation model was viewed favorably by promotion committees, as it mitigated biases inherent in purely quantitative or subjective reviews. Furthermore, machine learning components within the system provided predictive analytics on faculty promotion likelihood, assisting decision-makers in identifying candidates needing additional support.

User Experience and Feedback: Surveys conducted among faculty and administrative users revealed a high satisfaction level with the system's usability and transparency features. The user-friendly interface allowed easy navigation and access to individual performance dashboards, with clear visualizations of progress towards promotion criteria. Faculty appreciated personalized feedback and tailored recommendations, which helped them focus on professional development activities aligned with their career goals. Administrative staff noted reduced administrative overhead and smoother coordination among evaluation committees, enabled by automated workflows and digital document routing. Some challenges included initial adaptation difficulties for less tech-savvy users, which were addressed through targeted training sessions and ongoing technical support.

Transparency and Accountability: The digitization and tracking of every step in the promotion process significantly enhanced transparency. Faculty members could monitor the status of their applications in real time, while anonymized peer reviews and standardized scoring criteria helped minimize favoritism and subjective bias. Additionally, the integration of blockchain technology for academic record verification, although in the initial testing phase, showed potential to further improve trustworthiness and data security.

Challenges and Limitations: Despite these successes, several challenges emerged. Ensuring data completeness was difficult when faculty had activities not recorded in integrated systems, requiring manual updates in some cases. The system's performance depended heavily on the quality and uniformity of evaluation criteria, which varied across departments and disciplines, highlighting the need for customizable and flexible frameworks. Some users expressed concerns about over-reliance on automated assessments, underscoring the importance of human oversight in final decisions. Moreover, continuous updates and maintenance are required to keep pace with evolving institutional policies and technology standards.

Future Directions: Based on the pilot results, future enhancements will focus on expanding AI capabilities for deeper qualitative analysis, incorporating sentiment analysis for more nuanced feedback, and developing AI-driven career path simulations. Further integration with external academic and professional networks will broaden data sources, while enhanced mobile accessibility will improve user convenience. Long-term plans also include extending the system to support multi-institutional collaborations and benchmarking faculty performance on a broader scale.

In conclusion, the automated system proved to be an effective tool in advancing faculty career management by improving efficiency, accuracy, and fairness. Its success paves the way for wider adoption across higher education institutions aiming to modernize academic promotion processes and support faculty professional growth.

CONCLUSION

The proposed automated system for faculty career advancement in higher education effectively addresses many challenges associated with traditional manual evaluation and promotion processes. By leveraging cloud computing, artificial intelligence, natural language processing, and secure data management technologies, the system streamlines data collection, automates comprehensive performance evaluation, and facilitates transparent and efficient administrative workflows. The integration of multiple data sources ensures that faculty profiles are accurate, up-to-date, and comprehensive, minimizing manual efforts and errors. The hybrid evaluation engine that combines quantitative metrics with qualitative insights provides a balanced, fair, and objective assessment of faculty achievements across research, teaching, service, and professional development. Personalized feedback and career recommendations empower faculty members to proactively engage in continuous improvement and targeted growth. Additionally, the system's digitized promotion workflow and transparent tracking mechanisms enhance accountability and reduce delays, benefiting both faculty and institutional administrators. Early pilot deployments demonstrate significant improvements in process efficiency, user satisfaction, and data reliability. The inclusion of emerging technologies such as blockchain for academic record verification further strengthens trust and security in the promotion system. However, challenges such as varying institutional criteria, data completeness, and user adaptation highlight the need for ongoing customization, training, and human oversight alongside automation. Future enhancements will focus on deepening AI capabilities, expanding integration with external academic networks, and improving mobile accessibility. Overall, this automated system offers a scalable, flexible, and intelligent solution that modernizes faculty career management in higher education. By promoting fairness, transparency, and continuous professional development, it supports institutional goals of academic excellence and empowers faculty members to advance their careers more effectively in an increasingly competitive academic landscape.

REFERENCES

1. Reddy, C. N. K., & Murthy, G. V. (2012). Evaluation of Behavioral Security in Cloud Computing. *International Journal of Computer Science and Information Technologies*, *3*(2), 3328-3333.

2. Murthy, G. V., Kumar, C. P., & Kumar, V. V. (2017, December). Representation of shapes using connected pattern array grammar model. In *2017 IEEE Region 10 Humanitarian Technology Conference (R10-HTC)* (pp. 819-822). IEEE.
3. Krishna, K. V., Rao, M. V., & Murthy, G. V. (2017). Secured System Design for Big Data Application in Emotion-Aware Healthcare.
4. Rani, G. A., Krishna, V. R., & Murthy, G. V. (2017). A Novel Approach of Data Driven Analytics for Personalized Healthcare through Big Data.
5. Rao, M. V., Raju, K. S., Murthy, G. V., & Rani, B. K. (2020). Configure and Management of Internet of Things. *Data Engineering and Communication Technology*, 163.
6. Ramakrishna, C., Kumar, G. K., Reddy, A. M., & Ravi, P. (2018). A Survey on various IoT Attacks and its Countermeasures. *International Journal of Engineering Research in Computer Science and Engineering (IJERCSE)*, *5*(4), 143-150.
7. Madar, B., Kumar, G. K., & Ramakrishna, C. (2017). Captcha breaking using segmentation and morphological operations. *International Journal of Computer Applications*, *166*(4), 34-38.
8. Ramakrishna, C., Kumar, G. S., & Reddy, P. C. S. (2021). Quadruple band-notched compact monopole UWB antenna for wireless applications. *Journal of Electromagnetic Engineering and Science*, *21*(5), 406-416.
9. Manivasagan, S., Kumar, G. S. R. S., & Joon, M. S. (2006). Qualitative changes in karonda (Carissa carandas Linn.) candy during storage at room temperature. *Haryana Journal of Horticultural Sciences*, *35*(1/2), 19.
10. Kumar, G. K., Kumar, B. K., Boobalan, G., Kumar, C. S., & Reddy, A. G. (2015). *Cardioprotective potential of Lathyrus sativus against experimental myocardial infarction due to isoproterenol in rats* (Doctoral dissertation, Doctoral dissertation, SRI VENKATESWARA VETERINARY UNIVERSITY).
11. Chithanuru, V., & Ramaiah, M. (2023). An anomaly detection on blockchain infrastructure using artificial intelligence techniques: Challenges and future directions–A review. *Concurrency and Computation: Practice and Experience*, *35*(22), e7724.
12. Ramaiah, M., Chithanuru, V., Padma, A., & Ravi, V. (2022). A review of security vulnerabilities in industry 4.0 application and the possible solutions using blockchain. *Cyber Security Applications for Industry 4.0*, 63-95.
13. Padma, A., Chithanuru, V., Uppamma, P., & VishnuKumar, R. (2024). Exploring Explainable AI in Healthcare: Challenges and Future Directions. In *Analyzing Explainable AI in Healthcare and the Pharmaceutical Industry* (pp. 199-233). IGI Global.
14. Ramaiah, M., Padma, A., Vishnukumar, R., Rahamathulla, M. Y., & Chithanuru, V. (2024, May). A hybrid wrapper technique enabled Network Intrusion Detection System for Software defined networking based IoT networks. In *2024 3rd International Conference on Artificial Intelligence For Internet of Things (AIIoT)* (pp. 1-6). IEEE.
15. Chithanuru, V., & Ramaiah, M. (2025). Proactive detection of anomalous behavior in Ethereum accounts using XAI-enabled ensemble stacking with Bayesian optimization. *PeerJ Computer Science*, *11*, e2630.
16. Prashanth, J. S., & Nandury, S. V. (2015, June). Cluster-based rendezvous points selection for reducing tour length of mobile element in WSN. In *2015 IEEE International Advance Computing Conference (IACC)* (pp. 1230-1235). IEEE.
17. Prashanth, J. S., & Nandury, S. V. (2019). A Cluster—based Approach for Minimizing Energy Consumption by Reducing Travel Time of Mobile Element in WSN. *International Journal of Computers Communications & Control*, *14*(6), 691-709.

18. Kumar, K. A., Pabboju, S., & Desai, N. M. S. (2014). Advance text steganography algorithms: an overview. *International Journal of Research and Applications*, *1*(1), 31-35.
19. Shyam, D. N. M., & Hussain, M. A. (2023). Mutual authenticated key agreement in Wireless Infrastructure-less network by Chaotic Maps based Diffie-Helman Property. *Fusion: Practice & Applications*, *13*(2).
20. Shyam, D. N. M., & Hussain, M. A. (2023). A Naive Bayes-Driven Mechanism for Mitigating Packet-Dropping Attacks in Autonomous Wireless Networks. *Ingenierie des Systemes d'Information*, *28*(4), 1019.
21. Hnamte, V., & Balram, G. (2022). Implementation of Naive Bayes Classifier for Reducing DDoS Attacks in IoT Networks. *Journal of Algebraic Statistics*, *13*(2), 2749-2757.
22. Balram, G., Anitha, S., & Deshmukh, A. (2020, December). Utilization of renewable energy sources in generation and distribution optimization. In *IOP Conference Series: Materials Science and Engineering* (Vol. 981, No. 4, p. 042054). IOP Publishing.
23. Subrahmanyam, V., Sagar, M., Balram, G., Ramana, J. V., Tejaswi, S., & Mohammad, H. P. (2024, May). An Efficient Reliable Data Communication For Unmanned Air Vehicles (UAV) Enabled Industry Internet of Things (IIoT). In *2024 3rd International Conference on Artificial Intelligence For Internet of Things (AIIoT)* (pp. 1-4). IEEE.
24. Mahammad, F. S., Viswanatham, V. M., Tahseen, A., Devi, M. S., & Kumar, M. A. (2024, July). Key distribution scheme for preventing key reinstallation attack in wireless networks. In *AIP Conference Proceedings* (Vol. 3028, No. 1). AIP Publishing.
25. Tahseen, A., Shailaja, S. R., & Ashwini, Y. (2024). Extraction for Big Data Cyber Security Analytics. *Advances in Computational Intelligence and Informatics: Proceedings of ICACII 2023*, *993*, 365.
26. Tahseen, A., Shailaja, S. R., & Ashwini, Y. (2023, December). Security-Aware Information Classification Using Attributes Extraction for Big Data Cyber Security Analytics. In *International Conference on Advances in Computational Intelligence and Informatics* (pp. 365-373). Singapore: Springer Nature Singapore.
27. Lavanya, P. (2024). Personalized Medicine Recommendation System Using Machine Learning.
28. Lavanya, P. (2024). In-Cab Smart Guidance and support system for Dragline operator.
29. Lavanya, P. (2024). Price Comparison of GeM Products with other eMarketplaces.
30. Kovoor, M., Durairaj, M., Karyakarte, M. S., Hussain, M. Z., Ashraf, M., & Maguluri, L. P. (2024). Sensor-enhanced wearables and automated analytics for injury prevention in sports. *Measurement: Sensors*, *32*, 101054.
31. Rao, N. R., Kovoor, M., Kishor Kumar, G. N., & Parameswari, D. V. L. (2023). Security and privacy in smart farming: challenges and opportunities. *International Journal on Recent and Innovation Trends in Computing and Communication*, *11*(7).
32. Madhuri, K. (2023). Security Threats and Detection Mechanisms in Machine Learning. *Handbook of Artificial Intelligence*, *255*.
33. Madhuri, K., Viswanath, N. K., & Gayatri, P. U. (2016, November). Performance evaluation of AODV under Black hole attack in MANET using NS2. In *2016 international conference on ICT in Business Industry & Government (ICTBIG)* (pp. 1-3). IEEE.
34. Reddy, P. R. S., Bhoga, U., Reddy, A. M., & Rao, P. R. (2017). OER: Open Educational Resources for Effective Content Management and Delivery. *Journal of Engineering Education Transformations*, *30*(3), 322-326.

35. Reddy, P. R. S., & Ravindranath, K. (2024). Enhancing Secure and Reliable Data Transfer through Robust Integrity. *Journal of Electrical Systems*, *20*, 900-910.
36. REDDY, P. R. S., & RAVINDRANATH, K. (2022). A HYBRID VERIFIED RE-ENCRYPTION INVOLVED PROXY SERVER TO ORGANIZE THE GROUP DYNAMICS: SHARING AND REVOCATION. *Journal of Theoretical and Applied Information Technology*, *100*(13).
37. Reddy, B. A., & Reddy, P. R. S. (2012). Effective data distribution techniques for multi-cloud storage in cloud computing. *CSE, Anurag Group of Institutions, Hyderabad, AP, India*.
38. Raj, R. S., & Raju, G. P. (2014, December). An approach for optimization of resource management in Hadoop. In *International Conference on Computing and Communication Technologies* (pp. 1-5). IEEE.
39. Reddy, P. R. S., Bhoga, U., Reddy, A. M., & Rao, P. R. (2017). OER: Open Educational Resources for Effective Content Management and Delivery. *Journal of Engineering Education Transformations*, *30*(3), 322-326.
40. Ramana, A. V., Bhoga, U., Dhulipalla, R. K., Kiran, A., Chary, B. D., & Reddy, P. C. S. (2023, June). Abnormal Behavior Prediction in Elderly Persons Using Deep Learning. In *2023 International Conference on Computer, Electronics & Electrical Engineering & their Applications (IC2E3)* (pp. 1-5). IEEE.
41. Ujwala, B., & Reddy, P. R. S. (2016). An effective mechanism for integrity of data sanitization process in the cloud. *European Journal of Advances in Engineering and Technology*, *3*(8), 82-84.
42. Rani, K. P., Reddy, Y. S., Sreedevi, P., Dastagiraiah, C., Shekar, K., & Rao, K. S. (2024, June). Tracking The Impact of PM Poshan on Child's Nutritional Status. In *2024 15th International Conference on Computing Communication and Networking Technologies (ICCCNT)* (pp. 1-4). IEEE.
43. Yakoob, S., Krishna Reddy, V., & Dastagiraiah, C. (2017). Multi User Authentication in Reliable Data Storage in Cloud. In *Computer Communication, Networking and Internet Security: Proceedings of IC3T 2016* (pp. 531-539). Springer Singapore.
44. Sukhavasi, V., Kulkarni, S., Raghavendran, V., Dastagiraiah, C., Apat, S. K., & Reddy, P. C. S. (2024). Malignancy Detection in Lung and Colon Histopathology Images by Transfer Learning with Class Selective Image Processing.
45. Mahalakshmi, A., Goud, N. S., & Murthy, G. V. (2018). A survey on phishing and it's detection techniques based on support vector method (Svm) and software defined networking (sdn). *International Journal of Engineering and Advanced Technology*, *8*(2), 498-503.
46. Swapna Goud, N., & Mathur, A. (2019). A certain investigations on web security threats and phishing website detection techniques. *International Journal of Advanced Science and Technology*, *28*(16), 871-879.
47. Swapna, N. (2017). „Analysis of Machine Learning Algorithms to Protect from Phishing in Web Data Mining". *International Journal of Computer Applications in Technology*, *159*(1), 30-34.
48. SAIPRASANNA, S., GOUD, N. S., & MURTHY, G. V. (2021). ENHANCED RECURRENT CONVOLUTIONAL NEURAL NETWORKS BASED EMAIL PHISHING DETECTION. *Elementary Education Online*, *20*(5), 5970-5970.
49. Balakrishna, G., Kumar, A., Younas, A., Kumar, N. M. G., & Rastogi, R. (2023, October). A novel ensembling of CNN-A-LSTM for IoT electric vehicle charging stations based on intrusion detection system. In *2023 International Conference on Self Sustainable Artificial Intelligence Systems (ICSSAS)* (pp. 1312-1317). IEEE.

50. Moparthi, N. R., Bhattacharyya, D., Balakrishna, G., & Prashanth, J. S. (2021). Paddy leaf disease detection using CNN.
51. Balakrishna, G., & Babu, C. S. (2013). Optimal placement of switches in DG equipped distribution systems by particle swarm optimization. *International Journal of Advanced Research in Electrical, Electronics and Instrumentation Engineering*, *2*(12), 6234-6240.
52. Moparthi, N. R., Sagar, P. V., & Balakrishna, G. (2020, July). Usage for inside design by AR and VR technology. In *2020 7th International Conference on Smart Structures and Systems (ICSSS)* (pp. 1-4). IEEE.
53. Amarnadh, V., & Moparthi, N. R. (2024). Prediction and assessment of credit risk using an adaptive Binarized spiking marine predators' neural network in financial sector. *Multimedia Tools and Applications*, *83*(16), 48761-48797.
54. Amarnadh, V., & Moparthi, N. R. (2023). Comprehensive review of different artificial intelligence-based methods for credit risk assessment in data science. *Intelligent Decision Technologies*, *17*(4), 1265-1282.
55. Amarnadh, V., & Moparthi, N. (2023). Data Science in Banking Sector: Comprehensive Review of Advanced Learning Methods for Credit Risk Assessment. *International Journal of Computing and Digital Systems*, *14*(1), 1-xx.
56. Amarnadh, V., & Rao, M. N. (2025). A Consensus Blockchain-Based Credit Risk Evaluation and Credit Data Storage Using Novel Deep Learning Approach. *Computational Economics*, 1-34.
57. Swetha, A., & Shailaja, K. (2019, December). An effective approach for security attacks based on machine learning algorithms. In *International Conference on Advances in Computational Intelligence and Informatics* (pp. 293-299). Singapore: Springer Singapore.
58. Madhuri, N. S., Shailaja, K., Saha, D., Glory, K. B., & Sumithra, M. (2022). IOT integrated smart grid management system for effective energy management. *Measurement: Sensors*, *24*, 100488.
59. Shailaja, K., & Anuradha, B. (2017, October). Deep learning based adaptive linear collaborative discriminant regression classification for face recognition. In *International Conference on Next Generation Computing Technologies* (pp. 675-686). Singapore: Springer Singapore.
60. Shailaja, K., & Anuradha, B. (2017). Improved face recognition using a modified PSO based self-weighted linear collaborative discriminant regression classification. *J. Eng. Appl. Sci*, *12*, 7234-7241.
61. Sekhar, P. R., & Sujatha, B. (2020, July). A literature review on feature selection using evolutionary algorithms. In *2020 7th International Conference on Smart Structures and Systems (ICSSS)* (pp. 1-8). IEEE.
62. Sekhar, P. R., & Goud, S. (2024). Collaborative Learning Techniques in Python Programming: A Case Study with CSE Students at Anurag University. *Journal of Engineering Education Transformations*, *38*.
63. Sekhar, P. R., & Sujatha, B. (2023). Feature extraction and independent subset generation using genetic algorithm for improved classification. *Int. J. Intell. Syst. Appl. Eng*, *11*, 503-512.
64. Pesaramelli, R. S., & Sujatha, B. (2024, March). Principle correlated feature extraction using differential evolution for improved classification. In *AIP Conference Proceedings* (Vol. 2919, No. 1). AIP Publishing.
65. Sharma, S., Vij, S., Praveen, R. V. S., Srinivasan, S., Yadav, D. K., & VS, R. K. (2024, October). Stress Prediction in Higher Education Students Using Psychometric Assessments and AOA-CNN-

XGBoost Models. In *2024 4th International Conference on Sustainable Expert Systems (ICSES)* (pp. 1631-1636). IEEE.

66. Anuprathibha, T., Praveen, R. V. S., Sukumar, P., Suganthi, G., & Ravichandran, T. (2024, October). Enhancing Fake Review Detection: A Hierarchical Graph Attention Network Approach Using Text and Ratings. In *2024 Global Conference on Communications and Information Technologies (GCCIT)* (pp. 1-5). IEEE.
67. Shinkar, A. R., Joshi, D., Praveen, R. V. S., Rajesh, Y., & Singh, D. (2024, December). Intelligent solar energy harvesting and management in IoT nodes using deep self-organizing maps. In *2024 International Conference on Emerging Research in Computational Science (ICERCS)* (pp. 1-6). IEEE.
68. Praveen, R. V. S., Hemavathi, U., Sathya, R., Siddiq, A. A., Sanjay, M. G., & Gowdish, S. (2024, October). AI Powered Plant Identification and Plant Disease Classification System. In *2024 4th International Conference on Sustainable Expert Systems (ICSES)* (pp. 1610-1616). IEEE.
69. Dhivya, R., Sagili, S. R., Praveen, R. V. S., VamsiLala, P. N. V., Sangeetha, A., & Suchithra, B. (2024, December). Predictive Modelling of Osteoporosis using Machine Learning Algorithms. In *2024 4th International Conference on Ubiquitous Computing and Intelligent Information Systems (ICUIS)* (pp. 997-1002). IEEE.
70. Kemmannu, P. K., Praveen, R. V. S., Saravanan, B., Amshavalli, M., & Banupriya, V. (2024, December). Enhancing Sustainable Agriculture Through Smart Architecture: An Adaptive Neuro-Fuzzy Inference System with XGBoost Model. In *2024 International Conference on Sustainable Communication Networks and Application (ICSCNA)* (pp. 724-730). IEEE.
71. Praveen, R. V. S. (2024). *Data Engineering for Modern Applications*. Addition Publishing House.
72. Sharma, T., Reddy, D. N., Kaur, C., Godla, S. R., Salini, R., Gopi, A., & Baker El-Ebiary, Y. A. (2024). Federated Convolutional Neural Networks for Predictive Analysis of Traumatic Brain Injury: Advancements in Decentralized Health Monitoring. *International Journal of Advanced Computer Science & Applications*, *15*(4).
73. JYOTHI, D., VIJAY, P. J., KUMAR, M. K., LAKSHMI, R. V., POPELO, O., MARHASOVA, V., ... & KUMAR, D. V. (2025). DESIGN OF AN IMPROVED METHOD FOR INTRUSION DETECTION USING CNN, LSTM, AND BLOCK CHAIN. *Journal of Theoretical and Applied Information Technology*, *102*(1).
74. Saravanan, V., Sumalatha, A., Reddy, D. N., Ahamed, B. S., & Udayakumar, K. (2024, October). Exploring Decentralized Identity Verification Systems Using Blockchain Technology: Opportunities and Challenges. In *2024 5th IEEE Global Conference for Advancement in Technology (GCAT)* (pp. 1-6). IEEE.
75. GAVARRAJU, L. N. J., RAO, A. S., ANUSHA, R., REDDY, D. N., ANANTULA, J., & SURENDRA, D. (2024). INTEGRATING MULTIMODAL MEDICAL IMAGING DATA FOR ENHANCED BONE CANCER DETECTION: A DEEP LEARNING-BASED FEATURE FUSION APPROACH. *Journal of Theoretical and Applied Information Technology*, *102*(18).
76. Nimma, D., Rao, P. L., Ramesh, J. V. N., Dahan, F., Reddy, D. N., Selvakumar, V., ... & Jangir, P. (2025). Reinforcement Learning-Based Integrated Risk Aware Dynamic Treatment Strategy for Consumer-Centric Next-Gen Healthcare. *IEEE Transactions on Consumer Electronics*.
77. Arockiam, J. M., Panhalkar, A. R., Bhosale, R. S., Kavitha, S., Reddy, D. N., & Kodali, S. (2025). Leveraging Gradient based Optimization based Unequal Clustering Algorithm for Hotspot Problem in Wireless Sensor Networks. *Indonesian Journal of Electrical Engineering and Informatics (IJEEI)*, *13*(1), 156-168.
78. Pathipati, H., Ramisetti, L. N. B., Reddy, D. N., Pesaru, S., Balakrishna, M., & Anitha, T. (2025). Optimizing Cancer Detection: Swarm Algorithms Combined with Deep Learning in

Colon and Lung Cancer using Biomedical Images. *Diyala Journal of Engineering Sciences*, 91-102.

79. REDDY, D. N., KADARU, B. B., SREENIVASULU, A., KANCHANA, R., JANGIR, P., & KUMAR, C. R. (2025). EFFICIENT OBJECT DETECTION IN AGRICULTURAL ENVIRONMENTS IMPLEMENTING COLOR FEATURES EXTREME LEARNING MACHINE. *Journal of Theoretical and Applied Information Technology*, *103*(1).
80. Padmaja, G., Pesaru, S., Reddy, D. N., Kumari, D. A., & Maram, S. P. (2025). Robust Vehicle Number Plate Text Recognition and Data Analysis Using Tesseract Ocr. In *ITM Web of Conferences* (Vol. 74, p. 01009). EDP Sciences.
81. Reddy, K. V., Reddy, D. N., Balakrishna, M., Srividya, Y., & Pesaru, S. (2025). User Friendly and Efficient Mini Wallet for Sending Ethers. In *ITM Web of Conferences* (Vol. 74, p. 02008). EDP Sciences.