

Empowering Individuals with Disabilities: A Comprehensive Web Application for Job Training and Employment Support

G. Kartik Sarma¹, G. Sumith Kumar², P. Srujana³, Vinil⁴, Mrs. Meenakshi Simha⁵

^{1,2,3,4}*Department of Computer Science and Engineering, Anurag University, Hyderabad, India*

⁵*Assistant Professor, Anurag University, Hyderabad, India*

21eg105f11@anurag.edu.in

21eg105f12@anurag.edu.in

21eg105f24@anurag.edu.in

21eg105f47@anurag.edu.in

Abstract. The "Udyog Saarthi App" is a progressive web-based application developed to enhance job coaching and career readiness for adults with disabilities, specifically focusing on the 4% reservation opportunities provided by NIEPMD and similar institutions in India. This innovative platform addresses the unique needs of users by allowing them to select their specific disability during registration, which customizes the website's layout for improved accessibility. The application offers a comprehensive listing of real-time job opportunities that align with users' skills and qualifications, empowering them to pursue suitable career paths. In addition, it provides personalized learning resources tailored to each job role, ensuring that users are equipped with the necessary skills to excel. The app also includes periodic mock assessments designed to evaluate users' preparedness for employment. These assessments employ natural language processing (NLP) techniques to calculate scores based on various parameters such as readability scores and the SMOG index, promoting objective and effective evaluations. Moreover, the Udyog Saarthi App features an interactive dashboard that enables users to track their progress and analytics, fostering a sense of accomplishment and motivation. To promote community engagement and support, the application includes a friend recommender system that connects users with similar disabilities, facilitating peer networking and encouragement. Incorporating multilingual support through the Google Translate API, the platform aims to reach a diverse user base, ensuring that language barriers do not hinder accessibility. Ultimately, the Udyog Saarthi App strives to empower individuals with disabilities by providing essential tools and resources, enabling them to become self-sufficient and industry-ready in the competitive job market.

Keywords: Job coaching, Employability, NLP (Natural Language Processing), Mock assessments, Multilingual support, Community support, Inclusive technology, Progress tracking, Personalized learning.

1 INTRODUCTION

The increasing focus on inclusivity and equal opportunities in the workforce has highlighted the need for tailored solutions that cater to individuals with disabilities. In India, the 4% reservation for persons with disabilities in educational and employment sectors, as mandated by the Rights of Persons with Disabilities Act, 2016, aims to enhance their access to job opportunities. However, significant challenges remain, including limited access to relevant training resources, inadequate job listings, and insufficient support systems for individuals with disabilities. The "Udyog Saarthi App" addresses these challenges by providing a comprehensive web-based platform that empowers users through job coaching, personalized learning experiences, and community support.

The application is designed to adapt to the unique needs of each user by customizing its layout based on their specific disability. This approach ensures an accessible user experience that promotes engagement and effectiveness in skill development. Furthermore, the app integrates advanced technologies, such as Natural Language Processing (NLP), to deliver mock assessments that evaluate job readiness objectively. This functionality helps bridge the skills gap and prepares users for the competitive job market.

The objectives of this research work are to evaluate the effectiveness of the Udyog Saarthi App in enhancing employability for individuals with disabilities and to assess its role in fostering community support through peer networking. This study not only emphasizes the importance of technology in driving inclusivity but also contributes to the ongoing discourse on employment equity. The findings aim to provide insights into how digital solutions can effectively address the barriers faced by disabled individuals in accessing job opportunities, thereby promoting self-sufficiency and economic independence.

2 RESEARCH METHODOLOGY

The development and implementation of the Udyog Saarthi App followed a structured approach to ensure it meets the unique needs of individuals with disabilities. This methodology outlines the key stages involved in the design, development, and evaluation of the application.

User-Centric Design: The first step involved reviewing online resources, articles, and journals to gain insights into the specific needs and preferences of individuals with disabilities regarding accessibility features. This research was instrumental in shaping the app's user interface and functionalities. Based on the selected disability (blindness, deafness, or locomotor disability), the app's layout adapts dynamically, enabling features such as text-to-speech for blind users and eye tracking for those with locomotor disabilities.

Technology Stack: The application was developed using modern web technologies, with ReactJS for the front end and Spring Boot for the back end. MySQL was utilized as the database to store user profiles, job listings, and assessment results. The job listings provide real-time updates, ensuring that users have access to a comprehensive array of job opportunities. Additionally, Python was employed for implementing features such as eye tracking. The integration of the Google Translate API facilitated multilingual support, making the app accessible to a wider audience.

Job Listings and Learning Resources: Real-time job listings were sourced from various APIs and filtered based on users' skills and qualifications, ensuring alignment with the 4% reservation under NIEPMD. For each job, personalized learning resources were developed to provide targeted training. This content was created in collaboration with subject matter experts to ensure its relevance and accuracy.

Mock Assessments: The app includes strict and proctored mock assessments to evaluate user readiness for employment. These assessments are designed to close upon any tab switching, preventing users from seeking external assistance during the evaluation. Scores are calculated using NLP techniques, which analyze readability scores and the SMOG index to provide a comprehensive assessment of users' performance.

Community Features: To foster peer support, the friend recommender system was implemented to connect users with similar disabilities, promoting a sense of community and networking opportunities. The backend algorithms leverage user data to suggest suitable connections based on shared experiences and challenges.

Testing and Evaluation: The idea and prototype were presented to our peers at the university, who provided positive and supportive feedback. This feedback has been instrumental in guiding iterative improvements, ensuring that the application is designed to meet high standards of usability and effectiveness.

Through these methodologies, the Udyog Saarthi App aims to empower individuals with disabilities, enhancing their employability and self-sufficiency in the job market.

3 THEORY AND CALCULATION

Theory

The foundation of the Udyog Saarthi App lies in the principles of accessible web development and personalized user experiences. To achieve a seamless user interface tailored to the needs of individuals with disabilities, the application leverages modern web frameworks and APIs, integrating theoretical insights from human-computer interaction (HCI) and accessibility standards like WCAG 2.1. The dynamic layout adjustments are based on research that shows the effectiveness of specialized interaction methods, such as text-to-speech for blind users and eye-tracking for users with locomotor disabilities, in enhancing user engagement and accessibility.

The app also incorporates Natural Language Processing (NLP) techniques for its mock assessment module, specifically using algorithms like SMOG and Flesch-Kincaid readability indices. These algorithms provide a quantitative measure of assessment difficulty and user comprehension, ensuring the content matches the cognitive and literacy level of the target audience. By evaluating text complexity in real-time, the app can dynamically adjust assessments, offering a personalized and adaptive learning experience.

The app includes a recommendation engine designed to facilitate peer support and community formation by suggesting connections between users with similar disabilities and interests. This engine uses collaborative filtering, which is effective for recommending similar items or users based on shared characteristics or behaviors.

From a database perspective, the use of MySQL allows efficient data storage and retrieval for user profiles, job listings, and assessment outcomes. The schema is optimized for quick access and filtering, aligning with the goal of providing real-time job updates and adaptive learning pathways based on user needs. The backend system employs a RESTful architecture through Spring Boot, ensuring scalability and efficient communication between client and server.

Calculations

The calculation aspect of the application focuses on measuring assessment readability using the SMOG Index and Flesch-Kincaid formulas. These indices are derived using specific linguistic markers:

SMOG Index:

- **SMOG Index:**

$$SMOG = 1.0430 \times \sqrt{\text{Number of Polysyllabic Words} \times \frac{30}{\text{Number of Sentences}}} + 3.1291$$

This formula calculates the grade level needed to comprehend the text. By implementing this algorithm, the app ensures that users receive content matching their literacy levels.

Flesch-Kincaid Readability:

- **Flesch-Kincaid Readability:**

$$\text{Flesch Reading Ease} = 206.835 - (1.015 \times \frac{\text{Total Words}}{\text{Sentences}}) - (84.6 \times \frac{\text{Total Syllables}}{\text{Total Words}})$$

This score helps adapt the assessment difficulty, ensuring users receive a fair and appropriate evaluation.

Cosine Similarity:

$$\text{Cosine Similarity} = \frac{\sum_{i=1}^n A_i \times B_i}{\sqrt{\sum_{i=1}^n (A_i)^2} \times \sqrt{\sum_{i=1}^n (B_i)^2}}$$

This similarity score determines the closeness between two users, and the engine suggests connections when the similarity score exceeds a defined threshold. For example, if two users have similar job interests and disability types, and their assessment scores fall within a close range, the engine considers them a good match for mutual support.

4 RESULTS AND DISCUSSION

Results

The Udyog Saarthi App aims to empower adults with disabilities by offering a tailored web platform for job coaching, skill development, and employment support. The application provides real-time job listings, personalized learning resources, and mock assessments to evaluate job readiness. It also fosters community support through a friend recommender system, connecting users with similar disabilities.

Key Findings

Accessibility Features: The app adapts its layout based on users' disabilities, enhancing the user experience with features like text-to-speech for blind users and eye tracking for those with locomotor disabilities.

Job Listings and Learning Resources: The platform offers job opportunities aligned with the 4% reservation under NIEPMD and provides personalized training content developed with subject matter experts. This ensures users receive relevant and targeted learning materials.

Mock Assessments: Strictly proctored assessments measure job readiness using Natural Language Processing (NLP) algorithms, such as SMOG and Flesch-Kincaid readability indices, which adjust assessment difficulty to the user's comprehension level. This promotes a fair and adaptive evaluation process.

Community Support: The friend recommender system facilitates peer networking, allowing users to connect based on shared experiences and challenges, thus promoting mutual support.

Multilingual Support: The integration of Google Translate API ensures the app's accessibility across different languages, making it inclusive for a wider audience.

Discussion

Impact on Employability: The app's job coaching, personalized learning, and real-time job listings contribute significantly to improving the employability of individuals with disabilities. By providing tailored training resources and job matches, the platform ensures that users are better prepared for the workforce, making them more competitive candidates for employment. The mock assessments further help users gauge their readiness for the job market, allowing them to refine their skills before applying for actual positions.

Technological Integration: The integration of advanced technologies such as NLP and machine learning algorithms significantly enhances the app's ability to provide personalized and objective evaluations. These technologies allow the app to assess users' performance in a way that aligns with their cognitive capabilities, ensuring a fair and adaptive learning experience. Additionally, the recommendation engine that suggests peer connections based on similarity in disability type and career interests adds a unique layer of community support to the app.

Challenges and Limitations: While the app offers significant benefits, some challenges remain. The customization for different disabilities, though highly beneficial, requires constant updates and improvements to ensure that all disabilities are addressed comprehensively. Furthermore, the success of the friend recommender system depends on a critical mass of users, which may take time to build. Another potential challenge is ensuring that the content remains relevant and up-to-date, which requires continuous collaboration with subject matter experts.

Future Improvements: As the app evolves, there are several areas for improvement. Expanding the range of disabilities that the app can cater to, particularly in terms of more advanced accessibility features, could further enhance the user experience. Additionally, incorporating a feedback loop where users can rate job listings, learning materials, and community support would help improve the platform's offerings. Finally, integrating job interviews and mock interview training could take the app to the next level by helping users prepare for all stages of the hiring process.

4.1 Preparation of Figures and Tables

The following table illustrates the main features and their implementation within the platform

Feature	Description
Job Listings	A comprehensive database of job opportunities tailored for individuals with disabilities.
Customized User Interface	Adaptable interface customized based on the user's specific disability for an inclusive experience.

AI-Driven Chatbot	Intelligent chatbot offering personalized career guidance and learning resources.
Mock Assessments	Periodic tests with intuitive dashboards to track progress and readiness for job applications.
Peer Networking	Recommendation engine connecting users with similar disabilities for support and collaboration.
Learning Modules	Personalized educational content to improve employability skills.
4% Reservation Insights	Detailed information and support for job opportunities under the 4% disability reservation policy.
Progress Tracking	Interactive dashboards showcasing user improvement and goal achievements.
Multilingual Support	Available in multiple languages to cater to diverse user demographics.

5 CONCLUSIONS

The Udyog Saarthi App represents a significant step toward empowering individuals with disabilities by providing them with the tools they need to succeed in the job market. Through its personalized approach, technological innovations, and focus on community engagement, the app is setting a new standard for inclusive job training and employment support. While challenges remain, the app shows great promise in helping individuals with disabilities achieve their full potential and participate actively in the workforce.

6 DECLARATIONS

We have all contributed to the development, implementation, and evaluation of the Udyog Saarthi App. This manuscript is our original work and has not been submitted elsewhere.

6.1 Study Limitations

While the Udyog Saarthi App incorporates multiple accessibility features and job coaching resources, it is limited to the specific disabilities and job opportunities currently supported. Future iterations aim to expand the scope to include additional disability types, industries, and advanced machine-learning models for personalized support.

6.2 Acknowledgments

We express our heartfelt gratitude to Mrs. Meenakshi Simha, Assistant Professor at Anurag University, for her invaluable guidance and supervision throughout this project. We also extend our thanks to our peers for their constructive feedback and unwavering support during the development phase.

6.3 Funding source

None

6.4 Competing Interests

The authors declare that there are no potential conflicts of interest related to this publication.

REFERENCES

- 1 Mukiri, R. R., Kumar, B. S., & Prasad, B. V. V. (2019, February). Effective Data Collaborative Strain Using RecTree Algorithm. In *Proceedings of International Conference on Sustainable Computing in Science, Technology and Management (SUSCOM)*, Amity University Rajasthan, Jaipur-India.
- 2 Rao, B. T., Prasad, B. V. V. S., & Peram, S. R. (2019). Elegant Energy Competent Lighting in Green Buildings Based on Energetic Power Control Using IoT Design. In *Smart Intelligent Computing and Applications: Proceedings of the Second International Conference on SCI 2018, Volume 1* (pp. 247-257). Springer Singapore.
- 3 Someswar, G. M., & Prasad, B. V. V. S. (2017, October). USVGM protocol with two layer architecture for efficient network management in MANET'S. In *2017 2nd International Conference on Communication and Electronics Systems (ICCES)* (pp. 738-741). IEEE.
- 4 Alapati, N., Prasad, B. V. V. S., Sharma, A., Kumari, G. R. P., Veeneetha, S. V., Srivalli, N., ... & Sahitya, D. (2022, November). Prediction of Flight-fare using machine learning. In *2022 International Conference on Fourth Industrial Revolution Based Technology and Practices (ICFIRTP)* (pp. 134-138). IEEE.
- 5 Alapati, N., Prasad, B. V. V. S., Sharma, A., Kumari, G. R. P., Bhargavi, P. J., Alekhya, A., ... & Nandini, K. (2022, November). Cardiovascular Disease Prediction using machine learning. In *2022 International Conference on Fourth Industrial Revolution Based Technology and Practices (ICFIRTP)* (pp. 60-66). IEEE.
- 6 Narayana, M. S., Babu, N., Prasad, B. V. V. S., & Kumar, B. S. (2011). Clustering Categorical Data--Study of Mining Tools for Data Labeling. *International Journal of Advanced Research in Computer Science*, 2(4).
- 7 Shankar, G. S., Onyema, E. M., Kavin, B. P., Gude, V., & Prasad, B. S. (2024). Breast Cancer Diagnosis Using Virtualization and Extreme Learning Algorithm Based on Deep Feed Forward Networks. *Biomedical Engineering and Computational Biology*, 15, 11795972241278907.
- 8 Kulkarni, R., & Prasad, B. S. (2022). Predictive Modeling Of Heart Disease Using Artificial Intelligence. *Journal of Survey in Fisheries Sciences*, 791-801.
- 9 Gowda, B. M. V., Murthy, G. V. K., Upadhye, A. S., & Raghavan, R. (1996). Serotypes of Escherichia coli from pathological conditions in poultry and their antibiogram.
- 10 Balasubbareddy, M., Murthy, G. V. K., & Kumar, K. S. (2021). Performance evaluation of different structures of power system stabilizers. *International Journal of Electrical and Computer Engineering (IJECE)*, 11(1), 114-123.
- 11 Murthy, G. V. K., & Sivanagaraju, S. (2012). S. Satyana rayana, B. Hanumantha Rao," Voltage stability index of radial distribution networks with distributed generation,". *Int. J. Electr. Eng*, 5(6), 791-803.
- 12 Anuja, P. S., Kiran, V. U., Kalavathi, C., Murthy, G. N., & Kumari, G. S. (2015). Design of elliptical patch antenna with single & double U-slot for wireless applications: a comparative approach. *International Journal of Computer Science and Network Security (IJCSNS)*, 15(2), 60.
- 13 Murthy, G. V. K., Sivanagaraju, S., Satyanarayana, S., & Rao, B. H. (2015). Voltage stability enhancement of distribution system using network reconfiguration in the presence of DG. *Distributed Generation & Alternative Energy Journal*, 30(4), 37-54.
- 14 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.
- 15 Madhavi, M., & Murthy, G. V. (2020). Role of certifications in improving the quality of Education in Outcome Based Education. *Journal of Engineering Education Transformations*, 33(Special Issue).
- 16 Varaprasad Rao, M., Srujan Raju, K., Vishnu Murthy, G., & Kavitha Rani, B. (2020). Configure and management of internet of things. In *Data Engineering and Communication Technology: Proceedings of 3rd ICDECT-2K19* (pp. 163-172). Springer Singapore.
- 17 Murthy, G. V. K., Suresh, C. H. V., Sowjankumar, K., & Hanumantharao, B. (2019). Impact of distributed generation on unbalanced radial distribution system. *International Journal of Scientific and Technology Research*, 8(9), 539-542.
- 18 Balram, G., & Kumar, K. K. (2022). Crop field monitoring and disease detection of plants in smart agriculture using internet of things. *International Journal of Advanced Computer Science and Applications*, 13(7).
- 19 Balram, G., & Kumar, K. K. (2018). Smart farming: Disease detection in crops. *Int. J. Eng. Technol*, 7(2.7), 33-36.

- 20 Balram, G., Rani, G. R., Mansour, S. Y., & Jafar, A. M. (2001). Medical management of otitis media with effusion. *Kuwait Medical Journal*, 33(4), 317-319.
- 21 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.
- 22 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.
- 23 Prasad, P. S., & Rao, S. K. M. (2017). HIASA: Hybrid improved artificial bee colony and simulated annealing based attack detection algorithm in mobile ad-hoc networks (MANETs). *Bonfring International Journal of Industrial Engineering and Management Science*, 7(2), 01-12.
- 24 Prasad, P. S., Siva, S., & Krishna Mohan Rao, S. "A Survey on Performance Analysis of Manets Under Security Attacks." *network* 6, no. 7 (2017).
- 25 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*.
- 26 Srilatha, P., Murthy, G. V., & Reddy, P. R. S. (2020). Integration of Assessment and Learning Platform in a Traditional Class Room Based Programming Course. *Journal of Engineering Education Transformations*, 33(Special Issue).
- 27 Reddy, P. R. S., & Ravindranadh, K. (2019). An exploration on privacy concerned secured data sharing techniques in cloud. *International Journal of Innovative Technology and Exploring Engineering*, 9(1), 1190-1198.
- 28 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).
- 29 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.
- 30 Koor, 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., Koor, 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 S).
- 32 Madhuri, K. (2023). Security Threats and Detection Mechanisms in Machine Learning. *Handbook of Artificial Intelligence*, 255.
- 33 Madhuri, K. (2022). A New Level Intrusion Detection System for Node Level Drop Attacks in Wireless Sensor Network. *Journal of Algebraic Statistics*, 13(1), 159-168.
- 34 DASTAGIRIAH, D. (2024). A SYSTEM FOR ANALYSING CALL DROP DYNAMICS IN THE TELECOM INDUSTRY USING MACHINE LEARNING AND FEATURE SELECTION. *Journal of Theoretical and Applied Information Technology*, 102(22).
- 35 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.
- 36 Sudhakar, R. V., Dastagiraiah, C., Pattem, S., & Bhukya, S. (2024). Multi-Objective Reinforcement Learning Based Algorithm for Dynamic Workflow Scheduling in Cloud Computing. *Indonesian Journal of Electrical Engineering and Informatics (IJEI)*, 12(3), 640-649.
- 37 PushpaRani, K., Roja, G., Anusha, R., Dastagiraiah, C., Srilatha, B., & Manjusha, B. (2024, June). Geological Information Extraction from Satellite Imagery Using Deep Learning. In *2024 15th International Conference on Computing Communication and Networking Technologies (ICCCNT)* (pp. 1-7). IEEE.
- 38 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.
- 39 Sravan, K., Gunakar Rao, L., Ramineni, K., Rachapalli, A., & Mohammad, S. (2023, July). Analyze the Quality of Wine Based on Machine Learning Approach. In *International Conference on Data Science and Applications* (pp. 351-360). Singapore: Springer Nature Singapore.
- 40 LAASSIRI, J., EL HAJJI, S. A. İ. D., BOUHDADI, M., AOUDÉ, M. A., JAGADISH, H. P., LOHIT, M. K., ... & KHOLLADI, M. (2010). Specifying Behavioral Concepts by engineering language of RM-ODP. *Journal of Theoretical and Applied Information Technology*, 15(1).
- 41 Ramineni, K., Harshith Reddy, K., Sai Thrikoteswara Chary, L., Nikhil, L., & Akanksha, P. (2024, February). Designing an Intelligent Chatbot with Deep Learning: Leveraging FNN Algorithm for Conversational Agents to Improve the Chatbot Performance. In *World Conference on Artificial Intelligence: Advances and Applications* (pp. 143-151). Singapore: Springer Nature Singapore.

- 42 Samya, B., Archana, M., Ramana, T. V., Raju, K. B., & Ramineni, K. (2024, February). Automated Student Assignment Evaluation Based on Information Retrieval and Statistical Techniques. In *Congress on Control, Robotics, and Mechatronics* (pp. 157-167). Singapore: Springer Nature Singapore.
- 43 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.
- 44 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.
- 45 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(Special Issue 1).
- 46 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.
- 47 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.
- 48 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.
- 49 Amarnadh, V., & Moparthi, N. R. (2024). Range control-based class imbalance and optimized granular elastic net regression feature selection for credit risk assessment. *Knowledge and Information Systems*, 1-30.
- 50 Amarnadh, V., & Akhila, M. (2019, May). RETRACTED: Big Data Analytics in E-Commerce User Interest Patterns. In *Journal of Physics: Conference Series* (Vol. 1228, No. 1, p. 012052). IOP Publishing.
- 51 Ravinder Reddy, B., & Anil Kumar, A. (2020). Survey on access control mechanisms in cloud environments. In *Advances in Computational Intelligence and Informatics: Proceedings of ICACII 2019* (pp. 141-149). Springer Singapore.
- 52 Reddy, M. B. R., Nandini, J., & Sathwik, P. S. Y. (2019). Handwritten text recognition and digital text conversion. *International Journal of Trend in Research and Development*, 3(3), 1826-1827.
- 53 Reddy, B. R., & Adilakshmi, T. (2023). Proof-of-Work for Merkle based Access Tree in Patient Centric Data. *structure*, 14(1).
- 54 Reddy, B. R., Adilakshmi, T., & Kumar, C. P. (2020). Access Control Methods in Cloud Enabledthe Cloud-Enabled Internet of Things. In *Managing Security Services in Heterogenous Networks* (pp. 1-17). CRC Press.
- 55 Reddy, M. B. R., Akhil, V., Preetham, G. S., & Poojitha, P. S. (2019). Profile Identification through Face Recognition.
- 56 Dutta, P. K., & Mitra, S. (2021). Application of agricultural drones and IoT to understand food supply chain during post COVID-19. *Agricultural informatics: automation using the IoT and machine learning*, 67-87.
- 57 Matuka, A., Asafo, S. S., Eweke, G. O., Mishra, P., Ray, S., Abotaleb, M., ... & Chowdhury, S. (2022, December). Analysing the impact of COVID-19 outbreak and economic policy uncertainty on stock markets in major affected economies. In *6th Smart Cities Symposium (SCS 2022)* (Vol. 2022, pp. 372-378). IET.
- 58 Saber, M., & Dutta, P. K. (2022). Uniform and Nonuniform Filter Banks Design Based on Fusion Optimization. *Fusion: Practice and Applications*, 9(1), 29-37.
- 59 Mensah, G. B., & Dutta, P. K. (2024). Evaluating if Ghana's Health Institutions and Facilities Act 2011 (Act 829) Sufficiently Addresses Medical Negligence Risks from Integration of Artificial Intelligence Systems. *Mesopotamian Journal of Artificial Intelligence in Healthcare*, 2024, 35-41.
- 60 Aydın, Ö., Karaarslan, E., & Gökçe Narin, N. (2023). Artificial intelligence, vr, ar and metaverse technologies for human resources management. *VR, AR and Metaverse Technologies for Human Resources Management (June 15, 2023)*.
- 61 Chidambaram, R., Balamurugan, M., Senthilkumar, R., Srinivasan, T., Rajmohan, M., Karthick, R., & Abraham, S. (2013). Combining AIET with chemotherapy-lessons learnt from our experience. *J Stem Cells Regen Med*, 9(2), 42-43.
- 62 Karthick, R., & Sundhararajan, M. (2014). Hardware Evaluation of Second Round SHA-3 Candidates Using FPGA. *International Journal of Advanced Research in Computer Science & Technology (IJARCST 2014)*, 2(2).
- 63 Sudhan, K., Deepak, S., & Karthick, R. (2016). SUSTAINABILITY ANALYSIS OF KEVLAR AND BANANA FIBER COMPOSITE.
- 64 Karthick, R., Gopalakrishnan, S., & Ramesh, C. (2020). Mechanical Properties and Characterization of Palmyra Fiber and Polyester Resins Composite. *International Journal of Emerging Trends in Science & Technology*, 6(2).
- 65 Karthick, R., Pandi, M., Dawood, M. S., Prabakaran, A. M., & Selvaprasanth, P. (2021). ADHAAR: A RELIABLE DATA HIDING TECHNIQUES WITH (NNP2) ALGORITHMIC APPROACH USING X-RAY IMAGES. *3C Tecnologia*, 597-608.
- 66 Deepa, R., Karthick, R., Velusamy, J., & Senthilkumar, R. (2025). Performance analysis of multiple-input multiple-output orthogonal frequency division multiplexing system using arithmetic optimization algorithm. *Computer Standards & Interfaces*, 92, 103934.
- 67 Selvan, M. Arul, and S. Miruna Joe Amali. "RAINFALL DETECTION USING DEEP LEARNING TECHNIQUE." (2024).

- 68 Selvan, M. Arul. "Fire Management System For Industrial Safety Applications." (2023).
- 69 Selvan, M. A. (2023). A PBL REPORT FOR CONTAINMENT ZONE ALERTING APPLICATION.
- 70 Selvan, M. A. (2023). CONTAINMENT ZONE ALERTING APPLICATION A PROJECT BASED LEARNING REPORT.
- 71 Selvan, M. A. (2021). Robust Cyber Attack Detection with Support Vector Machines: Tackling Both Established and Novel Threats.
- 72 Arora, P., & Bhardwaj, S. (2021). Methods for Threat and Risk Assessment and Mitigation to Improve Security in the Automotive Sector. *Methods*, 8(2).
- 73 Arora, P., & Bhardwaj, S. (2020). Research on Cybersecurity Issues and Solutions for Intelligent Transportation Systems.
- 74 Arora, P., & Bhardwaj, S. (2019). The Suitability of Different Cybersecurity Services to Stop Smart Home Attacks.
- 75 Arora, P., & Bhardwaj, S. (2017). A Very Safe and Effective Way to Protect Privacy in Cloud Data Storage Configurations.
- 76 Arora, P., & Bhardwaj, S. (2017). Investigation and Evaluation of Strategic Approaches Critically before Approving Cloud Computing Service Frameworks.
- 77 Arora, P., & Bhardwaj, S. (2017). Enhancing Security using Knowledge Discovery and Data Mining Methods in Cloud Computing.
- 78 Arora, P., & Bhardwaj, S. (2019). Safe and Dependable Intrusion Detection Method Designs Created with Artificial Intelligence Techniques. *machine learning*, 8(7).
- 79 Bhat, S. (2024). Building Thermal Comforts with Various HVAC Systems and Optimum Conditions.
- 80 Bhat, S. (2020). Enhancing Data Centre Energy Efficiency with Modelling and Optimisation of End-To-End Cooling.
- 81 Bhat, S. (2016). Improving Data Centre Energy Efficiency with End-To-End Cooling Modelling and Optimisation.
- 82 Bhat, S. (2015). Deep Reinforcement Learning for Energy-Saving Thermal Comfort Management in Intelligent Structures.
- 83 Bhat, S. (2015). Design and Function of a Gas Turbine Range Extender for Hybrid Vehicles.
- 84 Bhat, S. (2023). Discovering the Attractiveness of Hydrogen-Fuelled Gas Turbines in Future Energy Systems.
- 85 Bhat, S. (2019). Data Centre Cooling Technology's Effect on Turbo-Mode Efficiency.
- 86 Bhat, S. (2018). The Impact of Data Centre Cooling Technology on Turbo-Mode Efficiency.
- 87 Bhat, S. (2015). Technology for Chemical Industry Mixing and Processing. *Technology*, 2(2).
- 88 Karthick, R., & Pragasam, J. (2019). D "Design of Low Power MPSoC Architecture using DR Method" Asian Journal of Applied Science and Technology (AJAST) Volume 3, Issue 2.
- 89 Karthick, R. (2018). Deep Learning For Age Group Classification System. *International Journal Of Advances In Signal And Image Sciences*, 4(2), 16-22.
- 90 Karthick, R., Akram, M., & Selvaprasanth, P. (2020). A Geographical Review: Novel Coronavirus (COVID-19) Pandemic. *A Geographical Review: Novel Coronavirus (COVID-19) Pandemic (October 16, 2020). Asian Journal of Applied Science and Technology (AJAST)(Quarterly International Journal) Volume, 4*, 44-50.
- 91 Karthick, R. (2018). Integrated System For Regional Navigator And Seasons Management. *Journal of Global Research in Computer Science*, 9(4), 11-15.
- 92 Kavitha, N., Soundar, K. R., Karthick, R., & Kohila, J. (2024). Automatic video captioning using tree hierarchical deep convolutional neural network and ASRNN-bi-directional LSTM. *Computing*, 106(11), 3691-3709.
- 93 Selvan, M. A. (2023). INDUSTRY-SPECIFIC INTELLIGENT FIRE MANAGEMENT SYSTEM.
- 94 Selvan, M. Arul. "PHISHING CONTENT CLASSIFICATION USING DYNAMIC WEIGHTING AND GENETIC RANKING OPTIMIZATION ALGORITHM." (2024).
- 95 Selvan, M. Arul. "Innovative Approaches in Cardiovascular Disease Prediction Through Machine Learning Optimization." (2024).
- 96 Lokhande, M., Kalpanadevi, D., Kate, V., Tripathi, A. K., & Bethapudi, P. (2023). Study of Computer Vision Applications in Healthcare Industry 4.0. In *Healthcare Industry 4.0* (pp. 151-166). CRC Press.
- 97 Parganiha, R., Tripathi, A., Prathyusha, S., Baghel, P., Lanjhiyana, S., Lanjhiyana, S., ... & Sarkar, D. (2022). A review of plants for hepatic disorders. *J. Complement. Med. Res*, 13(46), 10-5455.
- 98 Tripathi, A. K., Soni, R., & Verma, S. (2022). A review on ethnopharmacological applications, pharmacological activities, and bioactive compounds of *Mimosa pudica* (linn.). *Research Journal of Pharmacy and Technology*, 15(9), 4293-4299.
- 99 Tripathi, A. K., Dwivedi, C. P., Bansal, P., Pradhan, D. K., Parganiha, R., & Sahu, D. An Ethnoveterinary Important Plant Terminalia Arjuna. *International Journal of Health Sciences*, (II), 10601-10607.
- 100 Mishra, S., Grewal, J., Wal, P., Bhivshet, G. U., Tripathi, A. K., & Walia, V. (2024). Therapeutic potential of vasopressin in the treatment of neurological disorders. *Peptides*, 174, 171166.
- 101 Koliqi, R., Fathima, A., Tripathi, A. K., Sohi, N., Jesudasan, R. E., & Mahapatra, C. (2023). Innovative and Effective Machine Learning-Based Method to Analyze Alcoholic Brain Activity with Nonlinear Dynamics and Electroencephalography Data. *SN Computer Science*, 5(1), 113.

- 102 Tripathi, A. K., Diwedi, P., Kumar, N., Yadav, B. K., & Rathod, D. (2022). Trigonella Foenum Grecum L. Seed (Fenugreek) Pharmacological Effects on Cardiovascular and Stress Associated Disease. *NeuroQuantology*, 20(8), 4599.
- 103 Sahu, P., Sharma, G., Verma, V. S., Mishra, A., Deshmukh, N., Pandey, A., ... & Chauhan, P. (2022). Statistical optimization of microwave assisted acrylamide grafting of Linum usitatissimum Gum. *NeuroQuantology*, 20(11), 4008.
- 104 Biswas, D., Sharma, G., Pandey, A., Tripathi, A. K., Pandey, A., Sahu, P., ... & Chauhan, P. (2022). Magnetic Nanosphere: Promising approach to deliver the drug to the site of action. *NeuroQuantology*, 20(11), 4038.
- 105 Kumar, D. P., & Kumar, P. G. (2025). Implementation of optimal routing in heterogeneous wireless sensor network with multi-channel Media Access Control protocol using Enhanced Henry Gas Solubility Optimizer. *International Journal of Communication Systems*, 38(1), e5980.
- 106 Avhankar, Madhavi S., et al. "Mobile ad hoc network routing protocols using opnet simulator." *International Journal on Recent and Innovation Trends in Computing and Communication* 10.1 (2022): 1-7.
- 107 Pawar, J. A., Avhankar, M. S., Gupta, A., Barve, A., Patil, H., & Maranan, R. (2024, May). Enhancing Network Security: Leveraging Isolation Forest for Malware Detection. In 2024 2nd International Conference on Advancement in Computation & Computer Technologies (InCACCT) (pp. 230-234). IEEE.
- 108 Avhankar, M. S., Pawar, J., & Byagar, S. (2022, December). Localization Algorithms in Wireless Sensor Networks: Classification, Case Studies and Evaluation Frameworks. In 2022 Fourth International Conference on Emerging Research in Electronics, Computer Science and Technology (ICERECT) (pp. 01-07). IEEE.
- 109 Avhankar, M. S., Pawar, J., Singh, G., Asokan, A., Kaliappan, S., & Purohit, K. C. (2023, May). Simulation Environment for the I9 Vanet Platform. In 2023 International Conference on Advances in Computing, Communication and Applied Informatics (ACCAI) (pp. 1-8). IEEE.