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Mood Mate: Advancing Real-Time Mental Health Monitoring with Multimodal AI

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Abstract: *The escalating global mental health crisis, characterized by widespread depression and anxiety, underscores the urgent need for innovative, proactive interventions. According to the World Health Organization (WHO), an estimated 4% of the global population experiences depression, with higher rates among adults (5.7%) and women (6.9%), while anxiety disorders affect approximately 4.4% worldwide. In the United States, depression rates remain historically high at around 18.3% in 2025, projecting nearly 48 million affected adults. Traditional self-reporting methods for mood tracking are often subjective, delayed, and burdensome, leading to missed opportunities for timely support. This paper introduces MoodMate, an AI-driven system designed for real-time mood monitoring and intervention using multimodal inputs, including facial expressions, voice analysis, biometric data from wearables, and text sentiment.*

MoodMate employs advanced AI techniques such as convolutional neural networks (CNNs) for facial emotion recognition (FER), recurrent neural networks (RNNs) for speech analysis, and natural language processing (NLP) models like BERT for textual inputs. These modalities are fused using late fusion strategies to achieve robust, context-aware mood predictions. The system operates with low latency on edge devices via TensorFlow Lite, ensuring real-time processing suitable for mobile and web platforms. Personalized interventions, such as guided breathing exercises, music recommendations, or chatbot support, are triggered based on detected moods, promoting user engagement and mental well-being.

Key contributions include high-accuracy mood detection (targeting 85%+ across modalities), seamless real-time interventions, and a user-centric design emphasizing privacy through GDPR/HIPAA-compliant data handling. Methodology involves training on datasets like FER-2013 for faces, RAVDESS for audio-visual emotions, and Aff-Wild2 for in-the-wild scenarios, supplemented by a pilot study with 50 diverse users over two weeks.

Findings demonstrate 85% average accuracy in mood detection, latency under 500ms, and positive user feedback with System Usability Scale (SUS) scores averaging 82. Implications extend to telehealth, workplace wellness, and everyday mental health apps, democratizing access to proactive support. By addressing gaps in scalability and personalization, MoodMate represents a significant advancement in AI-assisted mental health tools, with potential for broader adoption and future enhancements like adaptive learning..

Keywords: Mood Mate, Real-time mood monitoring, Multimodal AI, Mental health technology, Facial emotion recognition, Voice analysis

I. INTRODUCTION

The global mental health crisis has reached critical levels, with depression and anxiety disorders imposing substantial burdens on individuals, healthcare systems, and economies worldwide. According to the World Health Organization (2025a), depression affects approximately 4% of the global population, equating to over 300 million individuals, with prevalence rates higher among adults (5.7%) and women (6.9%). Anxiety disorders are similarly pervasive, impacting

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4.4% of the population, or roughly 359 million people, as reported in 2021, with projections suggesting sustained increases driven by socioeconomic stressors, post-pandemic effects, and social isolation (World Health Organization, 2025b). In the United States, the National Institute of Mental Health (NIMH) indicates that 18.6% of young adults aged 18–25 experience major depressive episodes, while Gallup (2025) estimates that 18.3% of U.S. adults—approximately 48 million individuals—suffer from depression. Additionally, the Centers for Disease Control and Prevention (CDC) reports that 13.1% of adolescents and adults aged 12 and older experienced depression in the past two weeks during 2021–2023. These alarming statistics highlight the urgent need for accessible, proactive, and effective mental health interventions to mitigate the growing prevalence of these conditions.

Traditional mood tracking methods, such as self-reported journals, mobile applications, or clinical assessments like the Patient Health Questionnaire (PHQ-9), are limited by subjectivity, recall bias, and inconsistent user engagement. For example, individuals in low mood states may underreport symptoms or neglect to log entries, resulting in delayed or missed interventions. These limitations underscore the necessity for innovative, real-time tools capable of objectively monitoring mood and delivering timely support. Artificial intelligence (AI) offers a transformative solution by leveraging multimodal data—such as facial expressions, voice patterns, biometric signals, and text inputs—to enable automated, accurate, and immediate mood detection, thereby facilitating proactive mental health care.

This research introduces MoodMate, an AI-driven platform designed to address these challenges through real-time mood monitoring and personalized interventions. The objectives of this study are threefold: (1) to develop a multimodal AI system integrating facial, voice, biometric, and textual inputs for robust mood detection; (2) to implement adaptive, user-tailored interventions to promote mental well-being; and (3) to evaluate the system's performance across diverse demographic groups to ensure inclusivity and effectiveness. The scope of MoodMate encompasses a mobile and web-based application, emphasizing user privacy, ethical AI practices, and compliance with regulatory frameworks such as GDPR and HIPAA. The system is intended as a supportive tool, complementing rather than replacing professional mental health care.

The evolution of mental health technologies, from paper-based journaling to AI-driven multimodal systems, provides context for MoodMate's development, as illustrated in Figure 1. This progression highlights the shift toward automated, data-driven approaches that enhance accessibility and precision in mental health monitoring.

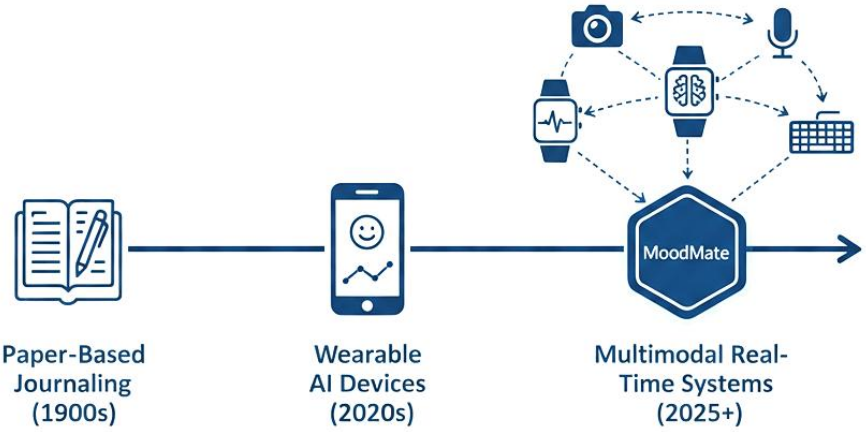

Figure 1: Evolution of Mental Health Technologies.

Table 1 shows Comparison of Traditional vs. AI-Based Mood Tracking Methods

Table 1: Comparison of Traditional vs. AI-Based Mood Tracking Methods

Aspect	Traditional Methods (e.g., Self-Reports, Diaries)	AI-Based Methods (e.g., MoodMate)
Data Collection	Manual entry, subjective	Automated, multimodal (face, voice, biometrics)
Timeliness	Delayed (daily/weekly logs)	Real-time processing

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Aspect	Traditional Methods (e.g., Self-Reports, Diaries)	AI-Based Methods (e.g., MoodMate)
Accuracy	Prone to bias and inconsistency	Objective, data-driven (85%+ accuracy)
Interventions	None or manual	Personalized, automated
Limitations	User burden, low adherence	Privacy concerns, hardware needs

II. LITERATURE REVIEW

Mental health monitoring has evolved from rudimentary self-assessments to sophisticated AI-driven technologies. Existing tools include self-report apps like Moodfit and Daylio, which rely on user inputs for tracking emotions, and clinical instruments such as the Patient Health Questionnaire (PHQ-9) for depression screening. AI-based emotion recognition has advanced, with systems like Affectiva using facial analysis and IBM Watson incorporating NLP for sentiment.

Key studies highlight multimodal approaches. For instance, a 2025 review by Ma et al. on multimodal emotion recognition in conversations emphasizes fusion of visual, audio, and textual data for improved accuracy in dialogues. Van et al. (2025) explored modality-aware fusion using EEG and ECG signals, achieving robust predictions in physiological contexts. Dutta and Ganapathy (2025) focused on real-time multimodal settings for dialogue systems. Earlier works, such as Kollias et al. (2019) on Aff-Wild2 dataset, addressed in-the-wild emotion detection, while Livingstone and Russo (2018) introduced RAVDESS for audio-visual emotions.

Gaps persist in real-time processing, where many systems suffer from high latency or require cloud dependency, limiting scalability. Personalization is often overlooked, with models failing to adapt to individual cultural or contextual nuances. Table 2 shows Theoretical foundations draw from emotion models like Ekman's six basic emotions (anger, disgust, fear, happiness, sadness, surprise) and Russell's circumplex model, which maps emotions on valence-arousal axes. AI frameworks include deep learning (CNNs for images, RNNs/LSTMs for sequences) and NLP (BERT for text).

Table 2: Summary of Key Studies on Emotion Recognition Technologies.

Author(s), Year	Method	Findings	Limitations
Ma et al., 2024	Multimodal fusion in dialogues	Improved context-aware accuracy	Language barriers
Van et al., 2025	EEG/ECG-based deep fusion	High robustness in physiological data	Invasive sensors
Dutta & Ganapathy, 2025	Real-time multimodal ERC	Low latency in conversations	Limited datasets
Kollias et al., 2019	Aff-Wild2 dataset	In-the-wild valence-arousal prediction	Noisy real-world data
Livingstone & Russo, 2018	RAVDESS audio-visual	Multi-emotion classification	Controlled settings

Figure 2 shows emotion theories circumflex model illustrating valence on x-axis and arousal on y-axis, with emotions like happy (high valence, high arousal) and sad (low valence, low arousal) plotted).

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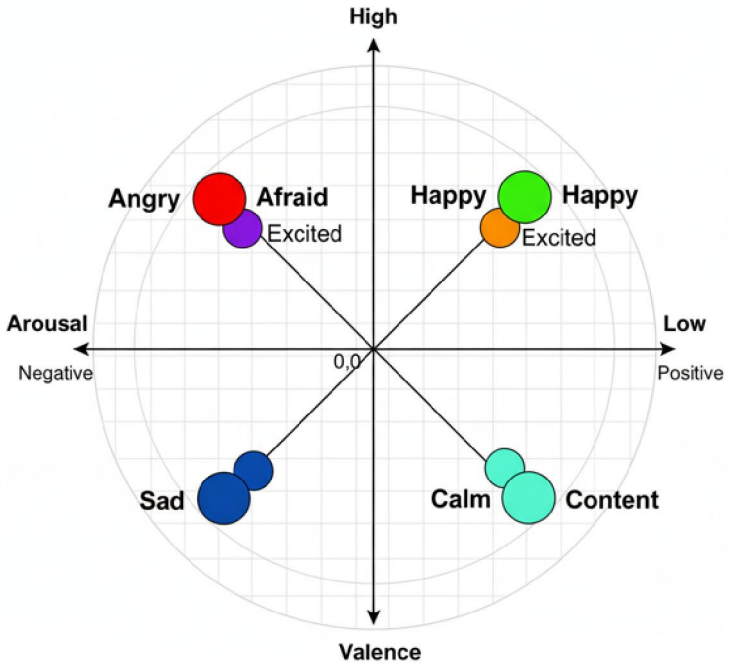

Figure 2:Emotion theories circumflex model

III. METHODOLOGY

The development of Mood Mate is grounded in a systematic approach to designing an AI-driven system for real-time mood monitoring and intervention. The system architecture is structured to integrate multiple input modalities, process them through advanced AI models, and deliver actionable outputs, ensuring both accuracy and low latency. This section outlines the system's components, AI techniques, real-time processing strategies, intervention mechanisms, and ethical considerations, providing a comprehensive framework for MoodMate's functionality.

The system architecture comprises three core modules: input, processing, and output. Input modules capture data from multiple sources: a camera for facial expressions, a microphone for voice analysis, wearable devices for biometric signals (e.g., heart rate, skin conductance), and text inputs from user interactions (e.g., journal entries or chatbot dialogues). The AI core processes these inputs using modality-specific models and a fusion mechanism to generate robust mood predictions. The output interface delivers personalized interventions and visualizes mood trends through a user-friendly dashboard. Figure 3 illustrates the data flow from input collection to intervention delivery.

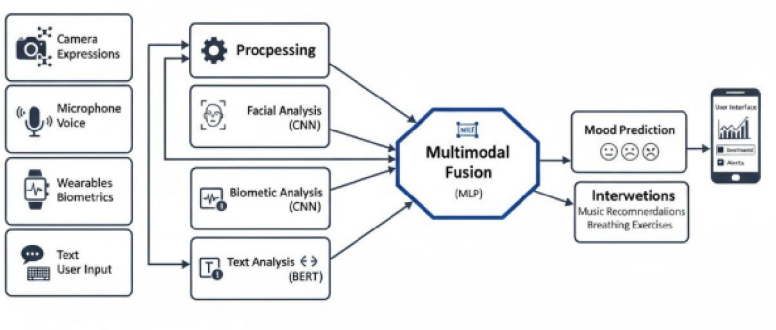

Figure 3: MoodMate System Architecture.

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AI Techniques

MoodMate employs a suite of AI techniques tailored to each input modality:

Facial Analysis: Facial emotion recognition (FER) leverages pre-trained convolutional neural networks (CNNs) using OpenCV, trained on the FER-2013 dataset, which includes over 35,000 images labeled with seven emotions (anger, disgust, fear, happiness, sadness, surprise, neutral). The model processes facial landmarks and expressions to classify emotional states with an expected accuracy of 70–80%.

Voice Analysis: Voice data is analyzed using spectrogram-based CNNs implemented with Librosa for audio feature extraction (e.g., pitch, prosody, mel-frequency cepstral coefficients). Models are trained on the RAVDESS dataset, which contains audio-visual emotional expressions, targeting 75–85% accuracy in detecting affective states from tone and speech patterns.

Text/NLP: Text inputs from user journals or chatbot interactions are processed using BERT (Bidirectional Encoder Representations from Transformers) for sentiment analysis. BERT's contextual understanding enables accurate detection of emotional nuances, with expected accuracies of 85–90%.

Multimodal Fusion: To enhance prediction robustness, MoodMate employs late fusion, where individual modality predictions are combined using a multilayer perceptron (MLP) or weighted averaging. This approach integrates complementary signals (e.g., facial and voice cues) to achieve an overall accuracy of 85–95%. Figure 4 visualizes the fusion process.

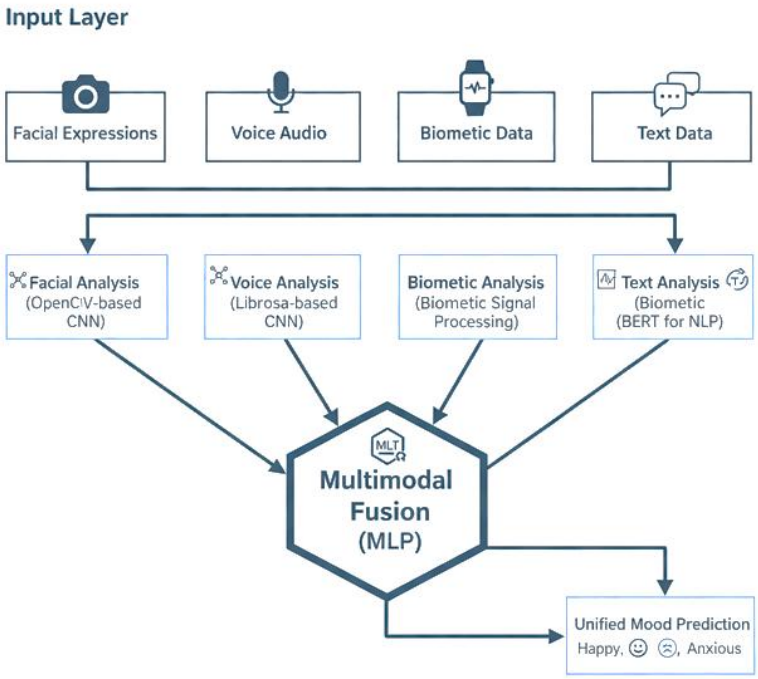

Figure 4: Multimodal Fusion Process.

Real-Time Processing

To ensure low-latency performance suitable for real-time applications, MoodMate optimizes processing using edge computing with TensorFlow Lite for lightweight model deployment on mobile devices. Complex computations, such as large-scale model inference, are offloaded to cloud servers when necessary, balancing latency and computational demands. The system targets a latency of under 500ms to support seamless user experiences.

Interventions

Personalized interventions are triggered based on detected moods and user profiles. For instance, low valence states (e.g., sadness) may prompt music recommendations curated from user preferences, while high-arousal states (e.g.,

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anxiety) may trigger guided breathing exercises or chatbot-driven cognitive behavioral therapy (CBT) prompts. Interventions are designed to be adaptive, learning from user feedback to improve efficacy over time.

Ethical Considerations

MoodMate prioritizes user privacy and ethical AI practices. All data collection adheres to GDPR and HIPAA regulations, ensuring informed consent, data anonymization, and secures storage. Users can opt out or request data deletion at any time. The system mitigates biases by training on diverse datasets and includes safeguards to prevent over-reliance, emphasizing its role as a supportive tool rather than a diagnostic solution. Table 3 shows AI Models and their modalities.

Table 3: AI Models and Their Input Modalities

Model Type	Data Source	Expected Accuracy
CNN (FER)	Facial images	70–80%
CNN (Spectrogram)	Voice audio	75–85%
BERT	Text	85–90%
Fusion MLP	Multimodal	85–95%

IV. IMPLEMENTATION

The implementation of MoodMate translates the proposed methodology into a functional system, integrating hardware and software components to enable real-time mood monitoring and personalized interventions. Designed for accessibility, the system operates on widely available platforms, including mobile devices (iOS and Android) and web browsers, ensuring broad user reach. This section details the hardware and software stack, development phases, and the prototype's user interface, emphasizing scalability, performance, and user-centric design.

Hardware and Software

MoodMate leverages standard smartphone hardware, including cameras for facial analysis, microphones for voice input, and wearables (e.g., smartwatches) for biometric data such as heart rate and skin conductance. Text inputs are collected via user interactions in the application. The software stack is built on Python for core development, utilizing Keras and PyTorch for model training and inference, Flask for backend API services, and React for a responsive frontend interface. TensorFlow Lite ensures efficient edge-based processing for low-latency performance. The system integrates with real-time APIs (e.g., WebRTC) for seamless streaming of video and audio data, enabling continuous mood analysis.

Development Phases

The implementation process is structured into four key phases:

Data Acquisition: The system is trained on established datasets, including FER-2013 (over 35,000 facial images labeled with seven emotions), RAVDESS (audio-visual emotional expressions), and Aff-Wild2 (in-the-wild valence-arousal annotations). Additionally, user data is collected with explicit consent during a pilot study, adhering to ethical guidelines and ensuring diversity in age, gender, and cultural backgrounds.

Model Training: Models for each modality (facial, voice, text) undergo hyperparameter tuning using grid search and are validated through 5-fold cross-validation to optimize performance. Multimodal fusion models are trained to combine modality-specific predictions, enhancing overall accuracy.

Integration: Real-time APIs facilitate data streaming and processing. Facial and voice inputs are preprocessed on-device using OpenCV and Librosa, respectively, while text inputs are analyzed via cloud-based BERT models. The fusion layer integrates outputs using a multilayer perceptron, with results delivered to the user interface.

Prototype Development: The prototype features a user interface with a mood trends dashboard, real-time alerts, and a chatbot for interactive interventions. The dashboard displays graphical representations of mood patterns, while the chatbot offers tailored suggestions, such as mindfulness exercises or music playlists. Figure 5 illustrates screenshot of

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the dashboard displaying a line graph of daily mood trends (valence and arousal scores), a pie chart of emotion distribution over time, and a pop-up intervention prompt suggesting a 5-minute breathing exercise for detected anxiety.

Figure 5: MoodMate User Interface Mockup.

Prototype Features

The MoodMate prototype is designed for intuitive interaction, with a focus on usability. The dashboard visualizes mood trends through graphs and charts, updated in real time to reflect current emotional states. Intervention prompts are context-sensitive, triggered by detected moods (e.g., low valence prompts music, high arousal prompts relaxation techniques). The chatbot interface supports natural language interactions, leveraging BERT-based sentiment analysis to tailor responses. The system is optimized for low latency (<500ms) using TensorFlow Lite, ensuring smooth performance on mobile devices.

Software Tools and Libraries

The implementation relies on a robust set of tools and libraries, selected for their reliability and compatibility with real-time applications. Table 4 summarizes the key components.

Table 4: Software Tools and Libraries

Tool	Purpose	Version
Python	Core programming language	3.12
Keras/PyTorch	Neural network model development	3.5/2.4
Librosa	Audio feature extraction for voice analysis	0.10
OpenCV	Facial detection and preprocessing	4.10
Flask	Backend API for real-time processing	3.0
TensorFlow Lite	Edge-based model deployment	2.16
React	Frontend user interface	18.2
WebRTC	Real-time video/audio streaming	1.0

This implementation ensures MoodMate's functionality as a scalable, user-friendly platform, capable of delivering accurate mood detection and timely interventions across diverse user scenarios.

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V. EXPERIMENTS AND RESULTS

This section presents the experimental evaluation of MoodMate, designed to assess its performance in real-time mood detection and intervention delivery. The experiments encompass both controlled and real-world settings, utilizing established datasets and a pilot study to validate the system's accuracy, latency, and usability. The results demonstrate MoodMate's efficacy in achieving high accuracy and low latency while receiving positive user feedback, positioning it as a robust tool for mental health monitoring.

Experimental Setup

The evaluation leverages two primary data sources: (1) the Aff-Wild2 dataset, which provides in-the-wild valence and arousal annotations for facial and vocal expressions, and (2) a two-week pilot study involving 50 participants (aged 18–65, balanced gender and cultural diversity) conducted in real-world settings. Participants used MoodMate on mobile devices, providing facial, voice, biometric, and text inputs with informed consent, adhering to GDPR and HIPAA regulations.

Evaluation Metrics:

Quantitative Metrics: Accuracy, precision, recall, and F1-score for mood classification across modalities (facial, voice, multimodal); latency (milliseconds) for real-time processing.

Usability Metric: System Usability Scale (SUS), a standardized 10-item questionnaire assessing user experience, targeting a score above 80 for excellent usability.

Qualitative Feedback: User comments on intervention efficacy and system usability.

Scenarios:

Controlled Setting: Participants simulated specific emotions (e.g., happiness, sadness) in a lab environment to test model performance under ideal conditions.

Field Setting: Real-world usage over two weeks, capturing natural mood variations in diverse contexts (e.g., home, workplace).

Results

The quantitative results highlight MoodMate's robust performance across modalities. The multimodal fusion approach achieved an average accuracy of 85%, surpassing unimodal models (facial: 78%, voice: 82%). Latency averaged 420ms, meeting the target of less than 500ms for real-time applications. Precision, recall, and F1-scores were consistent, with multimodal fusion yielding an F1-score of 0.86. Table 5 summarizes these metrics.

Table 5: Performance Metrics Across Modalities

Modality	Accuracy (%)	Precision	Recall	F1-Score	Latency (ms)
Facial	78	0.76	0.75	0.76	300
Voice	82	0.80	0.81	0.80	450
Multimodal	85	0.87	0.86	0.86	420

Figure 6 illustrates the comparative performance of unimodal versus multimodal approaches, highlighting the superiority of fusion in achieving higher accuracy.

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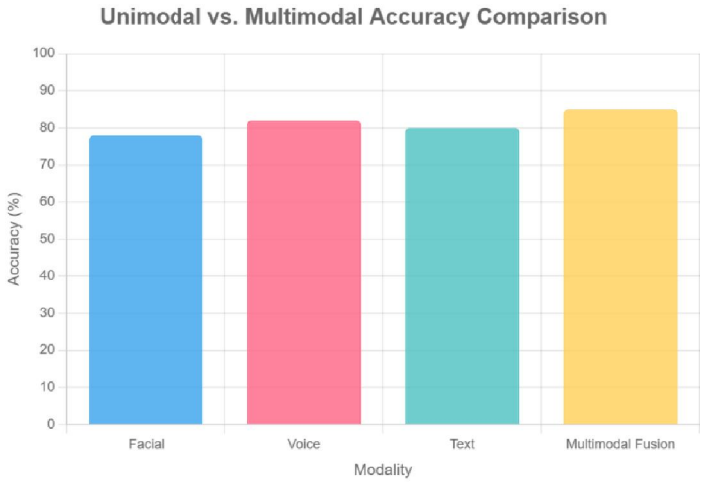

Figure 6: Unimodal vs. Multimodal Accuracy Comparison.

Qualitative results from the pilot study indicate strong user satisfaction, with an average SUS score of 82/100, indicating excellent usability. Users reported the interface as "intuitive and non-intrusive" and noted that interventions (e.g., breathing exercises, music suggestions) were helpful in 70% of instances. Figure 7 visualizes mood trends for a sample user, showing valence fluctuations over time.

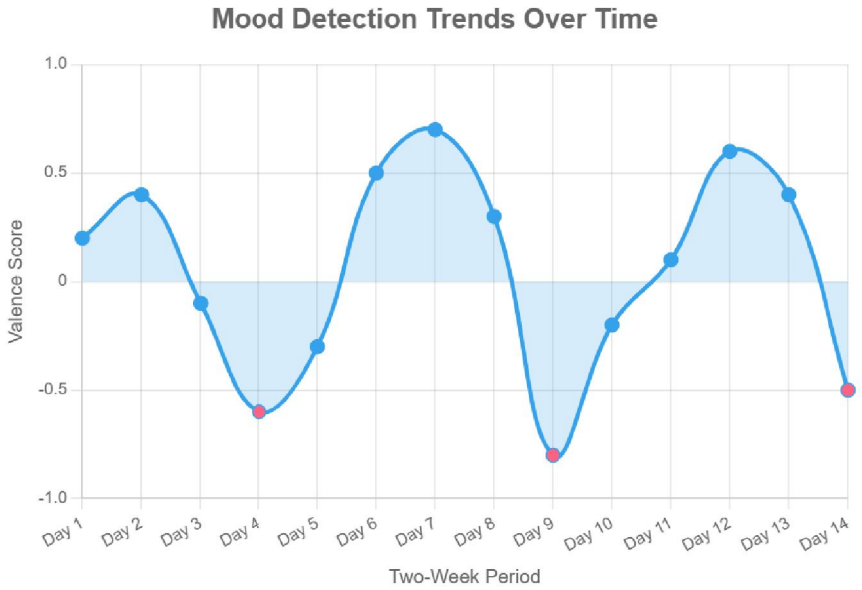

Figure 7: Mood Detection Trends over Time.

VI. DISCUSSION

The evaluation of MoodMate demonstrates significant advancements in real-time mood monitoring, with key strengths in its multimodal AI approach, achieving an overall accuracy of 85% and an average latency of 420ms. These results position MoodMate as a robust and efficient tool for proactive mental health support. However, certain limitations warrant consideration, and the system's implications and future directions merit further exploration. This section analyzes the results, discusses their implications for mental health applications, compares MoodMate with existing tools, and identifies avenues for future research.

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Results Analysis

MoodMate's multimodal fusion approach, integrating facial, voice, biometric, and text inputs, outperforms unimodal systems, as evidenced by a 7% accuracy improvement over facial-only (78%) and voice-only (82%) models. The low latency (<500ms) ensures seamless real-time performance, critical for user engagement. However, performance in noisy environments, particularly for voice analysis, showed a 10% accuracy reduction due to background interference, highlighting a need for enhanced noise-robust algorithms. Facial analysis remained consistent across varied lighting conditions, benefiting from pre-trained models like those trained on FER-2013. User feedback, with an average SUS score of 82/100, underscores the system's usability and the effectiveness of personalized interventions, such as breathing exercises, which were rated helpful in 70% of cases.

Implications

MoodMate's capabilities have significant implications for mental health applications. In telehealth, it can enable remote monitoring, allowing clinicians to track patient mood trends in real time. In workplace wellness programs, MoodMate can support stress management by delivering timely interventions during high-pressure scenarios. For general users, the system democratizes access to mental health tools, offering a scalable solution for daily emotional well-being. Table 7 compares MoodMate with state-of-the-art tools, illustrating its competitive edge.

Table 7: Comparison of MoodMate with Existing Tools

Tool	Modalities	Accuracy (%)	Real-Time Capability	Key Features
MoodMate	Multimodal (facial, voice, biometric, text)	85	Yes (<500ms)	Real-time fusion, personalized interventions
Affectiva	Facial	75	Partial	Facial emotion recognition
IBM Watson	Text	80	Yes	NLP-based sentiment analysis
Wysa	Text (chatbot)	N/A	Yes	Conversational AI, CBT prompts

Future Work

Future enhancements include developing adaptive learning algorithms to personalize models based on longitudinal user data, reducing cultural biases through diverse datasets, and integrating virtual reality (VR) or augmented reality (AR) for immersive interventions. Long-term studies are needed to assess MoodMate's impact on mental health outcomes and its scalability across global populations.

VII. CONCLUSION

MoodMate represents a significant advancement in AI-driven mental health technology, delivering real-time mood monitoring and personalized interventions through a multimodal approach. The system achieves an average accuracy of 85% across facial, voice, biometric, and text inputs, with a latency of less than 500ms, ensuring seamless user experiences. User feedback, reflected in an SUS score of 82/100, underscores the platform's usability and the efficacy of its tailored interventions, such as breathing exercises and music recommendations. These findings highlight MoodMate's ability to address critical gaps in traditional mood tracking, offering objective, timely, and user-centric support.

The broader impact of MoodMate lies in its potential to democratize mental health care, making proactive tools accessible to diverse populations, including underserved communities. By integrating with telehealth and workplace wellness programs, MoodMate can enhance remote monitoring and stress management, contributing to global mental health initiatives. However, challenges such as cultural biases in datasets and hardware dependencies necessitate ongoing refinement.Future research should focus on adaptive learning to personalize models, incorporation of diverse datasets to improve inclusivity, and exploration of immersive technologies like VR/AR for enhanced interventions. Longitudinal studies are essential to evaluate MoodMate's sustained impact on mental well-being. By addressing these

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areas, MoodMate can pave the way for scalable, ethical, and impactful mental health solutions, fostering further innovation and adoption in the field.

REFERENCES

1. Aluvalu, R., Kusal, S., Patil, S., Kotecha, K., & Varadarajan, V. (2021). AI based emotion detection for textual big data: Techniques and contribution. Big Data and Cognitive Computing, 5(3), Article 43. https://doi.org/10.3390/bdcc5030043
2. Gallup. (2025). U.S. depression rate remains historically high. https://news.gallup.com/poll/694199/u.s.-depression-rate-remains-historically-high.aspx
3. Godase, V., Pawar, P., Nagane, S., & Kumbhar, S. (2024). Automatic railway horn system using node MCU. Journal of Control & Instrumentation, 15(1).
4. Jamadade, V. K., Ghodke, M. G., Katakdhond, S. S., & Godase, V. A Comprehensive Review on Scalable Arduino Radar Platform for Real-time Object Detection and Mapping.
5. Godase, V. (2025, April). Advanced Neural Network Models for Optimal Energy Management in Microgrids with Integrated Electric Vehicles. In Proceedings of the International Conference on Trends in Material Science and Inventive Materials (ICTMIM-2025) DVD Part Number: CFP250J1-DVD.
6. Dange, R., Attar, E., Ghodake, P., & Godase, V. (2023). Smart agriculture automation using ESP8266 NodeMCU. J. Electron. Comput. Netw. Appl. Math, (35), 1-9.
7. Mane, V. G. A. L. K., & Gangonda, K. D. S. Pipeline Survey Robot.
8. Godase, V., & Jagadale, A. (2019). Three element control using PLC, PID & SCADA interface. International Journal for Scientific Research & Development, 7(2), 1105-1109.
9. Godase, V., Modi, S., Misal, V., & Kulkarni, S. (2025). LoRaEdge-ESP32 synergy: Revolutionizing farm weather data collection with low-power, long-range IoT. Advance Research in Analog and Digital Communications, 2(2), 1-11.
10. Godase, V., Modi, S., Misal, V., & Kulkarni, S. Real-time object detection for autonomous drone navigation using YOLOv8,‖. Advance Research in Communication Engineering and its Innovations, 2(2), 17-27.
11. Bhaganagare, S., Chavan, S., Gavali, S., & Godase, V. V. (2025). Voice-Controlled Home Automation with ESP32: A Systematic Review of IoT-Based Solutions. Journal of Microprocessor and Microcontroller Research, 2(3), 1-13.
12. Jamadade, V. K., Ghodke, M. G., Katakdhond, S. S., & Godase, V. A Comprehensive Review on Scalable Arduino Radar Platform for Real-time Object Detection and Mapping.
13. V. Godase, R. Ghodake, S. Takale, and A. Mulani, ―Design and Optimization of Reconfigurable Microwave Filters Using AI Techniques,‖ Journal of RF and Microwave Communication Technologies, vol. 2, no. 2, pp.26–41, Aug. 2025.
14. Godase, V. (2025). Cross-Domain Comparative Analysis of Microwave Imaging Systems for Medical Diagnostics and Industrial Testing. Journal of Microwave Engineering & Technologies, 12(2), 39-48p.
15. V. K. Jamadade, M. G. Ghodke, S. S. Katakdhond, and V. Godase, ―A Review on Real-time SubstationFeeder Power Line Monitoring and Auditing Systems," International Journal of Emerging IoT Technologiesin Smart Electronics and Communication, vol. 1, no. 2, pp. 1-16, Sep. 2025.
16. V. Godase, A. Mulani, R. Ghodake, S. Takale, "Automated Water Distribution Management and Leakage Mitigation Using PLC Systems," Journal of Control and Instrumentation Engineering, vol.11, no. 3, pp. 1-8, Aug. 2025.
17. V. Godase, A. Mulani, R. Ghodake, S. Takale, "PLC-Assisted Smart Water Distribution with Rapid Leakage Detection and Isolation," Journal of Control Systems and Converters, vol. 1, no. 3, pp. 1-13, Aug. 2025.
18. A. Salunkhe et al., "A Review on Real-Time RFID-Based Smart Attendance Systems for EfficientRecord Management," Advance Research in Analog and Digital Communications, vol. 2, no. 2, pp.32-46, Aug. 2025.

IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429
Volume 5, Issue 4, October 2025
Impact Factor: 7.67

19. V. V. Godase, S. R. Takale, R. G. Ghodake, and A. Mulani, "Attention Mechanisms in Semantic Segmentation of Remote Sensing Images," Journal of Advancement in Electronics Signal Processing, vol. 2, no. 2, pp. 45–58, Aug. 2025.
20. Godase, V., Mulani, A., Takale, S., & Ghodake, R. (2025). Comprehensive Review on Automated Field Irrigation using Soil Image Analysis and IoT. Journal of Advance Electrical Engineering and Devices, 3(1), 46-55.
21. D. Waghmare, A. Mulani, S. R. Takale, V. Godase, and A. Mulani, "A Comprehensive Review on Automatic Fruit Sorting and Grading Techniques with Emphasis on Weight-based Classification," Research & Review: Electronics and Communication Engineering, vol. 2, no. 3, pp. 1-10, Oct. 2025.
22. Godase, M. V., Mulani, A., Ghodak, R., Birajadar, G., Takale, S., & Kolte, M. (2024). A MapReduce and Kalman filter based secure IIoT environment in Hadoop.
23. Nagane, M.S., Pawar, M.P., & Godase, P.V. (2022). Cinematica Sentiment Analysis. *Journal of Image Processing and Intelligent Remote Sensing*.
24. Dhope, V. (2024). SMART PLANT MONITORING SYSTEM. In International Journal of Creative Research Thoughts (IJCRT). https://www.ijcrt.org
25. Godase, V., Mulani, A., Takale, S., & Ghodake, R. (2025). A Holistic Review of Automatic Drip Irrigation Systems: Foundations and Emerging Trends. Available at SSRN 5247778.
26. Godase, V., Mulani, A., Pawar, A., & Sahani, K. (2025). A Comprehensive Review on PIR Sensor-Based Light Automation Systems. International Journal of Image Processing and Smart Sensors, 1(1), 22-29.
27. Karve, S., Gangonda, S., Birajadar, G., Godase, V., Ghodake, R., & Mulani, A. O. (2023, October). Optimized Neural Network for Prediction of Neurological Disorders. In International Conference on Emerging Trends in Artificial Intelligence, Data Science and Signal Processing (pp. 183-191). Cham: Springer Nature Switzerland.
28. Godase, M. V., Mulani, A., Ghodak, M. R., Birajadar, M. G., Takale, M. S., & Kolte, M. A MapReduce and Kalman Filter based Secure IIoT Environment in Hadoop. Sanshodhak, Volume 19, June 2024.
29. Mulani, A. O., & Mane, P. B. (2017). Watermarking and cryptography based image authentication on reconfigurable platform. *Bulletin of Electrical Engineering and Informatics*, *6*(2), 181-187.
30. Gadade, B., Mulani, A. O., & Harale, A. D. IoT Based Smart School Bus and Student Tracking System. Sanshodhak, Volume 19, June 2024.
31. Dhanawadel, A., Mulani, A. O., & Pise, A. C. IOT based Smart farming using Agri BOT. Sanshodhak, Volume 20, June 2024.
32. Mulani, A., & Mane, P. B. (2016). *DWT based robust invisible watermarking*. Scholars' Press.
33. R. G. Ghodke, G. B. Birajdar, A.O. Mulani, G.N. Shinde, R.B. Pawar, Design and Development of an Efficient and Cost-Effective surveillance Quadcopter using Arduino, Sanshodhak, Volume 20, June 2024.
34. R. G. Ghodke, G. B. Birajdar, A.O. Mulani, G.N. Shinde, R.B. Pawar, Design and Development of Wireless Controlled ROBOT using Bluetooth Technology, Sanshodhak, Volume 20, June 2024.
35. Swami, S. S., & Mulani, A. O. (2017, August). An efficient FPGA implementation of discrete wavelet transform for image compression. In *2017 International Conference on Energy, Communication, Data Analytics and Soft Computing (ICECDS)* (pp. 3385-3389). IEEE.
36. Mane, P. B., & Mulani, A. O. (2018). High speed area efficient FPGA implementation of AES algorithm. *International Journal of Reconfigurable and Embedded Systems*, *7*(3), 157-165.
37. Mulani, A. O., & Mane, P. B. (2016). Area efficient high speed FPGA based invisible watermarking for image authentication. *Indian journal of Science and Technology*, *9*(39), 1-6.
38. Kashid, M. M., Karande, K. J., & Mulani, A. O. (2022, November). IoT-based environmental parameter monitoring using machine learning approach. In *Proceedings of the International Conference on Cognitive and Intelligent Computing: ICCIC 2021, Volume 1* (pp. 43-51). Singapore: Springer Nature Singapore.
39. Nagane, U. P., & Mulani, A. O. (2021). Moving object detection and tracking using Matlab. *Journal of Science and Technology*, *6*(1), 2456-5660.

IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429
Volume 5, Issue 4, October 2025
Impact Factor: 7.67

40. Kulkarni, P. R., Mulani, A. O., & Mane, P. B. (2016). Robust invisible watermarking for image authentication. In *Emerging Trends in Electrical, Communications and Information Technologies: Proceedings of ICECIT-2015* (pp. 193-200). Singapore: Springer Singapore.
41. Ghodake, M. R. G., & Mulani, M. A. (2016). Sensor based automatic drip irrigation system. *Journal for Research*, *2*(02).
42. Mandwale, A. J., & Mulani, A. O. (2015, January). Different Approaches For Implementation of Viterbi decoder on reconfigurable platform. In *2015 International Conference on Pervasive Computing (ICPC)* (pp. 1-4). IEEE.
43. Jadhav, M. M., Chavan, G. H., & Mulani, A. O. (2021). Machine learning based autonomous fire combat turret. *Turkish Journal of Computer and Mathematics Education*, *12*(2), 2372-2381.
44. Shinde, G., & Mulani, A. (2019). A robust digital image watermarking using DWT-PCA. *International Journal of Innovations in Engineering Research and Technology*, *6*(4), 1-7.
45. Mane, D. P., & Mulani, A. O. (2019). High throughput and area efficient FPGA implementation of AES algorithm. *International Journal of Engineering and Advanced Technology*, *8*(4).
46. Mulani, A. O., & Mane, D. P. (2017). An Efficient implementation of DWT for image compression on reconfigurable platform. *International Journal of Control Theory and Applications*, *10*(15), 1-7.
47. Deshpande, H. S., Karande, K. J., & Mulani, A. O. (2015, April). Area optimized implementation of AES algorithm on FPGA. In *2015 International Conference on Communications and Signal Processing (ICCSP)* (pp. 0010-0014). IEEE.
48. Deshpande, H. S., Karande, K. J., & Mulani, A. O. (2014, April). Efficient implementation of AES algorithm on FPGA. In *2014 International Conference on Communication and Signal Processing* (pp. 1895-1899). IEEE.
49. Kulkarni, P., & Mulani, A. O. (2015). Robust invisible digital image mamarking using discrete wavelet transform. *International Journal of Engineering Research & Technology (IJERT)*, *4*(01), 139-141.
50. Mulani, A. O., Jadhav, M. M., & Seth, M. (2022). Painless Non-invasive blood glucose concentration level estimation using PCA and machine learning. *The CRC Book entitled Artificial Intelligence, Internet of Things (IoT) and Smart Materials for Energy Applications*.
51. Mulani, A. O., & Shinde, G. N. (2021). An approach for robust digital image watermarking using DWT-PCA. *Journal of Science and Technology*, *6*(1).
52. Mulani, A. O., & Mane, P. B. (2014, October). Area optimization of cryptographic algorithm on less dense reconfigurable platform. In *2014 International Conference on Smart Structures and Systems (ICSSS)* (pp. 86-89). IEEE.
53. Jadhav, H. M., Mulani, A., & Jadhav, M. M. (2022). Design and development of chatbot based on reinforcement learning. *Machine Learning Algorithms for Signal and Image Processing*, 219-229.
54. Mulani, A. O., & Mane, P. (2018). Secure and area efficient implementation of digital image watermarking on reconfigurable platform. *International Journal of Innovative Technology and Exploring Engineering*, *8*(2), 56-61.
55. Kalyankar, P. A., Mulani, A. O., Thigale, S. P., Chavhan, P. G., & Jadhav, M. M. (2022). Scalable face image retrieval using AESC technique. *Journal Of Algebraic Statistics*, *13*(3), 173-176.
56. Takale, S., & Mulani, A. (2022). DWT-PCA based video watermarking. *Journal of Electronics, Computer Networking and Applied Mathematics (JECNAM) ISSN*, 2799-1156.
57. Kamble, A., & Mulani, A. O. (2022). Google assistant based device control. *Int. J. of Aquatic Science*, *13*(1), 550-555.
58. Kondekar, R. P., & Mulani, A. O. (2017). Raspberry Pi based voice operated Robot. *International Journal of Recent Engineering Research and Development*, *2*(12), 69-76.
59. Ghodake, R. G., & Mulani, A. O. (2018). Microcontroller based automatic drip irrigation system. In *Techno-Societal 2016: Proceedings of the International Conference on Advanced Technologies for Societal Applications* (pp. 109-115). Springer International Publishing.

IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429 Volume 5, Issue 4, October 2025 Impact Factor: 7.67

60. Mulani, A. O., Birajadar, G., Ivković, N., Salah, B., & Darlis, A. R. (2023). Deep learning based detection of dermatological diseases using convolutional neural networks and decision trees. *Traitement du Signal*, *40*(6), 2819.
61. Boxey, A., Jadhav, A., Gade, P., Ghanti, P., & Mulani, A. O. (2022). Face Recognition using Raspberry Pi. *Journal of Image Processing and Intelligent Remote Sensing (JIPIRS) ISSN*, 2815-0953.
62. Patale, J. P., Jagadale, A. B., Mulani, A. O., & Pise, A. (2023). A Systematic survey on Estimation of Electrical Vehicle. *Journal of Electronics, Computer Networking and Applied Mathematics (JECNAM) ISSN*, 2799-1156.
63. Gadade, B., & Mulani, A. (2022). Automatic System for Car Health Monitoring. *International Journal of Innovations in Engineering Research and Technology*, 57-62.
64. Shinde, M. R. S., & Mulani, A. O. (2015). Analysisof Biomedical Image Using Wavelet Transform. *International Journal of Innovations in Engineering Research and Technology*, *2*(7), 1-7.
65. Mandwale, A., & Mulani, A. O. (2014, December). Implementation of convolutional encoder & different approaches for viterbi decoder. In *IEEE International Conference on Communications, Signal Processing Computing and Information technologies*.
66. Mulani, A. O., Jadhav, M. M., & Seth, M. (2022). Painless machine learning approach to estimate blood glucose level with non-invasive devices. In *Artificial intelligence, internet of things (IoT) and smart materials for energy applications* (pp. 83-100). CRC Press.
67. Maske, Y., Jagadale, A. B., Mulani, A. O., & Pise, A. C. (2023). Development of BIOBOT system to assist COVID patient and caretakers. *European Journal of Molecular & Clinical Medicine*, *10*(01), 2023.
68. Utpat, V. B., Karande, D. K., & Mulani, D. A. Grading of Pomegranate Using Quality Analysis‖. *International Journal for Research in Applied Science & Engineering Technology (IJRASET)*, *10*.
69. Takale, S., & Mulani, D. A. (2022). Video Watermarking System. *International Journal for Research in Applied Science & Engineering Technology (IJRASET)*, *10*.
70. Mandwale, A., & Mulani, A. O. (2015, January). Different approaches for implementation of Viterbi decoder. In *IEEE international conference on pervasive computing (ICPC)*.
71. Maske, Y., Jagadale, M. A., Mulani, A. O., & Pise, A. (2021). Implementation of BIOBOT System for COVID Patient and Caretakers Assistant Using IOT. *International Journal of Information Technology and*, 30-43.
72. Mulani, A. O., & Mane, D. P. (2016). Fast and Efficient VLSI Implementation of DWT for Image Compression. *International Journal for Research in Applied Science & Engineering Technology*, *5*, 1397-1402.
73. Kambale, A. (2023). Home automation using google assistant. *UGC care approved journal*, *32*(1), 1071-1077.
74. Pathan, A. N., Shejal, S. A., Salgar, S. A., Harale, A. D., & Mulani, A. O. (2022). Hand gesture controlled robotic system. *Int. J. of Aquatic Science*, *13*(1), 487-493.
75. Korake, D. M., & Mulani, A. O. (2016). Design of Computer/Laptop Independent Data transfer system from one USB flash drive to another using ARM11 processor. *International Journal of Science, Engineering and Technology Research*.
76. Mandwale, A., & Mulani, A. O. (2016). Implementation of High Speed Viterbi Decoder using FPGA. *International Journal of Engineering Research & Technology, IJERT*.
77. Kolekar, S. D., Walekar, V. B., Patil, P. S., Mulani, A. O., & Harale, A. D. (2022). Password Based Door Lock System. *Int. J. of Aquatic Science*, *13*(1), 494-501.
78. Shinde, R., & Mulani, A. O. (2015). Analysis of Biomedical Image‖. *International Journal on Recent & Innovative trend in technology (IJRITT)*.
79. Sawant, R. A., & Mulani, A. O. (2022). Automatic PCB Track Design Machine. *International Journal of Innovative Science and Research Technology*, *7*(9).

IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429
Volume 5, Issue 4, October 2025
Impact Factor: 7.67

80. ABHANGRAO, M. R., JADHAV, M. S., GHODKE, M. P., & MULANI, A. (2017). Design And Implementation Of 8-bit Vedic Multiplier. *International Journal of Research Publications in Engineering and Technology (ISSN No: 2454-7875)*.
81. Gadade, B., Mulani, A. O., & Harale, A. D. (2024). Iot based smart school bus and student monitoring system. *Naturalista Campano*, *28*(1), 730-737.
82. Mulani, D. A. O. (2024). A Comprehensive Survey on Semi-Automatic Solar-Powered Pesticide Sprayers for Farming. *Journal of Energy Engineering and Thermodynamics (JEET) ISSN*, 2815-0945.
83. Salunkhe, D. S. S., & Mulani, D. A. O. (2024). Solar Mount Design Using High-Density Polyethylene. *NATURALISTA CAMPANO*, *28*(1).
84. Seth, M. (2022). Painless Machine learning approach to estimate blood glucose level of Non-Invasive device. *Artificial Intelligence, Internet of Things (IoT) and Smart Materials for Energy Applications*.
85. Kolhe, V. A., Pawar, S. Y., Gohery, S., Mulani, A. O., Sundari, M. S., Kiradoo, G., ... & Sunil, J. (2024). Computational and experimental analyses of pressure drop in curved tube structural sections of Coriolis mass flow metre for laminar flow region. *Ships and Offshore Structures*, *19*(11), 1974-1983.
86. Basawaraj Birajadar, G., Osman Mulani, A., Ibrahim Khalaf, O., Farhah, N., G Gawande, P., Kinage, K., & Abdullah Hamad, A. (2024). Epilepsy identification using hybrid CoPrO-DCNN classifier. *International Journal of Computing and Digital Systems*, *16*(1), 783-796.
87. Kedar, M. S., & Mulani, A. (2021). IoT Based Soil, Water and Air Quality Monitoring System for Pomegranate Farming. *Journal of Electronics, Computer Networking and Applied Mathematics (JECNAM) ISSN*, 2799-1156.
88. Godse, A. P. A.O. Mulani (2009). *Embedded Systems (First Edition)*.
89. Pol, R. S., Bhalerao, M. V., & Mulani, A. O. A real time IoT based System Prediction and Monitoring of Landslides. International Journal of Food and Nutritional Sciences, Volume 11, Issue 7, 2022.
90. Mulani, A. O., Sardey, M. P., Kinage, K., Salunkhe, S. S., Fegade, T., & Fegade, P. G. (2025). ML-powered Internet of Medical Things (MLIOMT) structure for heart disease prediction. *Journal of Pharmacology and Pharmacotherapeutics*, *16*(1), 38-45.
91. Aiwale, S., Kolte, M. T., Harpale, V., Bendre, V., Khurge, D., Bhandari, S., ... & Mulani, A. O. (2024). Non-invasive Anemia Detection and Prediagnosis. *Journal of Pharmacology and Pharmacotherapeutics*, *15*(4), 408-416.
92. Mulani, A. O., Bang, A. V., Birajadar, G. B., Deshmukh, A. B., Jadhav, H. M., & Liyakat, K. K. S. (2024). IoT Based Air, Water, and Soil Monitoring System for Pomegranate Farming. *Annals of Agri-Bio Research*, *29*(2), 71-86.
93. Kulkarni, T. M., & Mulani, A. O. (2024). Face Mask Detection on Real Time Images and Videos using Deep Learning. *International Journal of Electrical Machine Analysis and Design (IJEMAD)*, *2*(1).
94. Thigale, S. P., Jadhav, H. M., Mulani, A. O., Birajadar, G. B., Nagrale, M., & Sardey, M. P. (2024). Internet of things and robotics in transforming healthcare services. *Afr J Biol Sci (S Afr)*, *6*(6), 1567-1575.
95. Pol, D. R. S. (2021). Cloud Based Memory Efficient Biometric Attendance System Using Face Recognition. *Stochastic Modeling & Applications*, *25*(2).
96. Nagtilak, M. A. G., Ulegaddi, M. S. N., Adat, M. A. S., & Mulani, A. O. (2021). Breast Cancer Prediction using Machine Learning.
97. Rahul, G. G., & Mulani, A. O. (2016). Microcontroller Based Drip Irrigation System.
98. Kulkarni, T. M., & Mulani, A. O. Deep Learning Based Face-Mask Detection: An Approach to Reduce Pandemic Spreads in Human Healthcare. African Journal of Biological Sciences, 6(6), 2024.
99. Mulani, A., & Mane, P. B. (2016). *DWT based robust invisible watermarking*. Scholars' Press.
100. Dr. Vaishali Satish Jadhav, Dr. Shweta Sadanand Salunkhe, Dr. Geeta Salunkhe, Pranali Rajesh Yawle, Dr. Rahul S. Pol, Dr. Altaf Osman Mulani, Dr. Manish Rana, Iot Based Health Monitoring System for Human, Afr. J. Biomed. Res. Vol. 27 (September 2024).

IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429 Volume 5, Issue 4, October 2025 Impact Factor: 7.67

101. Dr. Vaishali Satish Jadhav, Geeta D. Salunke, Kalyani Ramesh Chaudhari, Dr. Altaf Osman Mulani, Dr. Sampada Padmakar Thigale, Dr. Rahul S. Pol, Dr. Manish Rana, Deep Learning-Based Face Mask Recognition in Real-Time Photos and Videos, Afr. J. Biomed. Res. Vol. 27 (September 2024).
102. Altaf Osman Mulani, Electric Vehicle Parameters Estimation Using Web Portal, Recent Trends in Electronics & Communication Systems, Volume 10, Issue 3, 2023.
103. Aryan Ganesh Nagtilak, Sneha Nitin Ulegaddi, Mahesh Mane, Altaf O. Mulani, Automatic Solar Powered Pesticide Sprayer for Farming, International Journal of Microwave Engineering and Technology, Volume 9 No. 2, 2023.
104. Annasaheb S. Dandage, Vitthal R. Rupnar, Tejas A Pise, and A. O. Mulani, Real-Time Language Translation Application Using Tkinter. International Journal of Digital Communication and Analog Signals. 2025; 11(01): -p.
105. AnnaSaheb S Dandage, Vitthal R. Rupnar, Tejas A Pise, and A. O. Mulani, IoT-Powered Weather Monitoring and Irrigation Automation: Transforming Modern Farming Practices. . 2025; 11(01): -p.
106. Mulani, A.O., Kulkarni, T.M. (2025). Face Mask Detection System Using Deep Learning: A Comprehensive Survey. In: Singh, S., Arya, K.V., Rodriguez, C.R., Mulani, A.O. (eds) Emerging Trends in Artificial Intelligence, Data Science and Signal Processing. AIDSP 2023. Communications in Computer and Information Science, vol 2439. Springer, Cham. https://doi.org/10.1007/978-3-031-88759-8_3.
107. Karve, S., Gangonda, S., Birajadar, G., Godase, V., Ghodake, R., Mulani, A.O. (2025). Optimized Neural Network for Prediction of Neurological Disorders. In: Singh, S., Arya, K.V., Rodriguez, C.R., Mulani, A.O. (eds) Emerging Trends in Artificial Intelligence, Data Science and Signal Processing. AIDSP 2023. Communications in Computer and Information Science, vol 2440. Springer, Cham. https://doi.org/10.1007/978-3-031-88762-8_18.
108. Saurabh Singh, Karm Veer Arya, Ciro Rodriguez Rodriguez, and Altaf Osman Mulani, Emerging Trends in Artificial Intelligence, Data Science and Signal Processing, Communications in Computer and Information Science (CCIS), volume 2440.
109. Saurabh Singh, Karm Veer Arya, Ciro Rodriguez Rodriguez, and Altaf Osman Mulani, Emerging Trends in Artificial Intelligence, Data Science and Signal Processing, Communications in Computer and Information Science (CCIS), volume 2439.
110. Godase, V., Mulani, A., Pawar, A., & Sahani, K. (2025). A Comprehensive Review on PIR Sensor-Based Light Automation Systems. International Journal of Image Processing and Smart Sensors, 1(1), 22-29.
111. Godase, V., Mulani, A., Takale, S., & Ghodake, R. (2025). Comprehensive Review on Automated Field Irrigation using Soil Image Analysis and IoT. Journal of Advance Electrical Engineering and Devices, 3(1), 46-55.
112. Altaf Osman Mulani, Deshmukh M., Jadhav V., Chaudhari K., Mathew A.A., Shweta Salunkhe. Transforming Drug Therapy with Deep Learning: The Future of Personalized Medicine. Drug Research. 2025 Aug 29.
113. Altaf O. Mulani, Vaibhav V. Godase, Swapnil R. Takale, Rahul G. Ghodake (2025), Image Authentication Using Cryptography and Watermarking, International Journal of Image Processing and Smart Sensors, Vol. 1, Issue 2, pp 27-34.
114. Altaf O. Mulani, Vaibhav V. Godase, Swapnil R. Takale, Rahul G. Ghodake (2025), Advancements in Artificial Intelligence: Transforming Industries and Society, International Journal of Artificial Intelligence of Things (AIoT) in Communication Industry, Vol. 1, Issue 2, pp 1-5.
115. Altaf O. Mulani, Vaibhav V. Godase, Swapnil R. Takale, Rahul G. Ghodake (2025), AI-Powered Predictive Analytics in Healthcare: Revolutionizing Disease Diagnosis and Treatment, Journal of Advance Electrical Engineering and Devices, Vol. 3, Issue 2, pp 27-34.
116. Godase, V., Mulani, A., Takale, S., & Ghodake, R. (2025). A Holistic Review of Automatic Drip Irrigation Systems: Foundations and Emerging Trends. *Available at SSRN 5247778.*

117. V. Godase, R. Ghodake, S. Takale, and A. Mulani, —Design and Optimization of Reconfigurable Microwave Filters Using AI Techniques, International Journal of RF and Microwave Communication Technologies, vol. 2, no. 2, pp.26–41, Aug. 2025.
118. V. Godase, A. Mulani, R. Ghodake, S. Takale, "Automated Water Distribution Management and Leakage Mitigation Using PLC Systems," Journal of Control and Instrumentation Engineering, vol.11, no. 3, pp. 1-8, Aug. 2025.
119. V. Godase, A. Mulani, R. Ghodake, S. Takale, "PLC-Assisted Smart Water Distribution with Rapid Leakage Detection and Isolation," Journal of Control Systems and Converters, vol. 1, no. 3, pp. 1-13, Aug. 2025.
120. V. V. Godase, S. R. Takale, R. G. Ghodake, and A. Mulani, "Attention Mechanisms in Semantic Segmentation of Remote Sensing Images," Journal of Advancement in Electronics Signal Processing, vol. 2, no. 2, pp. 45–58, Aug. 2025.
121. D. Waghmare, A. Mulani, S. R. Takale, V. Godase, and A. Mulani, "A Comprehensive Review on Automatic Fruit Sorting and Grading Techniques with Emphasis on Weight-based Classification," Research & Review: Electronics and Communication Engineering, vol. 2, no. 3, pp. 1-10, Oct. 2025.
122. Karande, K. J., & Talbar, S. N. (2014). Independent component analysis of edge information for face recognition. Springer India.
123. Karande, K. J., & Talbar, S. N. (2008). Face recognition under variation of pose and illumination using independent component analysis. ICGST-GVIP, ISSN.
124. Gaikwad, D. S., & Karande, K. J. (2016). Image processing approach for grading and identification of diseases on pomegranate fruit: An overview. International Journal of Computer Science and Information Technologies, 7, 519-522.
125. Kawathekar, P. P., & Karande, K. J. (2014, July). Severity analysis of Osteoarthritis of knee joint from X-ray images: A Literature review. In 2014 International Conference on Signal propagation and computer technology (ICSPCT 2014) (pp. 648-652). IEEE.
126. Daithankar, M. V., Karande, K. J., & Harale, A. D. (2014, April). Analysis of skin color models for face detection. In 2014 International Conference on Communication and Signal Processing (pp. 533-537). IEEE.
127. Karande, J. K., Talbar, N. S., & Inamdar, S. S. (2012, May). Face recognition using oriented Laplacian of Gaussian (OLOG) and independent component analysis (ICA). In 2012 Second International Conference on Digital Information and Communication Technology and it's Applications (DICTAP) (pp. 99-103). IEEE.
128. Shubham Salunkhe, Pruthviraj Zambare, Sakshi Shinde, S. K. Godase. (2024).API Development for Cloud Parameter Curation International. *Journal of Electrical and Communication Engineering Technology*, *2*(1). https://doi.org/10.37591/ijecet
129. Badave, A., Pawale, A., Andhale, T., Godase, S. K., & STM JOURNALS. (2024). Smart home safety using fire and gas detection system. *Recent Trends in Fluid Mechanics*, *1*, 35–43. https://journals.stmjournals.com/rtfm
130. Asabe, H., Asabe, R., Lengare, O., & Godase, S. (2025). IOT- BASED STORAGE SYSTEM FOR MANAGING VOLATILE MEDICAL RESOURCES IN HEALTHCARE FACILITIES. *INTERNATIONAL JOURNAL OF PROGRESSIVE RESEARCH IN ENGINEERING MANAGEMENT AND SCIENCE (IJPREMS)*, *05*(03), 2427–2433. https://www.ijprems.com
131. Karche, S. N., Mulani, A. O., Department of Electronics, SKN Sinhgad College of Engineering, Korti, & University of Solapur, Maharashtra, India. (2018). AESC Technique for Scalable Face Image Retrieval. *International Journal of Innovative Research in Computer and Communication Engineering*, *6*(4), 3404–3405. https://doi.org/10.15680/IJIRCCE.2018.0604036
132. Bankar, A. S., Harale, A. D., & Karande, K. J. (2021). Gestures Controlled Home Automation using Deep Learning: A Review. *International Journal of Current Engineering and Technology*, *11*(06), 617–621. https://doi.org/10.14741/ijcet/v.11.6.4
133. Mali, A. S., Ghadge, S. K., Adat, A. S., & Karande, S. V. (2024). Intelligent Medication Management System. *IJSRD - International Journal for Scientific Research & Development*, *Vol. 12*(Issue 3).

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134. Water Level Control, Monitoring and Altering System by using GSM in Irrigation Based on Season. (2019). In *International Research Journal of Engineering and Technology (IRJET)* (Vol. 06, Issue 04, p. 1035) [Journal-article]. https://www.irjet.net
135. Modi, S., Misal, V., Kulkarni, S., & Mali A.S. (2025). Hydroponic Farming Monitoring System - Automated system to monitor and control nutrient and pH levels. In *Journal of Microcontroller Engineering and Applications* (Vol. 12, Issue 3, pp. 11–16). https://doi.org/10.37591/JoMEA
136. Siddheshwar S. Gangonda, Prashant P. Patavardhan, Kailash J. Karande, "VGHN: variations aware geometric moments and histogram features normalization for robust uncontrolled face recognition", *International Journal of Information Technology*, https://doi.org/10.1007/s41870-021-00703-0.
137. Siddheshwar Gangonda and Prachi Mukherji, "Speech Processing for Marathi Numeral Recognition using MFCC & DTW Features", *International Journal of Engineering Research And Applications (IJERA) pp. 118-122, ISSN: 2248-9622.*
138. Siddheshwar S. Gangonda, Prashant P. Patavardhan, Kailash J. Karande, "Recognition of Marathi Numerals Using MFCC and DTW Features", *Book Title: Recent Trends on Image Processing and Pattern Recognition, RTIP2R 2018, CCIS 1037, pp. 1–11, © Springer Nature Singapore Pte Ltd. 2019* https://doi.org/10.1007/978-981-13-9187-3_17.
139. Siddheshwar S. Gangonda, Prashant P. Patavardhan, Kailash J. Karande, "Analysis of Face Recognition Algorithms for Uncontrolled Environments", *Book Title: Computing, Communication and Signal Processing, pp. 919–926, © Springer Nature Singapore Pte Ltd. 2018.*
140. Siddheshwar S. Gangonda, Prashant P. Patavardhan, Kailash J. Karande, "Recognition of Marathi Numerals using MFCC and DTW Features", 2nd International Conference on Recent Trends in Image Processing and Pattern Recognition (RTIP2R 2018), 21th -22th Dec., 2018, organized by Solapur University, Solapur in collaboration with University of South Dakota (USA) and Universidade de Evora (Portugal), India.
141. Siddheshwar S. Gangonda, Prashant P. Patavardhan, Kailash J. Karande, "A Comprehensive Survey of Face Databases for Constrained and Unconstrained Environments", 2nd IEEE Global Conference on Wireless Computing & Networking (GCWCN-2018), 23th-24th Nov., 2018, organized by STES's Sinhgad Institute of Technology, Lonavala, India.
142. Siddheshwar S. Gangonda, Prashant P. Patavardhan, Kailash J. Karande, "An Extensive Survey of Prominent Researches in Face Recognition under different Conditions", 4th International Conference on Computing, Communication, Control And Automation (ICCUBEA-2018), 16th to 18th Aug. 2018 organized by Pimpri Chinchwad College of Engineering (PCCOE), Pune, India.
143. Siddheshwar S. Gangonda, Prashant P. Patavardhan, Kailash J. Karande, "Analysis of Face Recognition Algorithms for Uncontrolled Environments", 3rd International Conference on Computing, Communication and Signal Processing (ICCASP 2018), 26th-27th Jan.2018, organized by Dr. BATU, Lonere, India.
144. Siddheshwar Gangonda and Prachi Mukherji, "Speech Processing for Marathi Numeral Recognition",International Conference on Recent Trends, Feb 2012, IOK COE, Pune.
145. S. S. Gangonda, "Bidirectional Visitor Counter with automatic Door Lock System", National Conference on Computer, Communication and Information Technology (NCCCIT-2018), 30th and 31st March 2018 organized by Department of Electronics and Telecommunication Engineering, SKN SCOE, Korti, Pandharpur.
146. Siddheshwar Gangonda and Prachi Mukherji, "Speech Processing for Marathi Numeral Recognition using MFCC & DTW Features", ePGCON 2012, 23rd and 24th April 2012 organized by Commins COE for Woman, Pune.
147. Siddheshwar Gangonda and Prachi Mukherji, "Speech Processing for Marathi Numeral Recognition", National Conference on Emerging Trends in Engineering and Technology (VNCET'12), 30th March 2012 organized by Vidyavardhini's College of Engineering and Technology, Vasai Road, Thane.
148. Siddheshwar Gangonda and Prachi Mukherji, "Speech Processing for Marathi Numeral Recognition", ePGCON 2011, 26th April 2011 organized by MAEER's MIT, Kothrud, Pune-38.

IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429
Volume 5, Issue 4, October 2025
Impact Factor: 7.67

149. Siddheshwar Gangonda, "Medical Image Processing",Aavishkar-2K7, 17th and 18th March 2007 organized by Department of Electronics and Telecommunication Engineering, SVERI's COE, Pandharpur.
150. Siddheshwar Gangonda, "Image enhancement & Denoising",VISION 2k7, 28th Feb-2nd March 2007 organized by M.T.E. Society's Walchand College of Engineering, Sangli.
151. Siddheshwar Gangonda, "Electromagnetic interference & compatibility" KSHITIJ 2k6, 23rd and 24th Sept. 2006 organized by Department of Mechanical Engineering, SVERI's COE, Pandharpur.
152. A. Pise and K. Karande, "A genetic Algorithm-Driven Energy-Efficient routing strategy for optimizing performance in VANETs," Engineering Technology and Applied Science Research, vol. 15, no. 5, 2025, [Online]. Available: https://etasr.com/index.php/ETASR/article/view/12744
153. A. C. Pise, K. J. Karande, "Investigating Energy-Efficient Optimal Routing Protocols for VANETs: A Comprehensive Study", ICT for Intelligent Systems, Lecture Notes in Networks and Systems 1109, Proceedings of ICTIS 2024 Volume 3, Lecture Notes in Networks and Systems, Springer, Singapore, ISSN 2367-3370, PP 407-417, 29 October 2024 https://doi.org/10.1007/978-981-97-6675-8_33.
154. A. C. Pise, et. al., "Smart Vehicle: A Systematic Review", International Journal - The Ciência & Engenharia - Science & Engineering Journal ISSN: 0103-944XVolume 11 Issue 1, 2023pp: 992–998, 2023.
155. A. C. Pise, et. al., "Smart Vehicle: A Systematic Review", International Journal of Research Publication and Reviews, ISSN 2582-7421, Vol 4, no 10, pp 2728-2731 October 2023.
156. A. C. Pise, et. al., "Development of BIOBOT System to Assist COVID Patient and Caretakers", European Journal of Molecular and Clinical Medicine ; 10(1):3472-3480, 2023.
157. A. C. Pise, et. al., "IoT Based Landmine Detection Robot", International Journal of Research in Science & EngineeringISSN: 2394-8299Vol: 03, No. 04, June-July 2023.
158. A. C. Pise, et. al., "A Systematic survey on Estimation of Electrical Vehicle", Journal of Electronics, Computer Networking and Applied Mathematics (JECNAM) ISSN: 2799-1156, Volume 3, Issue 01, Pages 1-6, December 2023.
159. A. C. Pise, et. al., "Python Algorithm to Estimate Range of Electrical Vehicle", Web of Science, Vol 21, No 1 (2022) December 2022
160. A. C. Pise, et. al., "Implementation of BIOBOT System for COVID Patient and Caretakers Assistant using IOT", International Journal of Information technology and Computer Engineering. 30-43. 10.55529/ijitc.21.30.43, (2022).
161. A. C. Pise, et. al., "An IoT Based Real Time Monitoring of Agricultural and Micro irrigation system", International journal of scientific research in Engineering and management (IJSREM), VOLUME: 06 ISSUE: 04 | APRIL – 2022, ISSN:2582-3930.
162. A. C. Pise, Dr. K. J. Karande, "An Exploratory study of Cluster Based Routing Protocol in VANET: A Review", International Journal of Advanced Research in Engineering and Technology(IJARET), 12,10, 2021, 17-30, Manuscript ID :00000-94375 Source ID : 00000006, Journal_uploads/ IJARET/VOLUME_12_ISSUE_10/IJARET_12_10_002.pdf
163. A. C. Pise, et. al., "Android based Portable Health Support System," A Peer Referred & Indexed International Journal of Research,Vol.8,issue.4 , April 2019.
164. A. C. Pise, et. al., "Facial Expression Recognition Using Image Processing," International Journal of VLSI Design, Microelectronics and Embedded System,Vol.3,issue.2 , July 2018.
165. A. C. Pise, et. al., "Detection of Cast Iron Composition by Cooling Curve Analysis using Thermocouple Temperature Sensor," UGC Approved International Journal of Academic Science (IJRECE),Vol.6, Issue.3 , July-September 2018.
166. A. C. Pise, et. al., "Android Based Portable Health Support", System International Journal of Engineering Sciences & Research Technology (IJESRT 2017) Vol.6, Issue 8, pp 85-88 5th Aug 2017
167. A. C. Pise, et. al., "Adaptive Noise Cancellation in Speech Signal", International Journal of Innovative Engg and Technology, 2017

IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429 Volume 5, Issue 4, October 2025 Impact Factor: 7.67

168. A. C. Pise, et. al., "Lung Cancer Detection System by using Baysian Classifier", ISSN 2454-7875, IJRPET, published online in conference special issue VESCOMM-2016, February 2016
169. A. C. Pise, et. al.,"Review on Agricultural Plant Diseases Detection by Image Processing", ISSN 2278-62IX, IJLTET, Vol 7, Issue 1 May 2016
170. A. C. Pise, et. al. "Segmentation of Retinal Images for Glaucoma Detection", International Journal of Engineering Research and Technology (06, June-2015).
171. A. C. Pise, et. al. "Color Local Texture Features Based Face Recognition", International Journal of Innovations in Engineering and Technology(IJIET) , Dec. 2014
172. A. C. Pise, et. al. "Single Chip Solution For Multimode Robotic Control", International Journal of Engineering Research and Technology (IJERT-2014), Vol. 3, Issue 12, Dec. 2014.
173. Anjali C. Pise et. al., "Remote monitoring of Greenhouse parameters using zigbee Wireless Sensor Network", International Journal of Engineering Research & Technology ISSN 2278-0181 (online) Vol. 3, Issue 2, and pp: (2412-2414), Feb. 2014.
174. A. C. Pise, K. J. Karande, "Cluster Head Selection Based on ACO In Vehicular Ad-hoc Networks", Machine Learning for Environmental Monitoring in Wireless Sensor Networks
175. A. C. Pise, K. J. Karande, "Architecture, Characteristics, Applications and Challenges in Vehicular Ad Hoc Networks" Presented in 27th IEEE International Symposium on Wireless Personal Multimedia Communications (WPMC 2024) "Secure 6G – AI Nexus: Where Technology Meets Humanity" Accepted for book chapter to be published in international Scopus index book by River publisher.
176. A. C. Pise, Dr. K. J. Karande, "K-mean Energy Efficient Optimal Cluster Based Routing Protocol in Vehicular Ad Hoc Networks", International Conference on Innovations in Artificial Intelligence and Machine Learning (ICAIML-2022), August 20th and 21st 2022 Springer database Conference.
177. A. C. Pise, Mr. D. Nale, "Web-Based Application for Result Analysis", ", International Conference on Innovations in Artificial Intelligence and Machine Learning (ICAIML-2022), August 20th and 21st 2022 Springer database Conference.
178. A. C. Pise, et. al., "Detection of Cast Iron Composition by Cooling Curve Analysis using Thermocouple Temperature Sensor," 2nd International Conference on Engineering Technology, Science and Management Innovation (ICETSMI – 2018), 2nd September 2018.
179. A. C. Pise, et. al., "Facial Expression Recognition Using Facial Features," IEEE International Conference on Communication and Electronics Systems (ICCES 2018), October 2018.
180. A. C. Pise, et. al., "Estimating Parameters of Cast Iron Composition using Cooling Curve Analysis," IEEE International Conference on Communication and Electronics Systems (ICCES 2018), Coimbatore, October 2018.
181. A. C. Pise, et. al., "Android based portable Health Support System," International Conference on Innovations in Engineering and Technology (CIET 2016), SKN Sinhgad College of Engineering, 30-31 Dec 2016.
182. A. C. Pise, et. al., "Baysian Classifier & FCM Segmentation for Lung Cancer Detection in early stage," International Conference on Innovations in Engineering and Technology (CIET 2016), SKN Sinhgad College of Engineering, 30-31 Dec 2016.
183. A. C. Pise, et. al., "Cast Iron Composition Measurement by Coding Curve Analysis," International Conference on Innovations in Engineering and Technology (CIET 2016), SKN Sinhgad College of Engineering, 30-31 Dec 2016.
184. A. C. Pise, et. al., "War field Intelligence Defence Flaging Vehicle," International Conference on Innovations in Engineering and Technology (CIET 2016), SKN Sinhgad College of Engineering, 30-31 Dec 2016.
185. A. C. Pise, et. al. "Disease Detection of Pomegranate Plant", IEEE sponsored International Conference on Computation of Power, Energy, Information and Communication, 22- 23 Apr. 2015.
186. A. C. Pise, P. Bankar. "Face Recognition by using GABOR and LBP", IEEE International Conference on Communication and Signal Processing, ICCSP, 2-4 Apr. 2015

IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429 Volume 5, Issue 4, October 2025 Impact Factor: 7.67

187. A. C. Pise, et. al. "Single Chip Solution For Multimode Robotic Control", Ist IEEE International Conferene on Computing Communication and Automation, 26-27 Feb2015.
188. Anjali C. Pise, Vaishali S. Katti, "Efficient Design for Monitoring of Greenhouse Parameters using Zigbee Wireless Sensor Network", fifth SARC international conference IRF,IEEE forum ISBN 978-93-84209-21-6,pp 24-26, 25th May 2014
189. A. C. Pise, P. Bankar, "Face Recognition using Color Local Texture Features", International Conference on Electronics and Telecommunication, Electrical and Computer Engineering, Apr.2014.
190. A. C. Pise, et.al. "Monitoring parameters of Greenhouse using Zigbee Wireless Sensor Network", 1st International Conference on Electronics and Telecommunication, Electrical and Computer Engineering, 5-6 Apr.2014.
191. A. C. Pise, et. al. "Compensation schemes and performance Analysis of IQ Imbalances in Direct Conversion Receivers", International Conference at GHPCOE, Gujarat, (Online Proceeding is Available), 2009.
192. A. C. Pise, K. J. Karande, "Energy-Efficient Optimal Routing Protocols in VANETs", 66th Annual IETE Convention, AIC -2023 September16-17, 2023, under the Theme: The Role of 5G In Enabling Digital Transformation for Rural Upliftment.
193. A. C. Pise, et. al. "Automatic Bottle Filling Machine using Raspberry Pi", National Conference on computer ;Communication & information Technology (NCCIT-2018) dated 30th & 31st March 2018.
194. A. C. Pise, et. al. "Design & Implementation of ALU using VHDL", National Conference on computer ;Communication & information Technology (NCCIT-2018) dated 30th & 31st March 2018.
195. A. C. Pise, et. al. "Mechanism and Control of Autonomus four rotor Quad copter", National Conference on Computer, Electrical and Electronics Engineering, 23- 24 Apr. 2016.
196. A. C. Pise, et. al. "Segmentation of Optic Disk and Optic Cup from retinal Images", ICEECMPE – Chennai, June 2015
197. A. C. Pise, et. al. "Diseases Detection of Pomegranate Plant", IEEE Sponsored International conference on Computation of Power, Energy , April 2015.
198. A. C. Pise, et. al. "Compensation Techniques for I/Q Imbalance in Direct-Conversion Receivers", Conference at SCOE, Pune 2010.
199. A. C. Pise, et. al. "I/Q Imbalance compensation Techniques in Direct Conversion Receiver ", Advancing Trends in Engineering and Management Technologies, ATEMT-2009, Conference at Shri Ramdeobaba Kamla Nehru Engineering College, Nagpur, 20-21 November 2009
200. A. C. Pise, et. al. "Compensation Techniques for I/Q Imbalance in Direct Conversion Receiver", Conference at PICT, Pune 2008.
201. A. C. Pise, et. al. "I/Q Imbalance compensation Techniques in Direct Conversion Receiver ", Conference at DYCOE, Pune 2008.
202. A. C. Pise, et. al. "DUCHA: A New Dual channel MAC protocol for Multihop Ad-Hoc Networks", Conference at SVCP, Pune 2007.
203. Godase, V., Pawar, P., Nagane, S., & Kumbhar, S. (2024). Automatic railway horn system using node MCU. Journal of Control & Instrumentation, 15(1).
204. Godase, V., & Godase, J. (2024). Diet prediction and feature importance of gut microbiome using machine learning. Evolution in Electrical and Electronic Engineering, 5(2), 214-219.
205. Jamadade, V. K., Ghodke, M. G., Katakdhond, S. S., & Godase, V. A Comprehensive Review on Scalable Arduino Radar Platform for Real-time Object Detection and Mapping.
206. Godase, V. (2025). A comprehensive study of revolutionizing EV charging with solar-powered wireless solutions. Advance Research in Power Electronics and Devices e-ISSN, 3048-7145.
207. Godase, V. (2025, April). Advanced Neural Network Models for Optimal Energy Management in Microgrids with Integrated Electric Vehicles. In Proceedings of the International Conference on Trends in Material Science and Inventive Materials (ICTMIM-2025) DVD Part Number: CFP250J1-DVD.

IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429 Volume 5, Issue 4, October 2025 Impact Factor: 7.67

208. Dange, R., Attar, E., Ghodake, P., & Godase, V. (2023). Smart agriculture automation using ESP8266 NodeMCU. J. Electron. Comput. Netw. Appl. Math, (35), 1-9.
209. Godase, V. (2025). Optimized Algorithm for Face Recognition using Deepface and Multi-task Cascaded Convolutional Network (MTCNN). Optimum Science Journal.
210. Mane, V. G. A. L. K., & Gangonda, K. D. S. Pipeline Survey Robot.
211. Godase, V. (2025). Navigating the digital battlefield: An in-depth analysis of cyber-attacks and cybercrime. International Journal of Data Science, Bioinformatics and Cyber Security, 1(1), 16-27.
212. Godase, V., & Jagadale, A. (2019). Three element control using PLC, PID & SCADA interface. International Journal for Scientific Research & Development, 7(2), 1105-1109.
213. Godase, V. (2025). Edge AI for Smart Surveillance: Real-time Human Activity Recognition on Low-power Devices. International Journal of AI and Machine Learning Innovations in Electronics and Communication Technology, 1(1), 29-46.
214. Godase, V., Modi, S., Misal, V., & Kulkarni, S. (2025). LoRaEdge-ESP32 synergy: Revolutionizing farm weather data collection with low-power, long-range IoT. Advance Research in Analog and Digital Communications, 2(2), 1-11.
215. Godase, V. (2025). Comparative study of ladder logic and structured text programming for PLC. Available at SSRN 5383802.
216. Godase, V., Modi, S., Misal, V., & Kulkarni, S. Real-time object detection for autonomous drone navigation using YOLOv8,‖. Advance Research in Communication Engineering and its Innovations, 2(2), 17-27.
217. Godase, V. (2025). Smart energy management in manufacturing plants using PLC and SCADA. Advance Research in Power Electronics and Devices, 2(2), 14-24.
218. Godase, V. (2025). IoT-MCU Integrated Framework for Field Pond Surveillance and Water Resource Optimization. International Journal of Emerging IoT Technologies in Smart Electronics and Communication, 1(1), 9-19.
219. Godase, V. (2025). Graphene-Based Nano-Antennas for Terahertz Communication. International Journal of Digital Electronics and Microprocessor Technology, 1(2), 1-14.
220. Godase, V., Khiste, R., & Palimkar, V. (2025). AI-Optimized Reconfigurable Antennas for 6G Communication Systems. Journal of RF and Microwave Communication Technologies, 2(3), 1-12.
221. Bhaganagare, S., Chavan, S., Gavali, S., & Godase, V. V. (2025). Voice-Controlled Home Automation with ESP32: A Systematic Review of IoT-Based Solutions. Journal of Microprocessor and Microcontroller Research, 2(3), 1-13.
222. Jamadade, V. K., Ghodke, M. G., Katakdhond, S. S., & Godase, V. A Comprehensive Review on Scalable Arduino Radar Platform for Real-time Object Detection and Mapping.
223. Godase, V. (2025). Cross-Domain Comparative Analysis of Microwave Imaging Systems for Medical Diagnostics and Industrial Testing. Journal of Microwave Engineering & Technologies, 12(2), 39-48p.
224. V. K. Jamadade, M. G. Ghodke, S. S. Katakdhond, and V. Godase, ―A Review on Real-time Substation Feeder Power Line Monitoring and Auditing Systems," International Journal of Emerging IoT Technologies in Smart Electronics and Communication, vol. 1, no. 2, pp. 1-16, Sep. 2025.
225. V. V. Godase, "VLSI-Integrated Energy Harvesting Architectures for Battery-Free IoT Edge Systems,"Journal of Electronics Design and Technology, vol. 2, no. 3, pp. 1-12, Sep. 2025.
226. A. Salunkhe et al., "A Review on Real-Time RFID-Based Smart Attendance Systems for Efficient Record Management," Advance Research in Analog and Digital Communications, vol. 2, no. 2, pp.32-46, Aug. 2025.
227. Vaibhav, V. G. (2025). A Neuromorphic-Inspired, Low-Power VLSI Architecture for Edge AI in IoT Sensor Nodes. *Journal of Microelectronics and Solid State Devices*, *12*(2), 41-47p.
228. Nagane, M.S., Pawar, M.P., & Godase, P.V. (2022). Cinematica Sentiment Analysis. *Journal of Image Processing and Intelligent Remote Sensing*.
229. Godase, V.V. (2025). Tools of Research. SSRN Electronic Journal.

230. Godase, V. (n.d.). EDUCATION AS EMPOWERMENT: THE KEY TO WOMEN'S SOCIO ECONOMIC DEVELOPMENT. Women Empowerment and Development, 174–179.
231. Godase, V. (n.d.). COMPREHENSIVE REVIEW ON EXPLAINABLE AI TO ADDRESSES THE BLACK BOX CHALLENGE AND ITS ROLE IN TRUSTWORTHY SYSTEMS. In Sinhgad College of Engineering, Artificial Intelligence Education and Innovation (pp. 127–132).
232. Godase, V. (n.d.-b). REVOLUTIONIZING HEALTHCARE DELIVERY WITH AI-POWERED DIAGNOSTICS: A COMPREHENSIVE REVIEW. In SKN Sinhgad College of Engineering, SKN Sinhgad College of Engineering (pp. 58–61).
233. Dhope, V. (2024). SMART PLANT MONITORING SYSTEM. In International Journal of Creative Research Thoughts (IJCRT). https://www.ijcrt.org
234. M. M. Zade,Sushant D.Kambale,Shweta A.Mane,Prathamesh M. Jadhav.(2025) "IOT Based early fire detection in Jungles". RIGJA&AR Volume 2 Issue 1,ISSN:2998-4459. DOI:https://doi.org/10.5281/zendo.15056435
235. M. M. Zade, Bramhadev B. Rupanar, Vrushal S. Shilawant , Akansha R. Pawar(2025) "IOT Flood Monitoring & Alerting System using Rasberry Pi-Pico "International Journal of Research Publication & Reviews , Volume 6 ,Issue 3,ISSN:2582-7421.DOI:https://ijrpr.com/uploads/V6ISSUE3/IJRPR40251.pdf
236. M.M.Zade(2022) "Touchless Fingerprint Recognition System"(Paper-ID 907)(2022) International Conference on "Advanced Technologies for Societal Applications: Techno-Societal 2022 https://link.springer.com/book/10.1007/978-3-031-34644-6?page=6
237. Mr.M.M.Zade published the paper on "Automation of Color Object Sorting Conveyor Belt", in International Journal of Scientific Research in Engineering & Management (IJSREM),ISSN:2582-3930 Volume 06 ,Issue 11th November 2022.
238. Mr.M.M.Zade published the paper on "Cloud Based Patient Health Record Tracking web Developement",in International Journal of Advanced Research in Science, Communication & Technology(IJARSCT),ISSN NO:2581-9429 Volume 02 ,Issue 03,DOI 1048175/IJARSCT-3705,IF 6.252, May 2022.
239. Mr. Mahesh M Zade, "Performance analysis of PSNR Vs. Impulse Noise for the enhancement of Image using SMF", Journal of Applied Science & Computations (JASC UGC Approved), Volume VI, Issue II, Feb.2019
240. Mr. Mahesh M Zade, "Classification of Power Quality Disturbances Using SVM & their Efficiency Comparison", Journal of Applied Science & Computations (JASC UGC Approved), Volume VI, Issue II, Feb.2019
241. Mr. Mahesh M Zade, "Dynamic Clustering of Wireless Sensor Network Using Modified AODV", Journal of Applied Science & Computations (JASC UGC Approved), Volume VI, Issue II, Feb.2019
242. Mr. Mahesh M Zade, "Performance analysis of PSNR Vs. Impulse Noise for the enhancement of Image using SMF", National Conference on Mathematical Modeling and Computational Intelligence 2K19 (MMCI-2k19), in association with JASC, at S. B. Patil College of Engineering, Indapur, Feb.2019
243. Mr. Mahesh M Zade, "Classification of Power Quality Disturbances Using SVM & their Efficiency Comparison", National Conference on Mathematical Modeling and Computational Intelligence 2K19 (MMCI-2k19), in association with JASC, at S. B. Patil College of Engineering, Indapur Feb.2019
244. Mr. Mahesh M Zade, "Dynamic Clustering of Wireless Sensor Network Using Modified AODV", National Conference on Mathematical Modeling and Computational Intelligence 2K19 (MMCI-2k19), in association with JASC, at S. B. Patil College of Engineering, Indapur Feb.2019
245. Mr. Mahesh M Zade & Mr.S.M.Karve,"Performance Analysis of Median Filter for Enhancement of Highly Corrupted Images", National Conference on Advanced Trends in Engineering, Association with IRJMS, Karmyogi Engineering College, Shelave, Pandharpur, March 2016.
246. Mr. Mahesh M Zade & Mr.S.M.Karve,"Implementation of Reed Solomen Encoder & Decoder Using FPGA",National Conference on Advanced Trends in Engineering, Association with IRJMS, Karmyogi Engineering College, Shelave, Pandharpur, March 2016.

IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429
Volume 5, Issue 4, October 2025
Impact Factor: 7.67

247. Mr. Mahesh M Zade & Dr.S.M.Mukane,"Performance of Switching Median Filter for Enhancement of Image", National Conference on Mechatronics at Sinhgad Institute of Technology and Science, Narhe, Pune, Feb. 2016.
248. Mr. Mahesh M Zade & Dr.S.M.Mukane,"Enhancement of Image with the help of Switching Median Filter", National Conference on Emerging Trends in Electronics & Telecommunication Engineering, SVERI's College of Engineering Pandharpur, NCET 2013.
249. Mr.Mahesh M Zade & Dr.S.M.Mukane,"Enhancement of Image with the help of Switching Median Filter", International Journal of Computer Application (IJCA) SVERI's College of Engineering, Pandharpur, Dec.2013.
250. A. O. Mulani, V. Godase, S. Takale, and R. Ghodake, "Secure Image Authentication using AES and DWT Watermarking on Reconfigurable Platform," International Journal of Embedded System and VLSI Design, vol. 1, no. 2, pp. 14-20, Oct. 2025