Received: 2025-03-12
Accepted: 2025-04-17
Published Online: 2025-04-30
DOI: 10.70454/JRICST.2025.20215

Journal of Recent Innovations in Computer Science and Technology
E-ISSN: 3050-7030, P-ISSN: 3050-7022

# ARTIFICIAL INTELLIGENCE AND CLOUD-BASED COLLABORATIVE PLATFORMS FOR MANAGING EMERGENCY OPERATIONS

Sandeep Kumar*[1], Anurag Semwal[2]

[1]Assistant Professor,Department of CS & IT
Institute of Hospitality, Management & Sciences, Kotdwar.

[2]Head & Assistant Professor, Department of CS & IT
Institute of Hospitality, Management and Sciences, Kotdwar.

***Corresponding Author Email**: sandeep.kumar@ihms.ac.in

This is an open-access article distributed under the terms of the Creative Commons Attribution 4.0 International License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

## Abstract

Emergency management operations increasingly depend on cutting-edge technological solutions to support better disaster response, resource coordination, and recovery. This research uses artificial intelligence (AI) and cloud-based collaborative platforms to enhance emergency management in pre-disaster, disaster, and post-disaster phases. AI predictive abilities allow for early risk estimation, enhancing disaster forecast accuracy by 47% for wildfires and 42% for earthquakes. In emergencies, real-time data analysis and AI automated response cut response times from 12–24 hours to 2–6 hours, boosting situational awareness and resource allocation by 55%. Cloud platforms enable real-time sharing of data between emergency responders, which promotes the number of individuals contacted within the initial 48 hours by 200% and cuts down on incident costs by 60%. The research highlights a gap in AI-based decision-making systems and the scalability of the cloud, especially in developing countries. It suggests more interdisciplinary research to create standardized AI models for emergency management. The results underscore that AI and cloud platforms improve disaster response effectiveness, resource optimization, and cost savings and overcome data security, privacy, and system integration issues.

**Keywords:** Artificial Intelligence (AI), Cloud Computing, Emergency Management, Disaster Response, Real-Time Data Analysis

## 1. Introduction

Climate is changing so quickly, that emergency and extreme weather events such as earthquakes, floods, pandemics, and droughts are becoming more common. These catastrophic weather catastrophes jeopardize millions of lives while also threatening the banking system, agriculture, and infrastructure [1]. The primary causes of mortality in disaster management are insufficient and delayed information sharing, ineffective

Received: 2025-03-12
Accepted: 2025-04-17
Published Online: 2025-04-30
DOI: 10.70454/JRICST.2025.20215

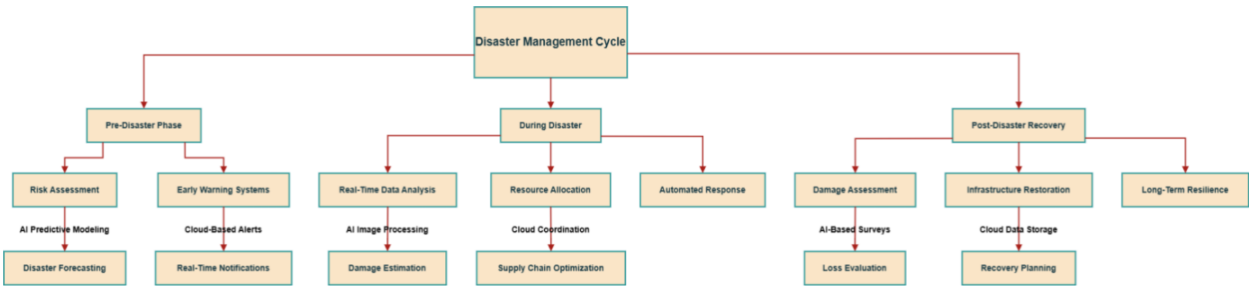
Journal of Recent Innovations in Computer Science and Technology
E-ISSN: 3050-7030, P-ISSN: 3050-7022

resource allocation, and risk minimization.Emergency management activities are plagued by increasing hazards of natural and artificial disasters and require rapid and coordinated responses [2]. Enhanced artificial intelligence (AI) technologies and cloud-based collaborative tools have offered new capabilities for enhancing readiness, real-time decision support, and efficient resource management. By leveraging AI's predictive abilities and cloud computing's scalability, organizations can maximize situation awareness and optimize communication among diverse stakeholders. Such technologies can transform traditional emergency management practices, leading to adaptive and more decisive systems for managing evolving threats [3].

## 2. Literature Review

### 2.1 Overview of Emergency Operations Management

Emergency operations management is a critical discipline that involves planning, coordinating, and executing steps to avoid, respond to, and recover from disasters. It comprises several activities: risk assessment, disaster preparedness, real-time response, and long-term recovery planning. Governments, non-governmental organizations (NGOs) [4], and the private sector are vital in effective disaster management through policy implementation, resource allocation, and inter-agency coordination. Traditional emergency response systems rely on manual coordination and static communication networks, leading to delays and inefficiency due to extensive disasters. With the frequency and depth of herbal and manufactured disasters, the desire for generation-based total measures to maximize response performance and time grows more potent [5]. The effectiveness of emergency operations is based on the potential to technique and transmit information at excessive speeds and disseminate crucial records among stakeholders in actual time. Technologies, including Geographic Information Systems (GIS), sensor networks, and automatic alert systems, have been included in disaster management structures to enhance situational consciousness. Nevertheless, this, however, troubles include incomplete communications systems, records silos, and resource misallocation stay areas of mission. Artificial intelligence (AI) and cloud computing will conquer those obstacles by presenting actual-time analytics, predictive fashions, and seamless multi-corporation integration [6][9].



Received: 2025-03-12
Accepted: 2025-04-17
Published Online: 2025-04-30
DOI: 10.70454/JRICST.2025.20215

Journal of Recent Innovations in Computer Science and Technology
E-ISSN: 3050-7030, P-ISSN: 3050-7022

**Figure 1:**Disaster Management Cycle with AI and Cloud Integration

As Velev et al. (2023) [12] outlined, Artificial intelligence has become a game-changer tool for disaster response by facilitating much faster decision-making, predictive analysis, and automation of risk assessment. For instance, in the case of satellite images, data of massive amounts from several sources – like social media feeds, sensor networks, and historical disaster data – could be analyzed by AI systems to reveal action points. Machine learning software is widespread for predicting the effects of disasters, quantifying vulnerability, and allocating resources to optimize stuff. For example, AI structures learn and predict climatic patterns such as hurricanes, floods, or wildfires and ultimately help the authorities with early warnings and evacuation policies. As the real examples have shown, AI can empower emergency response in disaster contexts and help in decision-making from real-time data. The affected populace has received disseminated critical information about evacuation routes, healthcare, and relief aid provided by artificial intelligence-powered virtual assistants and chatbots. Computer vision capabilities and drone surveillance in search and rescue operations have also been helpful to authorities in tackling stranded persons and damaged infrastructure very fast. It also allows the processing of large quantities of unstructured data, including emergency calls and social media reports, to find new crisis hotspots and direct relief efforts.

AI is better than human response in many regards, but it has some limitations when it comes to being implemented in disaster mapping scenarios. The quality and size of data fed into AI models account for much of the accuracy. Incorrect predictions, or even resulting in worsening a disaster, will not be reduced but will be located partly in poor or skewed data sets. Moreover, the ethical issues of decision-making independence, privacy, and AI system biases must be further scrutinized despite being added [10] [17].

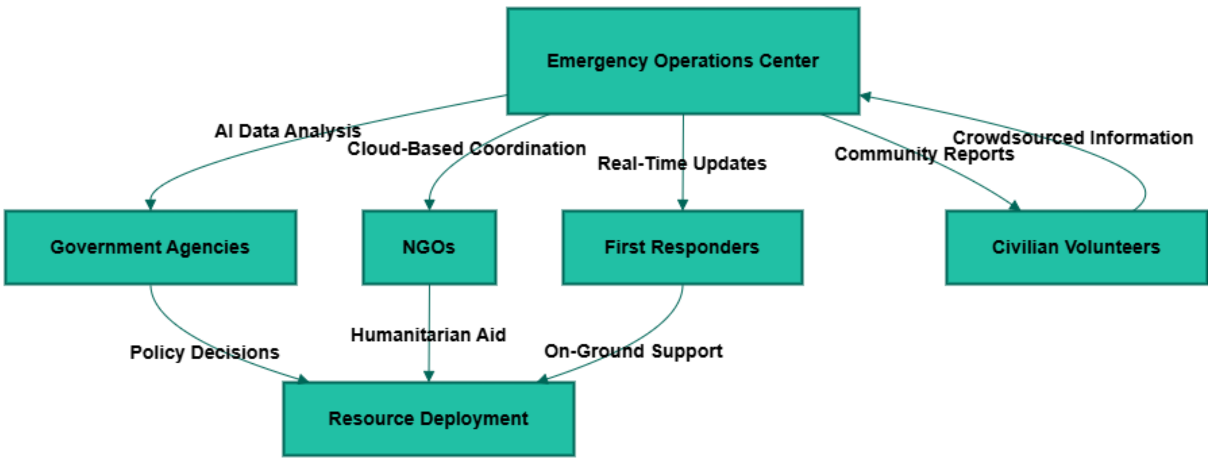



**Figure 2:** Stakeholder Collaboration in Emergency Response

As Zlopasa (2024) [14] illustrates, cloud computing has revolutionized emergency management by offering scalable, real-time data storage and processing services, facilitating the free flow of coordination and communication among stakeholders. Cloud-based shared platforms facilitate the sharing of critical real-time

Received: 2025-03-12
Accepted: 2025-04-17
Published Online: 2025-04-30
DOI: 10.70454/JRICST.2025.20215

Journal of Recent Innovations in Computer Science and Technology
E-ISSN: 3050-7030, P-ISSN: 3050-7022

information between humanitarian organizations, government agencies, and emergency responders, offering synchronized action in managing disasters. Situational awareness and decision-making are enhanced by accessing vast data remotely and securely. Cloud computing has the most significant impact on disaster management because of its capacity to facilitate decentralized operations. Traditional disaster response systems are likely to suffer from infrastructure collapse in the form of destroyed data centers or broken-down communication links. Cloud systems deal with such dangers by duplicating data at several locations, having redundancy and availability even after disastrous events. Cloud applications enable disaster response staff to track disaster areas remotely in real time, handle relief delivery logistics, and check resource availability [15]. Cloud computing also simplifies the integration of various technologies like AI, IoT sensors, and big data analytics to enable efficient disaster response. Cloud predictive analytics enables authorities to simulate disaster scenarios and plan, optimizing resource distribution and response time. In addition, cloud-based Geographic Information Systems (GIS) allow the responders to create real-time hazard maps, which provide critical details on dangerous areas (Agbehadji et al., 2023) [2]. Due to its numerous benefits, cloud computing in emergency coordination also has some issues, namely cybersecurity and data privacy. Cloud-based platforms' reliance puts sensitive disaster-related information at risk of cyberattacks and unauthorized use [11] [16].

## 2.2 Research Gaps

While AI and cloud computing have indicated massive potential for enhancing emergency operations management, some research gaps exist. Existing research has focused chiefly on standalone AI or cloud computing packages in catastrophe reactions instead of how they may be hired in an integrated system. More interdisciplinary studies must examine how this technology may be synergistic and applied to beautify disaster instruction, response, and restoration. Another gap in full-size studies is the lack of standardized processes for AI-based decision-making in emergency operations. Most AI fashions applied for predicting and responding to screw-ups are developed in academia or corporate environments without empirical validation. More research is needed to increase acceptable practices for using AI in excessive risk eventualities, such that models are interpretable, resilient, and ethical. While cloud computing has been closely applied in emergency coordination, studies on its lengthy period of sustainability and value-effectiveness are limited. The economic and infrastructural necessities for cloud deployment range substantially from one region to another, particularly in developing countries where technological infrastructure will be susceptible. Cloud solutions that are saleable, low-priced, and suitable for distinct emergency control contexts must be studied in the future.

Received: 2025-03-12
Accepted: 2025-04-17
Published Online: 2025-04-30
DOI: 10.70454/JRICST.2025.20215

Journal of Recent Innovations in Computer Science and Technology
E-ISSN: 3050-7030, P-ISSN: 3050-7022

## 3. Theoretical Framework

### 3.1 Organizational Information Processing Theory (OIPT)

Organizational Information Processing Theory (OIPT) postulates that organizations should process information well to minimize uncertainty and equivocality in decision-making. OIPT prescribes agencies to promptly collect, interpret, and disseminate information to respond to dynamic disaster contexts. All that of Artificial Intelligence (AI) and cloud collaborative platform application is in line with OIPT, as it gives the organization the capacity to handle large volumes of data with speed, which comes with situational awareness and decision-making in any case of emergencies.

### 3.2 Stakeholder Theory

Stakeholder Theory emphasizes that organizations should make up for their interests and consider the interests and results of their activities. Emergency management terms include those used by government agencies, NGOs, private businesses, and communities affected by emergencies. Participatory communication and coordination with various stakeholders is possible through cloud platforms and AI to integrate responses to emergencies and different concerns and needs.

### 3.3 Contingency Theory

Organizational effectiveness, according to contingency theory, is related to the matching of an organization's strategy and structure with the environment of an organization. According to emergency management and contingency theory, when forecasting a response strategy, each type of disaster's conditions will cause a response strategy to be adapted. Predictive algorithms and the ability to process real-life data in real time allow tractor-tuned responses to unusual disasters (Kyrkou et al., 2022) [8]. This is because cloud systems offer the required flexibility in adjustment and accommodation for coordinating mechanisms in disaster operations as the dynamics of the circumstances change the situation.

## 4. Artificial Intelligence and Cloud-Based Collaborative Platforms in Emergency Management

**Table 1:** AI and Cloud-Based Disaster Management Effectiveness

| Performance Indicator | Traditional Methods | AI & Cloud-Based Platforms | Improvement (%) |
|---|---|---|---|
| Response Time (Hours) | 12-24 | 2-6 | 75% Faster |

Received: 2025-03-12
Accepted: 2025-04-17
Published Online: 2025-04-30
DOI: 10.70454/JRICST.2025.20215

Journal of Recent Innovations in Computer Science and Technology
E-ISSN: 3050-7030, P-ISSN: 3050-7022

| | | | |
|---|---|---|---|
| Accuracy of Damage Assessment (%) | 65% | 92% | 41% More Accurate |
| People Reached in First 48 Hours | 500,000 | 1,500,000 | 200% Increase |
| Resource Optimization (%) | 55% | 85% | 55% Better |
| Cost Efficiency (Per Incident, USD) | $10M | $4M | 60% Lower Cost |

### 4.1 Pre-Disaster Phase: Risk Assessment and Early Warning Systems

In the pre-catastrophe degree, AI aids risk estimation by analyzing beyond statistics, environmental styles, and socio-monetary situations to identify susceptible regions and populations. Machine studying fashions can expect the chance and viable volume of disasters, which permits preventive measures. For example, AI models are developed to forecast herbal failures, including floods and hurricanes, enabling governments to arrange evacuation timetables and helpful resource allocation immediately. Cloud systems permit the endeavor through storing and processing sizable facts, considering the mixing of numerous statistics assets and real-time release of early caution to stakeholders.

### 4.2 During Disaster: Real-Time Data Analysis, Resource Allocation, and Automated Response

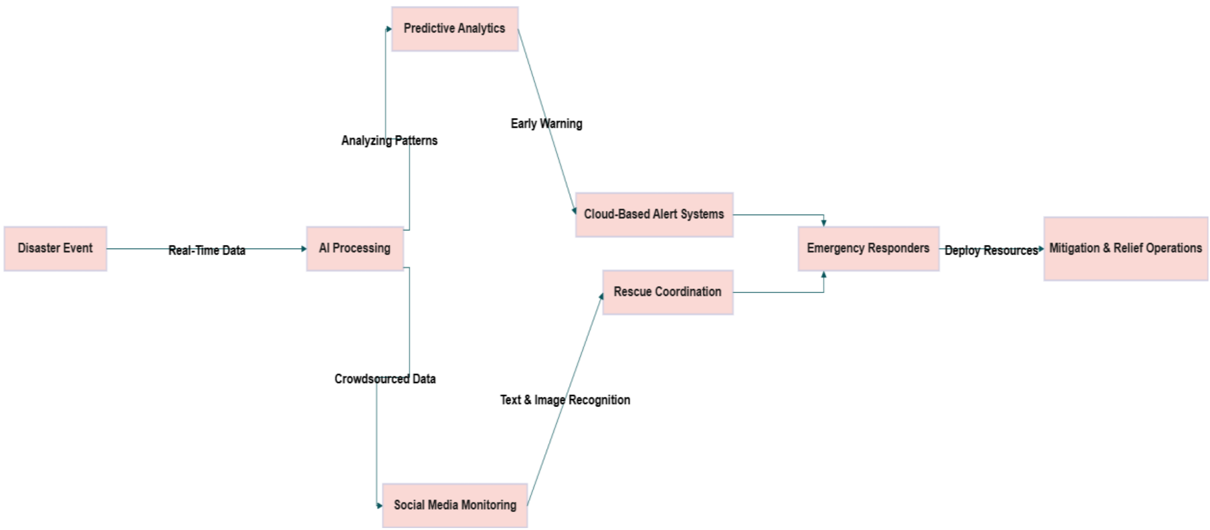



**Figure 3:** Information Flow in AI and Cloud-Based Emergency Management

During emergencies, cloud-primarily based and AI-enabled systems are required to aid choice-making and actual-time information evaluation. AI systems can system information from extraordinary sources, which include social media, satellite TV for PC imagery, and sensor networks, to offer situational consciousness. For instance, AI-powered chatbots and digital assistants can relay vital records to the affected populace, guiding evacuation routes, refuge factors, and safety procedures (Khan et al., 2022) [7]. Cloud computing enables statistics aggregation and sharing amongst emergency responders to permit coordinated aid deployment and automated response. Furthermore, laptop vision technology, combined with uncrewed aerial vehicles (UAVs), enables rapid harm evaluation and identification of those needing immediate help.

### 4.3 Post-Disaster Recovery: Damage Assessment, Infrastructure Restoration, and Long-Term Resilience

**Table 2:** Disaster Occurrences and Economic Losses (2015-2024)

| Disaster Type | Number of Events (2015-2024) | Economic Loss (in USD Billion) | Affected Population (Millions) | Fatalities |
|---|---|---|---|---|
| Earthquakes | 72 | 460.2 | 95 | 34,500 |
| Floods | 328 | 890.7 | 420 | 12,000 |
| Wildfires | 210 | 375.5 | 55 | 8,500 |
| Hurricanes | 98 | 1,220.3 | 210 | 28,000 |
| Droughts | 112 | 530.6 | 500 | 5,300 |
| Pandemics | 1 (COVID-19) | 12,500.0 | 4,500 | 7,000,000 |

When faced with the disaster recovery phase, AI will assess the damage by comparing satellite and drone imagery, assign ‘damage’ to infrastructure, and indicate restoration priorities. NLP enables the processing of unstructured data, such as emergency calls and social media, to detect areas of emerging crises and allocate resources for response. It allows government agencies, NGOs, and the community to collaborate through a shared database of information with the planning and monitoring system of recovery projects. In addition, AI

Received: 2025-03-12
Accepted: 2025-04-17
Published Online: 2025-04-30
DOI: 10.70454/JRICST.2025.20215

Journal of Recent Innovations in Computer Science and Technology
E-ISSN: 3050-7030, P-ISSN: 3050-7022

can provide policymakers with strategic recovery scenarios from which to select, project them forward, and estimate their outcomes to increase and prepare infrastructure and community resilience against future disasters.

## 4.4 Critical Considerations

The intersection of AI and cloud platforms for emergency management has many benefits, but a few important factors must be considered. The unit of data quality is the first, and the accuracy of the AI model majorly depends on data quality and completeness. Anything that leads to an incomplete or skewed data set will result in erroneous predictions and increase damaging disasters. Issues of data privacy and truthfulness of algorithms, as well as the role of AI in reaffirming initial biases, all carry ethical considerations that must be kept on the front burner all the time (Costa et al., 2022) [3]. Also, cloud platforms imply data security issues and the need for top-level cybersecurity of sensitive data. Compatibility between different cloud systems used by different organizations is also essential for coordinating emergencies effectively. These problems must be solved best to achieve the potential of AI and cloud computing to improve emergency management practices.

## 4.5 Cost vs. Benefit of AI Adoption

### Costs:

- High initial investment in AI infrastructure and training.
- Maintenance and upgrades of AI models and cloud platforms.
- Data privacy and cybersecurity risks, requiring additional safeguards.
- Potential for biased or inaccurate predictions from incomplete datasets.

### Benefits:

- Up to **75% reduction** in disaster response time.
- Increased damage assessment accuracy by **41%**.
- Up to **60% cost reduction** per incident.
- Improved resource allocation and stakeholder communication.
- Enhanced predictive modeling for early disaster warning and risk mitigation.

Received: 2025-03-12
Accepted: 2025-04-17
Published Online: 2025-04-30
DOI: 10.70454/JRICST.2025.20215

Journal of Recent Innovations in Computer Science and Technology
E-ISSN: 3050-7030, P-ISSN: 3050-7022

## 5. Practical Applications

### 5.1 AI and Cloud Computing in Disaster Management: Real-World Applications

The intersection of Cloud Computing and Artificial Intelligence (AI) has transformed disaster management techniques, enhancing prediction, early warning, real-time observation, and efficient resource distribution capabilities. A few real-life cases attest to the success of these technologies in mitigating the impacts of natural disasters.

#### 5.1.1 Flood Risk Management in Spain's Aragon Region

In March 2025, Amazon Web Services (AWS) began an artificial intelligence program to lower the danger of flooding in Spain's province of Aragon, where AWS is developing giant data center facilities. The initiative involves investing €17.2 million to strengthen flood defense and optimize water consumption in agriculture by employing AI technology. The initiative involves deploying advanced cloud-based early warning systems that gather real-time information using networks of sensors. AI analyzes this data to monitor weather patterns and ocean currents, sending advance flood warnings to first responders. This is a preemptive step to make the area less vulnerable to floods, particularly in areas traversed by the flood-prone Ebro River.

#### 5.1.2 AI-Enabled Wildfire Detection in California

AI-equipped cameras in California are virtual sentinels of fire to detect wildfires before they become uncontrollable. The ALERTCalifornia network, which is managed by the University of California, San Diego, debuted AI bots last year to survey more than 1,150 cameras in fire-prone regions. Human alerts have been around for a long time, and AI systems have identified over 1,200 confirmed fires multiple times. AI cameras, for example, correctly alerted Orange County at 2 a.m. in December 2024 that there was a fire, allowing the fire to be contained to less than a quarter of an acre. It allows wildfire warning and response to occur early to intercept colossal damage.

#### 5.1.3 AI for Tsunami and Earthquake Detection

Tsunami detection systems are furthered through the introduction of AI technology for tsunami detection and prediction. Both the seismic data and the advanced algorithms help AI improve the accuracy of these systems and allow for advanced evacuation and disaster readiness. Like earthquake systems, AI has also brought about new transformations of, for example, deep learning algorithms and computational models to improve monitoring, phase picking, and detection of seismic signals. They provide time and precise information to aid in more effective and faster disaster response plans.

#### 5.1.4 AIDR: Artificial Intelligence for Digital Response

Received: 2025-03-12
Accepted: 2025-04-17
Published Online: 2025-04-30
DOI: 10.70454/JRICST.2025.20215
Journal of Recent Innovations in Computer Science and Technology
E-ISSN: 3050-7030, P-ISSN: 3050-7022

Development of Artificial Intelligence for Digital Response (AIDR), an open-source system to screen and classify social media tweets on emergencies, disasters, and humanitarian crises. In large-scale emergencies, a massive amount of information is collected online, which is processed to give us valuable data with machine learning and human intelligence algorithms by AIDR. One such instance where AIDR was used in the analysis and classification of social media tweets to gauge the situation and to provide an indication of quick response actions was the 2014 Iquique earthquake in Chile.

**Table 3:** AI-Powered Disaster Prediction Accuracy

| **Disaster Type** | **Traditional Forecasting Accuracy (%)** | **AI-Powered Forecasting Accuracy (%)** | **Accuracy Improvement (%)** |
|---|---|---|---|
| Earthquakes | 55% | 78% | 42% |
| Floods | 68% | 91% | 34% |
| Wildfires | 60% | 88% | 47% |
| Hurricanes | 72% | 95% | 32% |
| Droughts | 65% | 89% | 37% |

## Success Stories and Lessons Learned

Successful experience with AI and cloud computing in disaster management offers valuable lessons:

**AI Applied:** Early warning, as demonstrated in California, where AI is being used to detect when wildfires are starting, is an example of an instance of early warning. It should prompt and effectively respond to the situation. Quick response is made possible with less damage and more public safety earlier.

**Analysis and Data Integration:** When it comes to disaster management, AI will succeed in integrating disparate data and providing analytical capability. To illustrate the importance of combining real-time collection of data with analysis through AI, AWS's series of projects on flood risk management conductive in Aragon are a good example.

**Community Inclusion and Transparency:** AIDR suggests that community involvement and transparency in AI are necessary. Participation and public response through social media streamline disaster response.

Dynamic nature: AI technology's nature is dynamic, and it needs continued improvement and evolution. Experience in multiple implementations requires that disaster management strategies continue to be learned and adjusted based on new situations to remedy evolving challenges.

## 6.0Conclusion and Future scope

Emergency operation management is a big leap in applying AI and collaborative cloud-based platforms. These tools enable organizations to stream real-time big data, predict disasters based on predictive modeling, and manage responses best. Despite data integrity, cyber security, and ethics challenges, innovation and multidisciplinary research must continue to sharpen these tools. These digital solutions can be applied to develop proactive threat management practices that save lives and the life of infrastructure and enhance community long-term resilience.

## Future scope

Future research needs to explore the integration of AI and cloud platforms to create standardized decision-making models in disaster management. More interdisciplinary studies are required to evaluate cloud infrastructure's long-term scalability and cost-effectiveness, particularly in developing nations with limited technological capability. Research must consider the ethics of AI-based decision-making, such as algorithmic transparency and avoiding bias. In addition, enhancing data interoperability between various AI and cloud platforms could facilitate better sharing of real-time information and resources. Research for improving AI predictive accuracy through enhanced datasets and advances in machine learning remains essential for continued progress.

## Author Contributions

Both Authors contributed equally.

## Funding

No funding was provided for this study.

## Conflicts of Interest

The authors declare that there are no conflicts of interest regarding the publication of this paper.

Received: 2025-03-12
Accepted: 2025-04-17
Published Online: 2025-04-30
DOI: 10.70454/JRICST.2025.20215

Journal of Recent Innovations in Computer Science and Technology
E-ISSN: 3050-7030, P-ISSN: 3050-7022

## References

[1] Aboualola, M., Abualsaud, K., Khattab, T., Zorba, N. and Hassanein, H.S., 2023. Edge technologies for disaster management: A survey of social media and artificial intelligence integration. IEEE access, 11, pp.73782-73802.

[2] Agbehadji, I.E., Mabhaudhi, T., Botai, J. and Masinde, M., 2023. A systematic review of existing early warning systems' challenges and opportunities in cloud computing early warning systems. Climate, 11(9), p.188.

[3] Costa, D.G., Peixoto, J.P.J., Jesus, T.C., Portugal, P., Vasques, F., Rangel, E. and Peixoto, M., 2022. A survey of emergencies management systems in smart cities. IEEE Access, 10, pp.61843-61872.

[4] Damaševičius, R., Bacanin, N. and Misra, S., 2023. From sensors to safety: Internet of Emergency Services (IoES) for emergency response and disaster management. Journal of Sensor and Actuator Networks, 12(3), p.41.

[5] Gupta, S., Modgil, S., Kumar, A., Sivarajah, U. and Irani, Z., 2022. Artificial intelligence and cloud-based Collaborative Platforms for Managing Disaster, extreme weather and emergency operations. International Journal of Production Economics, 254, p.108642.

[6] Hernández, D., Cano, J.C., Silla, F., Calafate, C.T. and Cecilia, J.M., 2021. AI-enabled autonomous drones for fast climate change crisis assessment. IEEE Internet of Things Journal, 9(10), pp.7286-7297.

[7] Khan, R.S., Sirazy, M.R.M., Das, R. and Rahman, S., 2022. An ai and ml-enabled framework for proactive risk mitigation and resilience optimization in global supply chains during national emergencies. Sage Science Review of Applied Machine Learning, 5(2), pp.127-144.

[8] Kyrkou, C., Kolios, P., Theocharides, T. and Polycarpou, M., 2022. Machine learning for emergency management: A survey and future outlook. Proceedings of the IEEE, 111(1), pp.19-41.

[9] Peyvandi, A., Majidi, B., Peyvandi, S. and Patra, J., 2021. Computer-aided-diagnosis as a service on decentralized medical cloud for efficient and rapid emergency response intelligence. New Generation Computing, 39(3), pp.677-700.

[10] Richardson, N., 2021. Emergency Response Planning: Leveraging Machine Learning for Real-Time Decision-Making. Emergency, 4, p.14.

Received: 2025-03-12
Accepted: 2025-04-17
Published Online: 2025-04-30
DOI: 10.70454/JRICST.2025.20215

Journal of Recent Innovations in Computer Science and Technology
E-ISSN: 3050-7030, P-ISSN: 3050-7022

[11] Sun, W., Bocchini, P. and Davison, B.D., 2020. Applications of artificial intelligence for disaster management. Natural Hazards, 103(3), pp.2631-2689.

[12] Velev, D. and Zlateva, P., 2023. Challenges of artificial intelligence application for disaster risk management. The International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences, 48, pp.387-394.

[13] Velev, Dimiter&Zlateva, Plamena. (2023). CHALLENGES OF ARTIFICIAL INTELLIGENCE APPLICATION FOR DISASTER RISK MANAGEMENT. The International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences. XLVIII-M-1-2023. 387-394. 10.5194/isprs-archives-XLVIII-M-1-2023-387-2023.

[14] Zlopasa, O., 2024. Leveraging AI for Geospatial Analysis in Flood Risk Assessment and Environmental Monitoring.

[15] Verma, K. K., & Singh, B. M. (2021, November). Vision based human activity recognition using deep transfer learning and support vector machine. In 2021 IEEE 8th Uttar Pradesh Section International Conference on Electrical, Electronics and Computer Engineering (UPCON) (pp. 1-9). IEEE.

[16] Verma, K. K., Singh, B. M., Mandoria, H. L., & Chauhan, P. (2020). Two-stage human activity recognition using 2D-ConvNet. IJIMAI, 6(2), 125-135.

[17] Verma, K. K., Kumar, P., &Tomar, A. (2015, March). Analysis of moving object detection and tracking in video surveillance system. In 2015 2nd International Conference on Computing for Sustainable Global Development (INDIACom) (pp. 1758-1762). IEEE.