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REVIEWER'S REPORT

Manuscript No.: IJAR-56659

Title: Adaptive Disaster Relief Routing Using Deep Reinforcement Learning Under Dynamic Road Disruptions

Recommendation:

Accept as it is .....

Accept after minor revision...

Accept after major revision .....

Do not accept (*Reasons below*) .....

Rating	Excel.	Good	Fair	Poor
Originality		Good		
Techn. Quality	Excellent			
Clarity	Excellent			
Significance	Excellent			

Reviewer's ID: Dr. Sumathi

Detailed Reviewer's Report

1. **Disaster management is the strategic process of organizing resources and measures to prepare for, respond to, and recover from natural or human-made disasters to reduce impact and "build back better". It involves a cycle of mitigation, preparedness, response, and recovery, requiring coordination between government, non-profits, and private sectors.**
2. **Deep Reinforcement Learning (DRL) combines reinforcement learning principles with deep neural networks to enable agents to learn optimal behaviors through trial-and-error in complex environments. By maximizing cumulative rewards, DRL handles high-dimensional state spaces—such as pixels or sensor data—to solve complex tasks like robotic control, gaming, and decision-making.**
3. **Dynamic Vehicle Routing (DVR) optimizes transportation routes in real-time by adjusting to unpredictable changes like new orders, traffic, or weather conditions. Unlike static routing, DVR continuously updates plans during execution to improve efficiency and service levels. It is essential for dynamic environments such as courier services, ride-sharing, and emergency logistics.**

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4. **Emergency logistics involves the rapid planning, coordination, and delivery of critical supplies—such as food, water, medical kits, and shelter—during natural disasters, conflicts, or humanitarian crises.**
5. **PPO is a popular, stable, and efficient reinforcement learning algorithm that improves training by limiting policy updates using a clipped surrogate objective. It balances ease of implementation with performance, making it a "gold standard" for robotics, control tasks, and AI alignment (RLHF).**
6. **A Deep Q-Network (DQN) is a reinforcement learning algorithm combining Q-learning with deep neural networks, developed by DeepMind to enable agents to learn optimal actions directly from high-dimensional inputs, such as raw pixels in games. It overcomes traditional Q-table limitations by approximating action-value functions, using experience replay and target networks to stabilize training and improve performance.**
7. **Disaster response systems are coordinated frameworks—such as the U.S. National Response Framework (NRF) and National Incident Management System (NIMS)—designed to manage emergencies through structured, scalable collaboration among government, NGOs, and the private sector. Key components include GIS-driven situational awareness, rapid search and rescue teams (US&R), and public alert systems.**
8. **Key words are excellent!**
9. **Flow chart, picture and significant points are given awesome.**
10. **Summary points only can be included.**
11. **References should be in alphabetical order.**
12. **After a small changes good to publish in your journal.**