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POST-DISASTER SHELTER SITE ROUTE RECOMMENDATION IN SENSOR NETWORKS USING CENTRALITY CIRCUMVENT ALGORITHM

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Abstract

Disasters, whether natural or manmade, pose significant challenges at both the global and national levels, necessitating comprehensive strategies for mitigation, preparedness, response, and recovery. Globally, the impact of disasters is exacerbated by factors such as climate change, urbanization, and socioeconomic disparities, leading to heightened vulnerability and escalating humanitarian crises. In India, a country prone to various natural hazards, such as floods, cyclones, earthquakes, and droughts, disaster management is a critical concern due to its vast geographical expanse and dense population centres. In a post-landslide environment, victims must be brought to shelter locations in a safe manner. It is crucial to find a safer alternative path to accessing shelter sites because of the distortions that can occur due to disasters. In this article, we developed an algorithm to locate a circumvent route so that the distorted paths are skipped to obtain a better and safer route. By utilizing the closeness centrality circumvent algorithm, we demonstrated the improvement of the deformed routes to better circumvent routes regarding the number of decision edges, number of overlapped edges and total circumvent path distance with the real-time road networks of town of Kodaikanal, Tamilnadu.

Key words: accessible paths, alternative paths, circumvent paths, post-landslide scenario, route recommendation

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