

# Disaster Management Monitoring using Fog Computing in Internet Of Things (IoT) paradigm

## Abstract

The process of attaining and assessing the information generated by a multitude of sources such as sensors, mobile devices, vehicles and humans, is termed as crowdsourcing in internet of things (IoT) paradigm which exploits cloud computing widely. If disasters such as earthquakes, fire, storms and floods are detected early, effective preventive measures, prediction and early warning systems can be made possible and thousands of lives and property can be saved. The crowdsourced data pertaining to a certain geographic region if were to be analyzed in a cloud platform as is being done now, by the time the crowdsourced data makes its way to the cloud for analysis, the opportunity to act on it might be gone and lives will be at stake. Thus cloud computing platform makes it unsuitable for real-time events such as disaster and natural calamities management due to the delay and jitter caused due to the latency in networks. Therefore, it is very imperative that fog computing/edge computing is employed to analyze such critical crowdsourced IoT data at the network edge, close to where it is generated and only selected data is sent to the cloud for historical analysis and longer-term storage.

In the paper proposed by Rauniyar et al, a crowdsourcing-based disaster management using fog computing (CDMFC) model in IoT is discussed for early disaster detection and preparedness [1]. In this project, we aim to implement this architecture as follows:

1. Event Sensing
2. Crowdsourcing Data/ Filtering Disaster related IoT data
3. Sending Disaster related IoT Data to Fog/CDMFC Layer
4. Analyzing Disaster related IoT data in Fog
5. Disseminating Early Information for Public Safety

The proposed CDMFC model can conserve network bandwidth as only disaster related data will be analyzed on fog and rest of the data will be analyzed in the cloud. We also would like to include SIR (susceptible, infected and recovered) model-based simulations to investigate the extent to which the proposed CDMFC model helps in improving disaster response [4].

## References :

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