

## I felt it, did you? Sensor network and Social media can collaborate for disaster mitigation

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Kim et al. (2015) has developed a community based MEMS sensor network in Yokohama. The project aims to distribute the sensors every several hundreds meters in the area to provide information more closely linked to community's life. The network consists of sensor unit utilizing 12 bit MEMS sensor and Raspberry pi, which detects strong motion and process the data. In this study, we linked the sensor network with social media to share the triggering information among the community for future disaster mitigation.

In the sensor network, once the strong motion is detected, each sensor unit sends the triggering information to the main server. After all the information is collected, the server checks the status of the sensor unit which didn't detect the strong motion. As long as it was not break down, the 'not triggered' unit will respond to the server to inform "I am safe" means it is working but didn't detected a strong motion. Then the information is share via social media among the community. As one can imagine, 'not triggering' is very important first order safety confirmation as well as 'triggering'.

For the strong motion detection, we utilized the artificial neural network (ANN) as the pattern recognition algorithm. ANN works well under the low signal to noise ratio environment operation. However, noises which have similar pattern of strong motion signal still make false alarm. To overcome the issue, it might be helpful archiving both user's and sensor unit's triggering information in the system, and set up the site specific detection algorithm.

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