

## **ABSTRACT**

*Indonesia is a country that prone to earthquake natural disasters. Not a few people died because of this natural disaster. This is caused by the lack of knowledge of Indonesian people about what to do when earthquake occurs. To minimize losses due to earthquakes, we need tools that can detect earthquake vibrations.*

*The researchers designed an earthquake alarm that uses a geophone to detect ground vibrations. Artificial Neural Network will classify whether the vibrations detected are classified as earthquake or not an earthquake. Then the results of the geophone will be voiced through the speaker and will provide information about the scale of the earthquake that occurred based on MMI and also provide information through speakers that have been connected to DF MP3 Player module about the actions that must be taken when the earthquake occurs.*

*In this final project, it was found that the geophone sensor can detect vibrations, so it can detect earthquakes and measure it using the MMI scale. The detected scale is V (five) to X (ten) MMI scale. The audible sound intensity of audio warning is in the range of 74 to 78 dBA at a distance of 30 meters and 67 to 69 dBA at a distance of 60 meters.*

**Keywords :** *Artificial Neural Network, Earthquakes, Vibrations, Earthquake Alarm, Geophone Sensor, DF MP3 Player Module*