

ABSTRACT

Earthquakes are natural events that occur due to the movement of the earth's plates. Hot liquid magma with great energy causes the earth's plates to move. These natural events cannot be eliminated or manipulated. These earthquakes occur repeatedly so as to form a pattern of seismic activity. This pattern can be used as knowledge to predict earthquake activity. This study applies the Sequential Pattern Mining (SPM) method to find patterns from a series of earthquake activities. Furthermore, to obtain rules with confidence values for the pattern sequence, the Sequential Rule Mining (SRM) method is used. The earthquake prediction system shows promising result to some extent and based on two kinds of weight. The experimental results show that the prediction accuracy with no weights is 78.625%) compared to the accuracy is 83.940% using betweenness centrality value as the weight. Meanwhile, the accuracy is 83.605 % using eigenvector centrality as the weight.

Keywords: complex network analysis, sequential pattern mining, minimum support, centrality measurements, sequential rule mining