## Prediction of cantilever retaining wall stability using optimal kernel function of support vector machine

## ABSTRACT

The Support Vector Machine is one of the artificial intelligence techniques that can be applied to forecast the stability of cantilever retaining walls. The selection of the right Kernel function is very important so that the Support Vector Machine model can make good predictions. However, there are no general guidelines that can be used to select Kernel functionality. Therefore, the Kernel function which consists of Linear, Polynomial, Radial Basis Function and Sigmoid has been evaluated to determine the optimal Kernel function by using 10 cross-validation (V-fold cross-validation). The achievement of each function is evaluated based on the mean square error value and the squared correlation coefficient. The mean square error value is closer to zero and the squared correlation coefficient closer to the value of one indicates a more accurate Kernel function. Results show that the Support Vector Machine model with Radial Basis Function Kernel can successfully predict the stability of cantilever retaining walls with good accuracy and reliability in comparison to the various other Kernel functions.