M-Y. Cheng, N-D. Hoang, Y-W. Wu. **Prediction of project cash flow using time-depended evolutionary LS-SVM inference model.** *Gerontechnology 2012;11(2):290;* doi:10.4017/ gt.2012.11.02.223.00
Purpose The ability to predict cash demand is crucial for the operation of construction companies[1]. Reliable cash flow prediction during the execution phase can help managers to avoid cash shortages and to control project cash flow effectively. **Method** This paper presents a new inference model, CF-ELSIM$_T$, for cash flow forecasting. The developed CF-ELSIM$_T$ utilizes weighted Least Squares Support Vector Machine (wLSSVM) as a supervised learning technique to generalize the mapping function between input and output of cash flow time series. A novel dynamic time function (TF) is employed to determine the weighting values associated with data in different time periods. The dynamic TF allows the model to deal with distinct characteristics in cash flow time series. To optimize the model's tuning parameters, the new inference model incorporates Differential Evolution[2] (DE) as the search engine. In addition, a machine-learning-based interval estimation (MLIE) approach is used to arrive at the prediction interval of forecasted cash demand[3]. **Results & Discussion** The CF-ELSIM$_T$ provides construction planners with a point estimate coupled with the lower and upper prediction intervals (*Figure 1*). Experimental results and comparisons have demonstrated that the newly established model has enhanced the forecasting accuracy.

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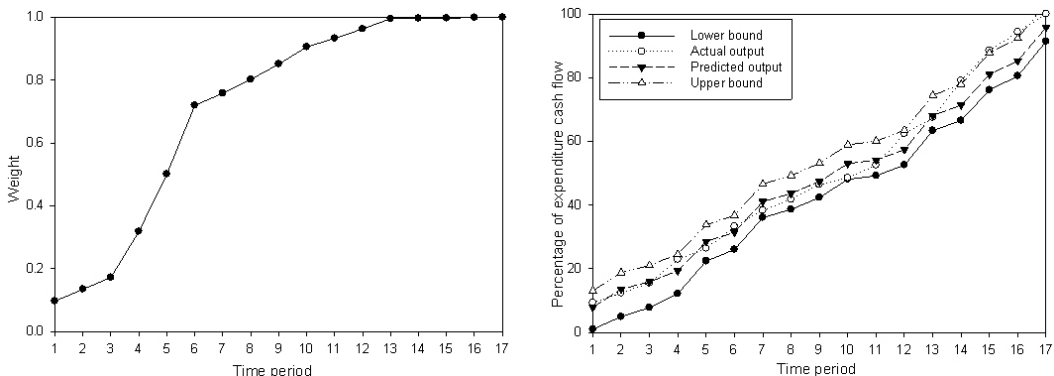*Full paper*: doi:10.4017/gt.2012.11.02.223.774

Figure 1. Dynamic TF (left); Cash flow prediction using CF-ELSIM$_T$ (right)