Abstract-- Diabetes Mellitus is one of the preeminent causes of death to date. Effective procedures are necessary to prevent diabetes and avoid complications that may cause early death. A common approach is to control patient blood glucose, which necessitates a periodic measurement of blood glucose concentration. This study developed a blood glucose prediction system using a convolutional long short-term memory (Conv-LSTM) algorithm. Conv-LSTM is a variation of LSTM algorithms that are suitable for use in time series problems. Conv-LSTM overcomes the lack in the LSTM algorithm because the latter algorithm cannot access the content of previous memory cells when its output gate has closed. We tested the algorithm and varied the experiment to check the effect of the cross-validation ratio between 70:30 and 80:20. The study indicates that the cross-validation using a ratio of 70:30 data split is more stable compared to one with 80:20 data split. The best result shows a measure of 21.44 in RMSE and 8.73 in MAE. With the application of conv-LSTM using correct parameters and selected data split, our experiment attains accuracy comparable to the regular LSTM.
Keywords: diabetes mellitus, blood glucose, recurrent neural network, long short-term memory