Abstract
Natural gas is one of the most important energy resources today, that used by households, industry and electricity generation. So it is important to maintain the reability in the natural gas operational system. One of them is by analyzing the anomalies in the distribution process. This research aims to create a programmatic detection system for anomalies that in natural gas pipeline operations using machine learning technology. The methods has been used are Long Short-Term Memory (LSTM) and BiDirectional Long Short-Term Memory (Bi-LSTM). The feature extraction technique has been used was peak-to-peak anomaly detection. This research obtained an accuracy value of 99% for LSTM and 99% for Bi-LSTM with a loss value of 0.0220.

Keywords: Anomaly, BiLSTM, LSTM, Natural Gas