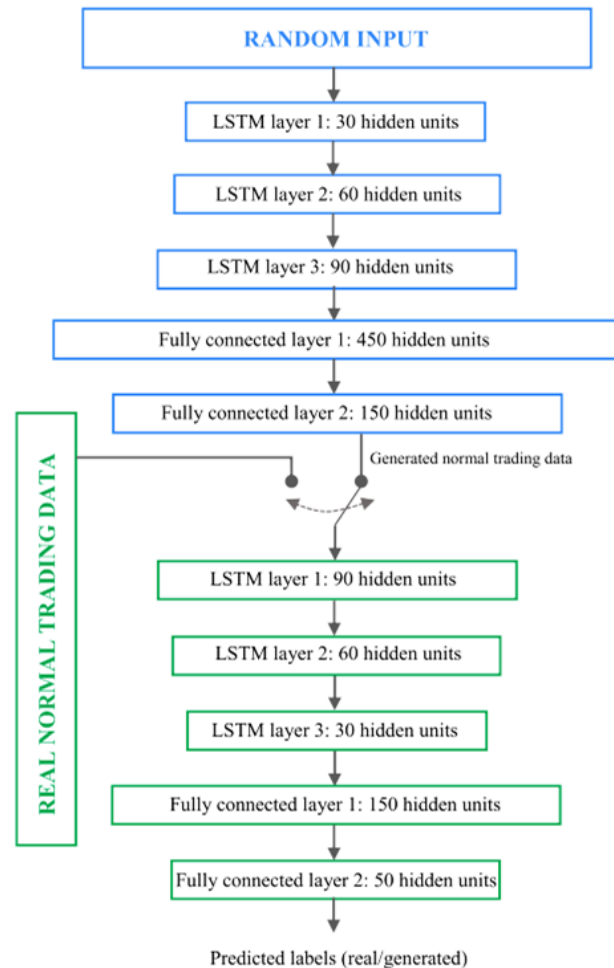


LSTM-GANs structure for stock price manipulation detection

Measures	LSTM-GANs
Recall	0.1519
Specificity	0.9999
Precision	0.9999
Accuracy	0.5640
F-Beta Score	0.3289



To predict a class label in a classification task, a decision threshold must be set. The final layer of the LSTM-AE model does not output the probability of manipulation, but it does output the reconstruction of the input. The reconstruction error can be calculated. If it is set to a high value, the input data is regarded as abnormal or manipulated. Because the problem requires high specificity, the LSTM-AE decision threshold was determined by the maximum value of the reconstruction errors from the validation set to achieve the highest specificity value. In the case of LSTM-GANs, the discriminator D can provide the probability of one of two classes representing the real or fake case. A real case is one that involves normal trading; otherwise, it is considered an anomaly. The threshold for the discriminator's output was set to 0.5 by default to differentiate predicted probabilities between 0 and 1.

LSTM-AE structure for stock price manipulation detection

Measures	LSTM-AE
Recall	0.3863
Specificity	0.9999
Precision	0.9999
Accuracy	0.6839
F-Beta Score	0.7589

