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(57) Abstract :

ENHANCING ENERGY FORECASTING IN COMBINED CYCLE POWER PLANTS USING A HYBRID CONVLSTM AND FC NEURAL NETWORK MODEL
The present invention relates to the development of a hybrid intelligent model based on a combination of Convolutional LSTM (ConvLSTM) and Fully Connected (FC) layers of the neural network is presented to achieve accurate predictions of the power output under changing operational and environmental conditions. The ConvLSTM layers enable the intelligent system to extract spatiotemporal relationships between essential variables like ambient temperature, exhaust vacuum, pressure, relative humidity, etc., to achieve accurate predictions. The FC layers help to improve the accuracy of the predictions. The proposed intelligent system, based on the hybrid model, shows better performance compared to the conventional machine learning and LSTM-based models. The intelligent system provides better accuracy, robustness, and generalization capabilities. The proposed intelligent system plays a vital role in the intelligent management of modern combined cycle power plants. FIG.1
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