Francisco de Assis Boldt

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Predição da Temperatura do Ferro-Gusa em um Alto-Forno utilizando Redes Neurais LSTM

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Autores Rodrigo Seidel, Karin Satie Komati, Thiago Oliveira Santos, Francisco de Assis Boldt, Filipe Mutz, Leandro Colombi Resendo

Data de publicação 2022/7/13

Publicações Anais do Computer on the Beach

Volume 13

Páginas 164-171

Descrição Due to the importance of the steel industry in the national economy and the inherent complexity of operating a blast furnace, it is necessary to study ways to optimize its operation and the consumption of resources, therefore, this work aims to investigate the use of the LSTM (Long Short Term Memory) neural network to perform the prediction of the next temperature of the hot metal being produced. In this way, it is possible to support the work of the blast furnace operators, in order to optimize the consumption of resources to keep the blast furnace operating. With the results obtained from the experiments using the blast furnace operating data as a time series, it is concluded that the use of LSTM is satisfactory and that improvement of these experiments will meet the needs of the steel industry. The best result for LSTM, using 2 layers and 2048 neurons, achieved a Root Mean Square Error of 11.82 ºC.