ABSTRACT

In this modern era, places to eat in the form of restaurants are becoming very popular, especially in big cities. However, this can cause congestion or queues of visitors at a restaurant, which must be avoided during the Covid-19 pandemic like today. So that the use of technology in the form of applications that can provide accurate information to visitors about the density of restaurants will be very useful.

In obtaining information on restaurant density, GPS (Global Positioning System) data processing is carried out which is obtained from the cellphones of visitors and people around the restaurant. Then the data that has been collected is processed using artificial intelligence in the form of RNN (Recurrent Neural Network) LSTM-based to test the accuracy of the data from inside the restaurant. So that the density of the restaurant can be predicted through the GPS coordinate data that is inside the restaurant coordinates. The results of the study using the LSTM-based Recurrent Neural Network (Long Short Term Memory) produced the best MSE value using a learning rate of 0.001 and a maximum epoch of 2000 of 3.57E-07 *on the train data and 0.006 on the test data.*

Keywords*: GPS, WiFi-RTT, Neural Network, Recurrent Neural Network, LSTM*