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Association of COVID-19 pandemic with meteorological and PM 10 in Thailand using LSTM models

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The first SARS-CoV-2 infections were discovered in Wuhan, China, and then the virus became the pandemic known as "COVID-19". In Thailand, the COVID-19 situation is still on going and is extremely serious in the central region of the country. To understand the pandemic in Thailand, we investigated the association of three variables, temperature, relative humidity, and the concentrations of PM 10, on the number of cases. We applied a long short-term memory model (LSTM) to predict the number of cases from these associated factors, in the central region of Thailand. This study observed the COVID-19 reported cases from Open Government Data. The meteorological variables data were obtained from the Global Surface Summary of the Day (GSOD), and the PM 10 data was obtained from the World Air Quality Index (WAQI). The results showed that the variables related to the number of COVID-19 cases and could be used to predict the number of cases. We also studied the effect of time lags to the number of cases.

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