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COVID-19 Case Prediction Using Emotion Trends via Twitter Emoji Analysis

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The worldwide COVID-19 pandemic, which began in December 2019 and has lasted for almost 3 years now, has undergone many changes and has changed public perceptions and attitudes. Various systems for predicting the progression of the pandemic have been developed to help assess the risk of COVID-19 spreading. In a case study in Japan, we attempt to determine whether the trend of emotions toward COVID-19 expressed on social media, specifically Twitter, can be used to enhance COVID-19 case prediction system performance. We use emoji as a proxy to shallowly capture the trend in emotion expression on Twitter. Two aspects of emoji are studied: the surface trend in emoji usage by using the tweet count and the structural interaction of emoji by using an anomalous score. Our experimental results show that utilizing emoji improved system performance in the majority of evaluations.

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