

## ***ABSTRACT***

### ***LST BASED FIRE POTENTIAL PREDICTION USING LSTM ALGORITHM (DATA STUDY: WEST KALIMANTAN PROVINCE)***

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*Indonesia geographically located along the equator, making it a country that has two seasons. During the dry season, the potential for forest and land fires increases. Apart from seasonal factors, global warming also increases the risk of fire. This causes fires to occur frequently, whether caused by natural aspects or caused by human intention. One of the areas where fires frequently occur is West Kalimantan, this is characterized by the very large area burned in that area. These fires certainly have impacts on health, the environment, and the economy. Prevention of this problem is generally carried out by outreach to related parties. However, there is still a lack of creative efforts to find solutions such as creating technology. Technological capabilities such as AI can be used to prevent fires. This research aims to apply AI technology with the LSTM method to predict forest and land fires in West Kalimantan. The LSTM method can study forest and land fire patterns so that fires can be predicted. The results show that Deep Learning with the LSTM method can be used to predict surface temperature to identify potential fires. The best model was obtained with an architecture of 1 LSTM layer with 32 units, followed by a dense layer with 16 units, and an output layer with 1 unit, with a training-validation ratio of 0.8, achieving a test result with an RMSE error value of 1.45191. The best model then used for predictions and deployed into a web-based mapping application displaying potential fire.*

***Keywords: Mapping, LSTM, Deep Learning, Fire, AI***