ABSTRACT

IMPLEMENTATION OF THE RANDOM FOREST ALGORITHM FOR PREDICTING CAR CABIN TEMPERATURE TO PREVENT LITHIUM BATTERRY OVERHEAT

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Cars are an important part of everyday life in Indonesia, with the number of vehicles continuing to increase. Apart from being a means of transportation, cars also function as temporary storage space for various goods, including those that use lithium batteries. The risk of overheating of the lithium battery increases when the car is parked under direct sun exposure, causing the cabin to become hot. This research proposes a car cabin temperature prediction system using the Random Forest algorithm based on data from the embedded system. This system provides notifications to vehicle owners when temperatures reach dangerous levels and predicts temperatures at certain hours, so owners can avoid storing items with lithium batteries in dangerous conditions. The research results show that the Random Forest algorithm is able to predict temperature with an accuracy of more than 90%, making it effective in preventing the risk of overheating in lithium batteries.

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