

UNIVERSITI TEKNOLOGI MARA

**Prediction of Rainfall Rate by Using Fuzzy
Inference System**

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STUDENT'S DECLARATION

I certify that this report and the research to which it refers are the product of my own work and that any ideas or quotation from the work of other people, published or otherwise are fully acknowledged in accordance with the standard referring practices of the discipline.

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ABSTRACT

Malaysia is a country located near the equator that experiences a tropical climate throughout the year. During monsoon, raining would be inevitable and sometimes it could bring difficulties to many. Raining effects the agriculture field, the fishermen, and could also cause natural disasters such as flood and land slide. Thus, acknowledging rainfall rain rate is essential for people so that they could plan their routine and activities based on the weather. Not only that, the people can prepare themselves for incoming flood. The objective of the study is to predict the rainfall rate by using the fuzzy inference system. Besides that, this study also aims to obtain the fuzzy rules for the forecasting model, predict output of rainfall and analyse the sum square error from the result received. The input variables used in this method were wind speed and temperature, while the output would be rainfall rate. The input variables would be analysed in order to produce the fuzzy rules. Membership functions will be assigned for each variable. All of the information will be transferred to MATLAB to analyse and produce the output. The error will be calculated from the outputs, which are the fuzzified rainfall rate and the actual rainfall rate. The result shows that quite a significant amount of error happen and the association between the variable is low.

Keywords: Monsoon, raining, rainfall rate, fuzzy inference system

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