

IMPLEMENTING IOT AND MACHINE LEARNING FOR DISASTER MITIGATION

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Abstract: This prototype output research has the aim of creating a dashboard that is used to monitor river water levels. The dashboard created will display data in real-time and prediction results. The use of the dashboard is to minimize the risk in the event of flooding caused by river overflow. The way this prototype works is to take data from sensors that have been installed at several points. The recorded data will be stored in a database using the working principles of the *Internet of Things*. For predictions, *machine learning* is used to produce future river water level figures. The machine learning used is using *time series* regression with rainfall input and river water level output. Long-term output data is needed, therefore to forecast future rainfall the Hybrid method is used. Data generated from sensors as well as from prediction results are stored in one database. From the database, data visualization is displayed along with important figures used for *river overflow intelligence*. Therefore, the dashboard is very useful for people living around the river flow.

Keywords: Prototype, Disaster Management, Flood Prediction, Internet of Things, Machine Learning
