

AI-Based Chatbot Development with Natural Language Processing to Support Information and Disaster Mitigation in Flood Disaster Prediction Systems.

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ABSTRACT

Flooding is one of the most common hydrometeorological disasters in Indonesia and has significant impacts on society, both in terms of material losses and casualties. With the increasing need for fast and accurate information, a system is required that can not only predict disasters but also effectively deliver information to the public. This study aims to develop a chatbot based on Artificial Intelligence (AI) using a Natural Language Processing (NLP) approach integrated into a flood disaster prediction system. The developed chatbot is capable of understanding user queries in natural language and providing real-time information, such as data on fatalities, injuries, missing victims, and disaster events based on time (today, yesterday, or specific dates). The methods used include NLP processes such as text normalization, tokenization, keyword matching, and fuzzy matching. The results of this study indicate that the chatbot is able to improve the ease of access to information and effectively support disaster mitigation, achieving a success rate of 100%. With this system, the community is expected to be better prepared to face flood disasters.

Keyword: Chatbot, Artificial Intelligence, Natural Language Processing, Disaster Mitigation, Flood, Information System