ABSTRACT

Wayang kulit is one of Indonesia's cultural heritage, especially from the Javanese community. Wayang kulit is often featured in wayang kulit performances, with the Dalang as the leader of the show. The wayang kulit featured in these performances consists of various characters. Each wayang kulit character has its own distinctive features and uniqueness that can be observed from their head shapes, clothing, and so on. However, these characteristics are not widely known by the public due to the perceived lack of practical sources of information related to wayang kulit. On the other hand, each Dalang has a different style in creating the forms of wayang kulit characters.

In response to these issues, an idea emerged to develop a mobile application based on deep learning that can classify wayang kulit characters. This application is called Ganasoca. Ganasoca uses the CNN VGG-19 algorithm to classify and analyze images of wayang kulit taken with a smartphone camera. The User Interface (UI) of this application is programmed using Android Studio with the Flutter language, and important information such as descriptions of wayang kulit characters is stored in Firebase cloud services.

Based on the survey results, the majority of users are satisfied with the system, particularly in terms of efficiency, ease of navigation, and responsiveness, with the application response time being under 1 second. Although some users find the system complex, they do not require much technical assistance. Usability analysis shows that the system is easy to use. Deep learning model testing reaches 90% accuracy rate with RMSprop optimizer, 0,001 learning rate, and 32 batch size configuration. However, there are several areas that need improvement, such as error messaging and feature documentation. Recommendations for simplifying the interface and enhancing accuracy stability are suggested to make the system more user-friendly and effective.

Keywords: Wayang, Mobile Application, Deep Learning, Ganasoca, User Interface, Cloud Computing.