ABSTRACT

APPLICATION OF THE DEEP LEARNING MODEL TO DEVELOPING CACA APPLICATIONS (CARI CAFE)

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The increase in coffee production encourages the growth of *cafe*s and creates confusion for consumers when choosing a *cafe* that suits their preferences. Therefore, *cafe* recommendations are important. However, prior to use, each application requires registration, which often takes time because it involves the stages of typing in identity information, uploading scanned KTPs, and waiting for data verification. This process is time-consuming. Previous research regarding the implementation of deep learning models for facial recognition systems made it possible to form a facial image recognition model on a computer. This research focuses on deep learning models for making café search applications. The deep learning model includes reading e-KTP images automatically, predicting the identity of the user's selfie photo, and verifying the e-KTP photo with the user's selfie photo. In achieving these three functions, artificial intelligence technologies such as optical character recognition (OCR), convolutional neural networks (CNN), and siamese neural networks (SNN) are used. This study succeeded in implementing OCR on e-KTP images with bounding boxes, where the box_loss value was 0.05211 and the cls_loss value was 0.01598. The use of the VGG16 transfer learning model with the sigmoid activation function to predict identity has also achieved optimal success. In addition, verification using SNN also gives good results, achieving an accuracy of 0.9285 with a loss value of 0.0170.

Keyword: *Deep Learning, Cari Cafe Application, Optical Character Recognition, Convolutional Neural Network, Siamese Neural Network.*