ABSTRACT

CLOTHING RECOMMENDATION AND FACE SWAP MODEL BASED ON VGG16, AUTOENCODER, AND FACIAL LANDMARK POINTS

Oleh

Imada Ramadhanti

Buying clothes can be done in two ways, namely buying directly and buying on e-commerce. When shopping at e-commerce, consumers cannot touch the product, let alone try the product. So this research provides a solution through the clothing recommendation model and the face exchange model to exchange consumer faces with faces on recommended clothing. The classification model dataset is clothing that is categorized into 8 classes with variations in size, clothing concept, and veiled or non-veiled clothing, while creating an autoencoder model requires source and target face datasets of 3,000 faces each. The method used to make the clothing recommendation model is VGG16 and the face exchange model uses the autoencoder and facial landmark points methods. The results of the classification model with 2 different architectures obtain an accuracy of 97.01% and 94.49% respectively. Then the results of the autoencoder model for the 12 models produced the lowest loss value with autoencoder I of 0.00012951 and in autoencoder II of 8.01e-05. The facial landmark points method is used if the autoencoder method does not produce good face swaps. Then the merging of the models consisted of the clothing recommendation model II and face swap using facial landmark points. The results of the evaluation of 30 consumers obtained a recommendation satisfaction level on a scale of 4 and were able to predict precisely on the parameter of clothing size by 19 consumers.