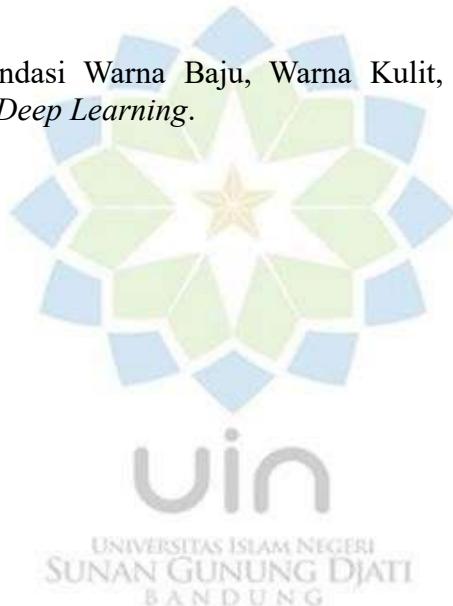


ABSTRAK

Warna kulit adalah kunci penampilan, namun seringkali sulit menemukan paduan warna pakaian yang serasi. Penelitian ini mengembangkan sistem rekomendasi warna baju otomatis berbasis citra untuk mengatasi masalah tersebut. Menggunakan metodologi CRISP-DM, kami melatih model *Convolutional Neural Network* (CNN) dengan arsitektur *InceptionV3* pada 3200 citra warna kulit dari Kaggle (putih, sawo matang, hitam), dengan penambahan data khusus untuk sawo matang karena kesulitan deteksi nuansa. Teknik augmentasi *zoom* dan *brightness* juga diterapkan. Model terbaik, epoch20_var9010.h5, mencapai *test accuracy* 80%. Meski akurasi tinggi, analisis *confusion matrix* menunjukkan beberapa *misclassification*, terutama pada kategori "hitam". Sistem ini berhasil diimplementasikan dalam antarmuka web, memungkinkan pengguna mengunggah citra wajah untuk mendapatkan rekomendasi palet warna baju yang relevan. Ini adalah kontribusi praktis dalam personalisasi *fashion* berbasis data.

Kata Kunci: Rekomendasi Warna Baju, Warna Kulit, *Convolutional Neural Network*, *InceptionV3*, *Deep Learning*.



ABSTRACT

Skin tone is key to appearance, yet finding harmonious clothing colors is often challenging. This research develops an automated image-based clothing color recommendation system to address this problem. Using the CRISP-DM methodology, we trained a Convolutional Neural Network (CNN) model with the InceptionV3 architecture on 3200 skin tone images from Kaggle (light, mid-dark, black). Special emphasis was placed on adding more data for mid-dark skin tones due to detection nuances. Image augmentation techniques like zoom and brightness were also applied. The best model, epoch20_var9010.h5, achieved a test accuracy of 80%. Despite this high accuracy, confusion matrix analysis revealed some misclassifications, particularly for the "black" category. The system was successfully implemented in a web interface, allowing users to upload face images to receive relevant clothing color palette recommendations. This represents a practical contribution to data-driven fashion personalization.

Keywords: Clothing Color Recommendation, Skin Tone, Convolutional Neural Network, InceptionV3, Deep Learning.

