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# PROVIDE A RECOMMENDATION TO THE FEMALE FASHION INDUSTRY BASED ON SOCIAL MEDIA USING DEEP LEARNING

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The fashion industry has extremely dynamic trends pursuing profit and growth. This dynamic factor can be used to create new value for the female fashion industry and the economy of the world. This research proposes a platform to give a conclusive idea about the current female fashion trend of clothing types and colours to the fashion industry. The images of celebrities, models, and other trendsetters were considered for data collection. These real-time data sets were downloaded via Instagram using a Web scraping technique with the puppeteer library of Node.js. Classification of gender, cloth type, and colour was performed using three different Convolutional Neural Networks (CNNs). The CNN used to filter the female images has 'rmsprop' optimiser with six layers with relu and max pooling. Cloth type was also categorised using a similar CNN that applied the 'adam' optimiser. 'sgd' optimiser used in the CNN which used to classify cloth colour with 'categorical_crossentropy' loss function. The trained CNN for gender classification was done with 82.0% accuracy, followed by 83.2% and 80.2% for clothing type and colour. To take the accuracy test, a programme was used to test the test data set. Predictions were stimulated using a Graphical User Interface (GUI) for convenient accessibility. The predictions were made in 0.49 seconds. Therefore, the proposed system is a user-friendly, computationally efficient method for predicting current trends in the female fashion industry.

**Keywords:** Convolutional Neural Networks, Image processing, Keras, Numpy array, Web scraping