PROJECT REPORT

PREDICTING DERIVATIVE NFT IMAGES USING CONVOLUTIONAL NEURAL NETWORK WITH THE DENSENET201 MODEL

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ABSTRACT

Derivative NFTs are modified versions of the original NFTs that have been altered or obtained through additional processing. This modification process may include changes in the color, appearance, composition, or content of an existing digital asset. Penelitian ini bertujuan untuk mengembangkan algoritma prediksi untuk mengklasifikasikan derivatif NFT (Non-Fungible Token) menggunakan teknik deep learning. In this context, the developed algorithm uses the DenseNet-201 architecture and involves steps such as data comprehension, data preparation, image augmentation, and the use of callbacks to stop model training when it reaches the desired level of accuracy. This study uses NFT-derived datasets collected by the researchers themselves, because there is no source that provides a large number of NFT datasets. Through experiments conducted, it is known that the use of DenseNet-201 architecture with a target size of 50x50 or 150x150 can produce a good level of accuracy, reaching 86-99%. The experimental results show that the implemented DenseNet-201 model is capable of classifying NFT derivatives with a good level of accuracy. The use of data augmentation and adjustment of certain hyperparameters also affects the improvement of model accuracy. In addition, analysis and visualization of the results were carried out using a confusion matrix to evaluate the performance of the model in classifying each NFT derived class.

Keyword: Machine Learning, Convolution Neural Network, Transfer learning, DenseNet201 Architecture.