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In Collaboration with

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## **DeepFake Detection using EfficientNet**

-The effectiveness of EfficientNet in Deepfake detection -

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## **Abstract**

Deepfake, deekfake has been an up-coming issue that is plaguing the world right now, a new form of cyber bullying that could have serious consequences when used in the wrong hands. However, there are methods of detecting these deepfakes. Deepfake detection systems, as you would see in this report, have produced high accuracy levels and have shown to be promising, specifically when done using deep learning. Deep learning will be our primary technique and would be discussed in this paper. However, one prevalent point brought up in the context of deep learning and deepfake is how computationally costly it is to train these models with big amounts of data. The more data you have to train, the more accurate you can try making your system be.

To tackle this issue, a new model that was created by google could be brought up, it's called efficientNet. EfficientNet is known to be highly accurate and very efficient which could help us in this case, as mentioned above. The more efficient and less power consuming a model is, the more data you could feed it to make it more accurate. This paper tries to prove this very point. It tries to achieve a high accuracy and show that it is more efficient than its counterparts like denseNet or resNet. Accuracy and computational performance was discussed.

Currently, efficientNet has proven to be accurate with an accuracy score of 88% when tested with test data. The implementation of it has been discussed as well. Proposed Classifier produces a score of 91%.

## **Keywords**

EfficientNet, Ensemble model, Efficiency.

## **Subject Descriptors**

Binary Classification, Deep Learning, Deepfake