This project solves the problem faced with identifying Nigerian traditional textiles and the kind of styles that can be sown with them.

I built a machine learning model and deployed in a mobile application that I developed.

I manually downloaded about 200 images of the different textiles from google images to train my model.

I carried out transfer learning on MobileNetV2 and I obtained an accuracy of 85%.

Evaluation and metrics: Accuracy, F1 score

Findings:
- The performance of the model was about 67% without transfer learning.
- Model was deployed on an android device.

Dataset:
- 200 medium resolution images were collected.
- I collected 50 images each for the four(4) categories.

Proposed Approach:
- I loaded my data into my notebook from my local directory using the Tensorflow data loader function.
- I made sure to scale the image data.
- I reshaped the data to the input shape of the mobilenetv2.
- I removed a few layers from the mobilenetv2 and trained the model.
- After getting the models pickle file, I deployed it in tflite format to the mobile application I built for it.
- Made styles recommendation using the image label identified by the model.

The developed model is capable recognizing the four Nigerian textile it was trained on with good accuracy.

Limitation:
- The solution was only limited to four traditional textiles. It cannot recognize varieties of African textiles for now.
- The model runs on device instead of a cloud platform.

Future Work:
- Gather more data to build a better model that could identify more African traditional textiles.
- More the model to a cloud platform so that it can be easily managed and updated.

REFERENCE
- Mobilenetv2: https://paperswithcode.com/method/mobilenetv2
- Dataset: https://images.google.com/