 natanielruiz / **android-yolo**

Real-time object detection on Android using the YOLO network with TensorFlow

#android-device #yolo #tensorflow #android-studio #tensorflow-yolo #detection #demo #apk #android #object-detection #pascal-voc #prediction

14 commits	1 branch	0 releases	2 contributors	Apache-2.0

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 natanielruiz Update README.md   Latest commit 4bb660d on 26 Oct

.idea	Added class name to bounding box.	6 months ago
app	Added class name to bounding box.	6 months ago
gradle/wrapper	Added class name to bounding box.	6 months ago
jni-build	And so it is born !	a year ago
projectFilesBackup/.idea	And so it is born !	a year ago
.gitignore	And so it is born !	a year ago
LICENSE	And so it is born !	a year ago
NOTICE	And so it is born !	a year ago
README.md	Update README.md	2 months ago
build.gradle	Added class name to bounding box.	6 months ago
gradle.properties	And so it is born !	a year ago
gradlew	And so it is born !	a year ago
gradlew.bat	And so it is born !	a year ago
settings.gradle	And so it is born !	a year ago

 README.md

TensorFlow YOLO object detection on Android

[Source project](#)

android-yolo is the first implementation of YOLO for TensorFlow on an Android device. It is compatible with Android Studio and usable out of the box. It can detect the 20 classes of objects in the Pascal VOC dataset: aeroplane, bicycle, bird, boat, bottle, bus, car, cat, chair, cow, dining table, dog, horse, motorbike, person, potted plant, sheep, sofa, train and tv/monitor. The network only outputs one predicted bounding box at a time for now. The code can and will be extended in the future to output several predictions.

To use this demo first clone the repository. Download the TensorFlow YOLO model and put it in android-yolo/app/src/main /assets. Then open the project on Android Studio. Once the project is open you can run the project on your Android device using the Run 'app' command and selecting your device.

NEW: The **standalone APK** has been released and you can find it here. Just open your browser on your Android device and download the APK file. When the file has been downloaded it should begin installing on your device after you grant the required permissions.

GPUs are not currently supported by TensorFlow on Android. If you have a decent Android device you will have around two frames per second of processed images.

Here is a video showing a small demo of the app.

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Credits: App launch icon made by Freepik from Flaticon is licensed by Creative Commons BY 3.0.

Disclaimer: The app is hardcoded for 20 classes and for the tiny-yolo network final output layer. You can check the following code if you want to change this:

https://github.com/natanielruiz/android-yolo/blob/master/app/src/main/java/org/tensorflow/demo/TensorflowClassifier.java

The code describes the interpretation of the output.

The code for the network inference pass is written in C++ and the output is passed to Java. The output of the network is in the form of a String which is converted to a StringTokenizer and is then converted into an array of Floats in line 87 of TensorflowClassifier.java

You can work from there and read the papers to transform the new yolo model output into something that makes sense. (I did it only for one bounding box and also obtained the confidence of this bounding box). This part of the code is commented by me so you can understand what I did. Also read the paper here: https://arxiv.org/abs/1506.02640