**Part 2: On Device Machine Learning**

1. **Mobile App and Image training on device**

**Build and deploy a custom object detection model using tflite on android simulator**

Connected to android device

Graphical user interface, text, application

Description automatically generated

Detection results

A screenshot of a computer

Description automatically generated

[Detection result on the input image](https://developers.google.com/codelabs/tflite-object-detection-android?hl=en#5)

A picture containing text, dish, different

Description automatically generated

Custom Object Detection Model

A picture containing text, dish

Description automatically generated

1. **Mobile app and audio training on device:**

**Build a custom pre-trained Audio Classification model**

Chart, bubble chart

Description automatically generated with medium confidence



1. **Web app and image training on device:**

**TensorFlow.js Transfer Learning Image Classifier**

[Enable the webcam](https://codelabs.developers.google.com/tensorflowjs-transfer-learning-teachable-machine?hl=en#10)

Graphical user interface, application

Description automatically generated

Data Collection

*Graphical user interface, application

Description automatically generated*

Train and predict

A person holding a phone

Description automatically generated with low confidence

1. **Webapp and audio training on device:**

**TensorFlow.js - Audio recognition using transfer learning**

Testing prediction

Graphical user interface, text

Description automatically generated

Graphical user interface, text

Description automatically generated

Data Collection

Graphical user interface, text, application

Description automatically generated

Train

A screenshot of a computer

Description automatically generated

Testing

Graphical user interface, text, application

Description automatically generated

1. **Using out of box sdk to do ML ondevice:**

**Use ML Kit to perform**

Running starter app

Text, letter

Description automatically generated

On-Device Text recognition:

Text, letter

Description automatically generated

On-Device Face Contour Detection

A person wearing a military uniform

Description automatically generated with low confidence