

# EE-559: Practical Session 13

this doc : <https://tiny.cc/ajrs6y>

[version of: May 19, 2019]

## Introduction

The objective of this practical session is to make you familiar with the Colab environment and to implement some simple models using the Python TensorFlow 2.0 API and the Keras API. The exercise is a shortened version of the full-day workshop "TensorFlow Basics" at AMLD. You can find more in-depth material (including data transformation, recurrent networks, and Google Cloud) here :

<https://github.com/tensorflow/workshops/tree/master/extras/amld>

The exercises of this practical session are contained in a single Colab: <https://tinyurl.com/yynym2cc> - Please click on that link now and then "**Save a Copy in Drive...**" (in the "File" menu).

## 1. Colab Mechanics

This section walks you through some of the features in Colab and should get you up to speed for the other exercises.

Try to spend ~10 minutes on this section.

## 2. Predicting QuickDraw

The main part of the Colab. Quick overview of TensorFlow API & Keras API with a simple example. The code is almost complete (apart for some parts marked with "YOUR ACTION REQUIRED"). Walk through, read the comments, and try changing some parameters etc. to get a feeling of the API. Also read official documentation (hit <TAB> after opening parens for a function call, or go to [tensorflow.org](https://tensorflow.org)).

Try to spend ~30 minutes on this section.

### 3. Sock Competition

Having learnt the basic Keras API in the last section, this section is all about stacking layers and improving performance.

Try to spend >30 minutes on this section.

If you think you have a good model, send an Email with the title "SOCK COMPETITION" and the final accuracy on the evaluation dataset, together with a link of the Colab (don't forget SHARING it) to:

[andstein@google.com](mailto:andstein@google.com)

The two best achieving models will get a fantastic prize !

### 4. Bonus: TensorFlow.js

Introduction to TensorFlow.js API, converting a model from the previous sections, and spinning up a small web server so you can make inference from any browser. Try also to run the model on your cell phone with flight mode enabled...