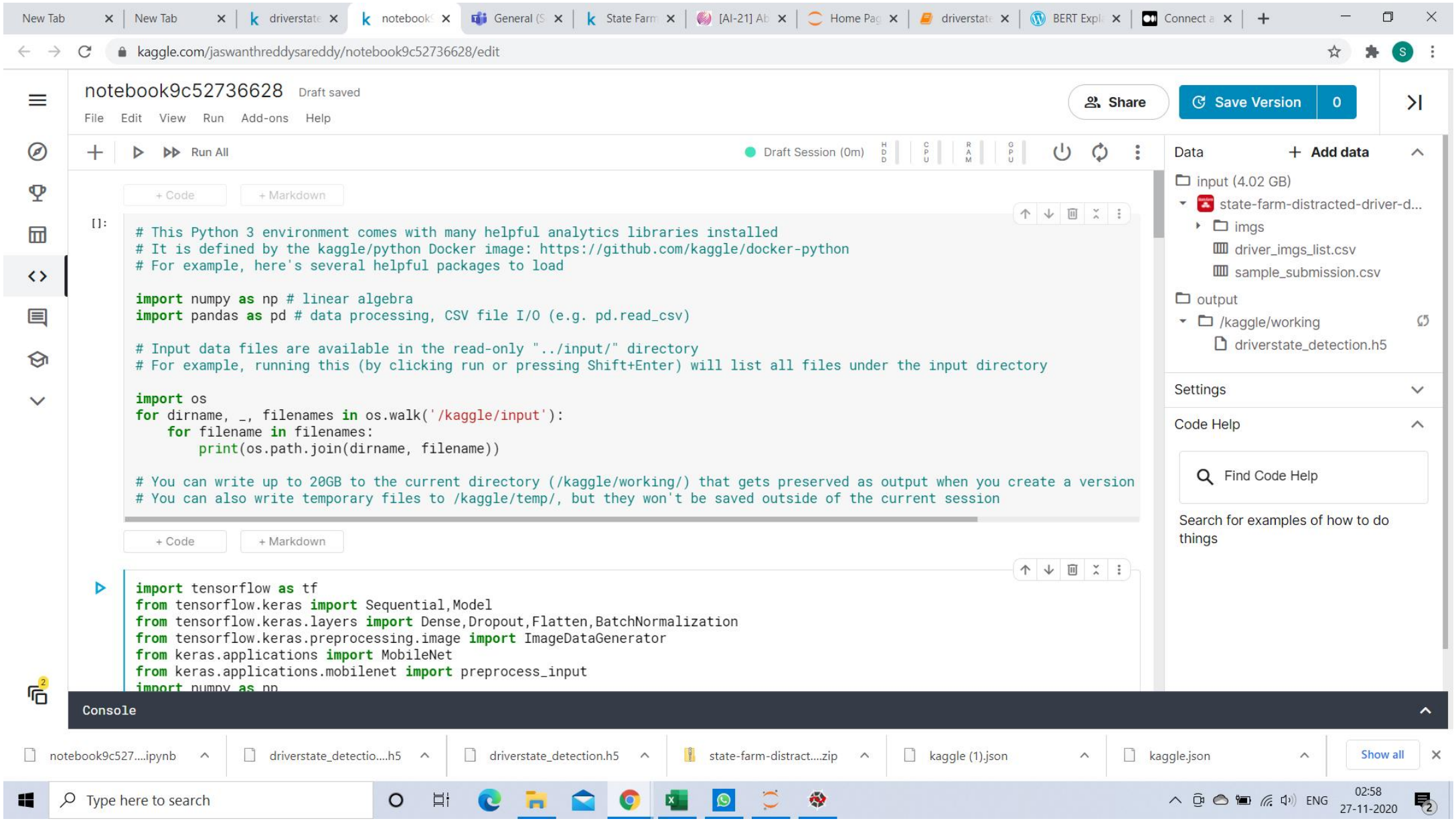
kaggle.com/jaswanthreddysareddy/notebook9c52736628/edit
notebook9c52736628
Draft saved
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Run All
Draft Session (0m)
+ Code + Markdown
[]:
# This Python 3 environment comes with many helpful analytics libraries installed
# It is defined by the kaggle/python Docker image: https://github.com/kaggle/docker-python
# For example, here's several helpful packages to load
import numpy as np # linear algebra
import pandas as pd # data processing, CSV file I/O (e.g. pd.read_csv)
# Input data files are available in the read-only "../input/" directory
# For example, running this (by clicking run or pressing Shift+Enter) will list all files under the input directory
import os
for dirname, _, filenames in os.walk('/kaggle/input'):
for filename in filenames:
print(os.path.join(dirname, filename))
# You can write up to 20GB to the current directory (/kaggle/working/) that gets preserved as output when you create a version
# You can also write temporary files to /kaggle/temp/, but they won't be saved outside of the current session
+ Code + Markdown
import tensorflow as tf
from tensorflow.keras import Sequential,Model
from tensorflow.keras.layers import Dense,Dropout,Flatten,BatchNormalization
from tensorflow.keras.preprocessing.image import ImageDataGenerator
from keras.applications import MobileNet
from keras.applications.mobilenet import preprocess_input
import numpy as np
Data
Add data
input (4.02 GB)
state-farm-distracted-driver-d...
imgs
driver_imgs_list.csv
sample_submission.csv
output
/kaggle/working
driverstate_detection.h5
Settings
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Console
notebook9c527....ipynb
driverstate_detectio....h5
driverstate_detection.h5
state-farm-distract....zip
kaggle (1).json
kaggle.json
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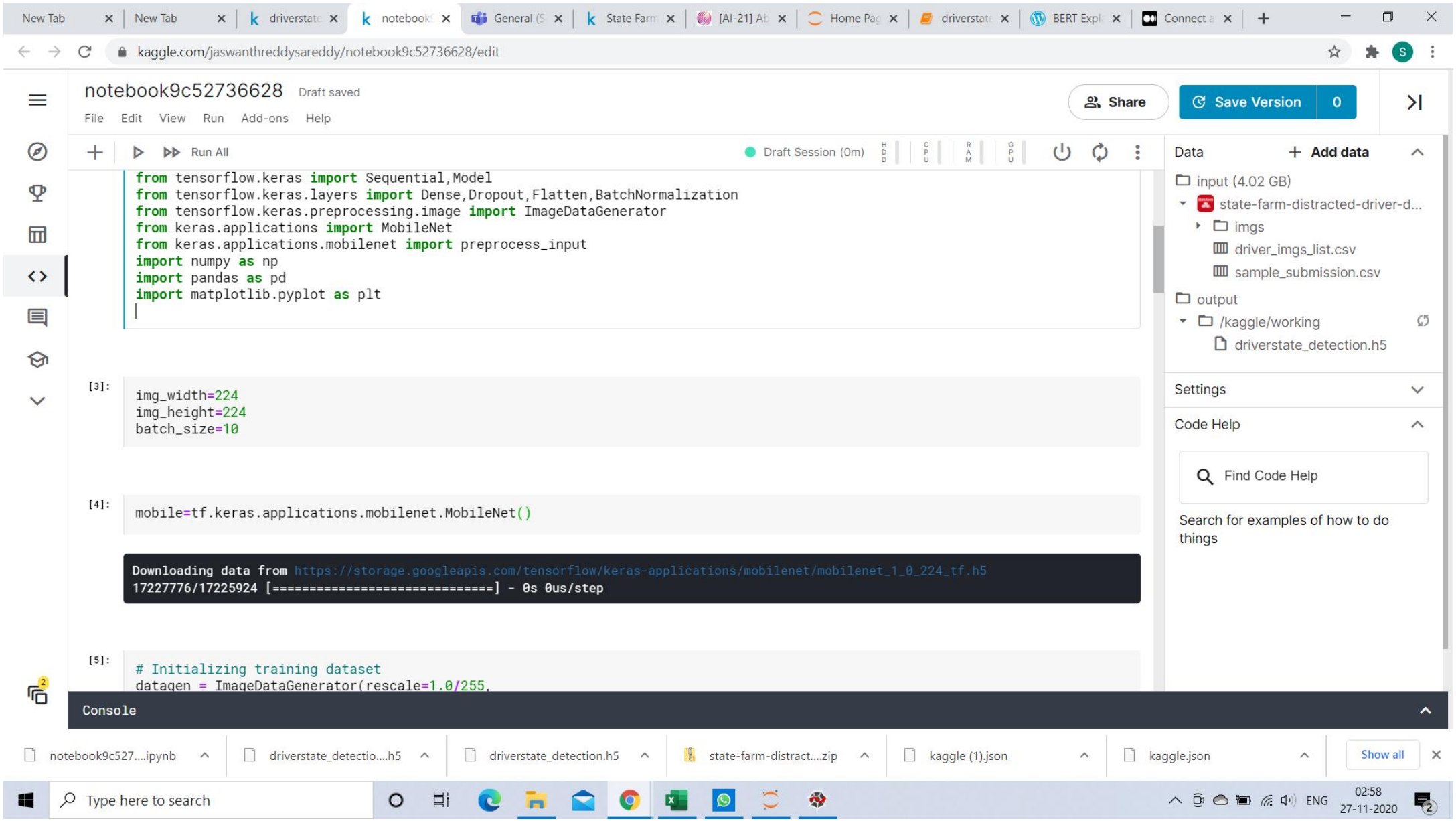
kaggle.com/jaswanthreddysareddy/notebook9c52736628/edit
notebook9c52736628
Draft saved
File Edit View Run Add-ons Help
Share
Save Version 0
Run All
Draft Session (0m)
from tensorflow.keras import Sequential,Model
from tensorflow.keras.layers import Dense,Dropout,Flatten,BatchNormalization
from tensorflow.keras.preprocessing.image import ImageDataGenerator
from keras.applications import MobileNet
from keras.applications.mobilenet import preprocess_input
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
[3]:
img_width=224
img_height=224
batch_size=10
[4]:
mobile=tf.keras.applications.mobilenet.MobileNet()
Downloading data from https://storage.googleapis.com/tensorflow/keras-applications/mobilenet/mobilenet_1_0_224_tf.h5
17227776/17225924 [==============================] - 0s 0us/step
[5]:
# Initializing training dataset
datagen = ImageDataGenerator(rescale=1.0/255,
Data
Add data
input (4.02 GB)
state-farm-distracted-driver-d...
imgs
driver_imgs_list.csv
sample_submission.csv
output
/kaggle/working
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[5]:
```
# Initializing training dataset
datagen = ImageDataGenerator(rescale=1.0/255,
                             zoom_range=0.2,
                             horizontal_flip=True,
                             validation_split=0.3)
train = datagen.flow_from_directory(directory="../input/state-farm-distracted-driver-detection/imgs/train",
                                    target_size = (img_width, img_height),
                                    batch_size=batch_size,subset='training')
validation=datagen.flow_from_directory(directory="../input/state-farm-distracted-driver-detection/imgs/train",
                                       target_size=(img_width,img_height),
                                       batch_size=batch_size,subset='validation')
```

```
Found 15702 images belonging to 10 classes.
Found 6722 images belonging to 10 classes.
```

[6]:
```
# Freeze layer
for layers in mobile.layers:
  layers.trainable=False
```

[7]:
```
# Training the model
model=Sequential()
model.add(mobile)
model.add(Flatten())
```

Data + Add data

- input (4.02 GB)
  - state-farm-distracted-driver-d...
    - imgs
    - driver_imgs_list.csv
    - sample_submission.csv
- output
  - /kaggle/working
    - driverstate_detection.h5

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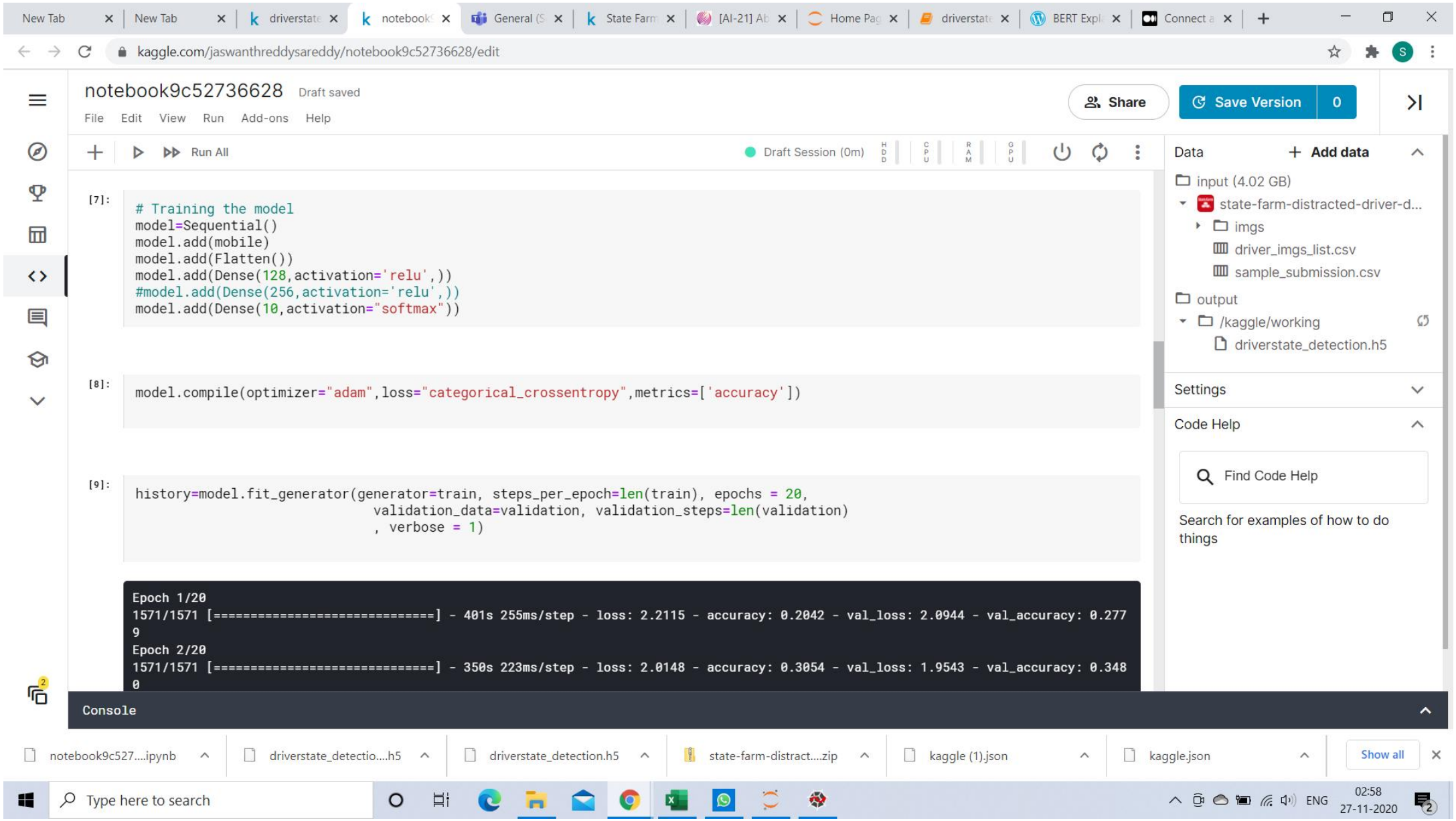
New Tab
New Tab
driverstate
notebook9c52736628
General (S
State Farm
[AI-21] Ab
Home Pag
driverstate
BERT Expl
Connect a
kaggle.com/jaswanthreddysareddy/notebook9c52736628/edit
notebook9c52736628
Draft saved
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Run All
Draft Session (0m)
[7]:
# Training the model
model=Sequential()
model.add(mobile)
model.add(Flatten())
model.add(Dense(128,activation='relu',))
#model.add(Dense(256,activation='relu',))
model.add(Dense(10,activation="softmax"))
[8]:
model.compile(optimizer="adam",loss="categorical_crossentropy",metrics=['accuracy'])
[9]:
history=model.fit_generator(generator=train, steps_per_epoch=len(train), epochs = 20,
validation_data=validation, validation_steps=len(validation)
, verbose = 1)
Epoch 1/20
1571/1571 [==============================] - 401s 255ms/step - loss: 2.2115 - accuracy: 0.2042 - val_loss: 2.0944 - val_accuracy: 0.277
9
Epoch 2/20
1571/1571 [==============================] - 350s 223ms/step - loss: 2.0148 - accuracy: 0.3054 - val_loss: 1.9543 - val_accuracy: 0.348
0
Data
Add data
input (4.02 GB)
state-farm-distracted-driver-d...
imgs
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notebook9c52736628 Draft saved

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Run All | Draft Session (0m)

```
2
Epoch 19/20
1571/1571 [==============================] - 342s 218ms/step - loss: 1.3198 - accuracy: 0.5689 - val_loss: 1.3555 - val_accuracy: 0.553
1
Epoch 20/20
1571/1571 [==============================] - 345s 220ms/step - loss: 1.3015 - accuracy: 0.5776 - val_loss: 1.3124 - val_accuracy: 0.574
7
```

[10]:
```
from tensorflow.keras.preprocessing import image
```

[20]:
```
classes=['Safe driving','Texting-right','Talking on phone-right','Texting-left','Talking on phone-left','Operating the radio',
        'Drinking','Reaching behind','Hair and makeup','Talking to passenger']
```

[42]:
```
img=image.load_img('../input/state-farm-distracted-driver-detection/imgs/test/img_10001.jpg',target_size=(img_width,img_height)
print(img.size)
plt.imshow(img)
img=image.img_to_array(img)
img=img/255.0
img = np.expand_dims(img, axis=0)
```

Data + Add data

input (4.02 GB)
- state-farm-distracted-driver-d...
  - imgs
  - driver_imgs_list.csv
  - sample_submission.csv

output
- /kaggle/working
  - driverstate_detection.h5

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notebook9c527....ipynb | driverstate_detectio....h5 | driverstate_detection.h5 | state-farm-distract....zip | kaggle (1).json | kaggle.json | Show all

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notebook9c52736628 Draft saved

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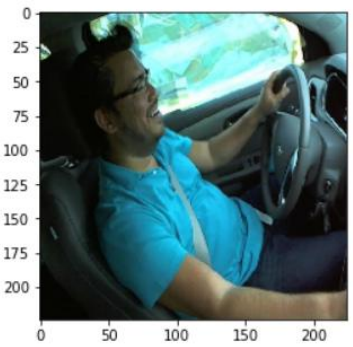
```
(224, 224)
```



[36]:

```
print(np.argmax(model.predict(img)))
print(classes[np.argmax(model.predict(img))])
```

```
5
Operating the radio
```

Data | + Add data

input (4.02 GB)
state-farm-distracted-driver-d...
imgs
driver_imgs_list.csv
sample_submission.csv
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/kaggle/working
driverstate_detection.h5

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notebook9c52736628 Draft saved

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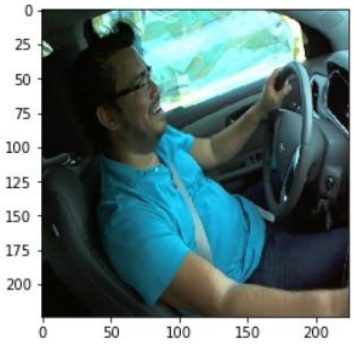
Run All | Draft Session (0m) | HDD | CPU | RAM | GPU

```
(224, 224)
```



+ Code + Markdown

[36]:

```
print(np.argmax(model.predict(img)))
print(classes[np.argmax(model.predict(img))])
```

```
5
Operating the radio
```

Console

Data + Add data

- input (4.02 GB)
  - state-farm-distracted-driver-d...
    - imgs
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