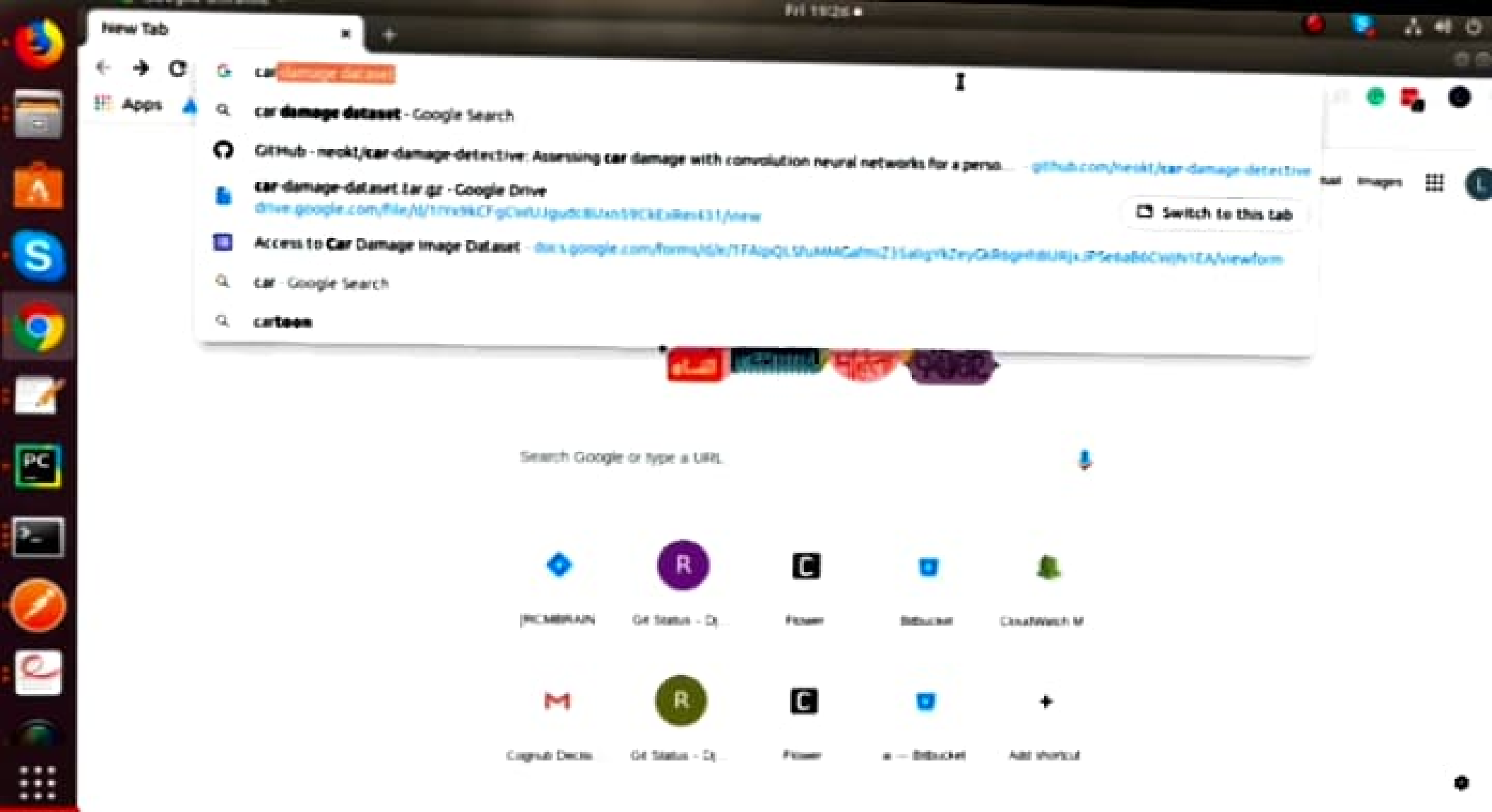
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https://github.com/neokistic/car-damage-detective

Assessing car damage with convolution neural networks for a personal auto claims ... for classification and supplemented with the Stanford Car Image Dataset

Building a Mask R-CNN Model for Detecting Car Damage (Python ...

https://www.analyticsvidhya.com/.../building-mask-r-cnn-model-detecting-damage-ca...

Jul 14, 2018 - How to build a Mask R-CNN Model for Car Damage Detection ... Dataset: def load_custom(self, dataset_dir, subset): ""Load a subset of the

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indue: there is no publicly available dataset for car damage classification. Therefore, we created our

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GitHub - neokt/car-dam...

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Assessing car damage with convolution neural networks for a personal auto claims expedition use case

5 commits 1 branch 0 releases 1 contributor

Branch: master New pull request Find File Clone or download

neokt Adding attribution for Google Images scraper Latest commit 6a3c9b1 on 11 Dec 2017

app	First commit	2 years ago
01-first_gate-car_or_not.ipynb	First commit	2 years ago
02-second_gate-damaged_or_whole.ipynb	First commit	2 years ago
03-classifying_damage location.ipynb	First commit	2 years ago
04-classifying_damage_severity.ipynb	First commit	2 years ago
05-production_and_app_development.ipynb	First commit	2 years ago

Assessing Car Damage with Convolutional Neural Networks

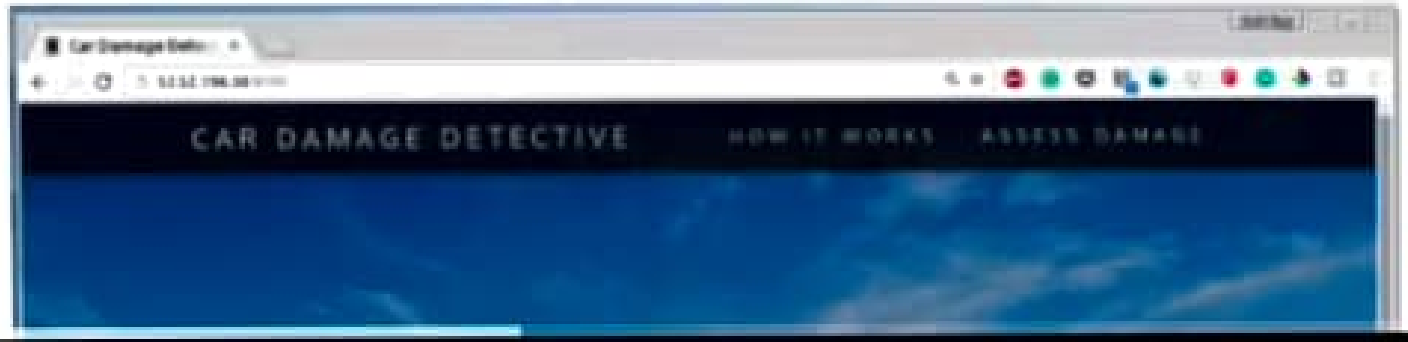
Created a proof of concept to expedite the personal auto claims process with computer vision and deep learning. Identified damage location and severity to accuracies of 79% and 71% respectively, comparable to human performance. Trained a pipeline of convolutional neural networks using transfer learning on VGG16 with Keras and Theano to classify damage. Deployed consumer-facing web app with Flask and Bootstrap for real-time car damage evaluations. Data scraped from Google Images using Selenium, hand-labeled for classification and supplemented with the Stanford Car Image Dataset.

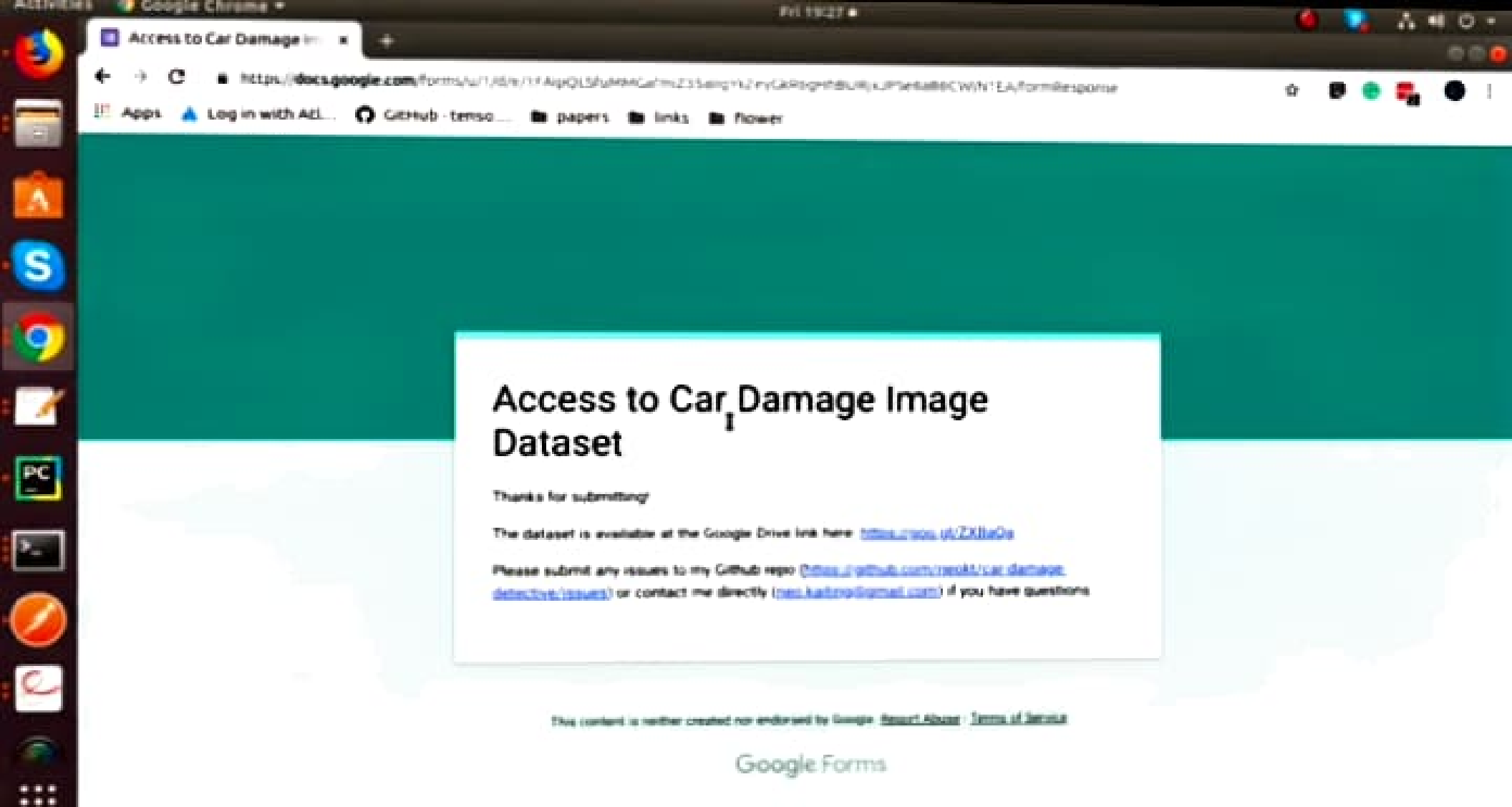
- Blog post - Coming soon!
- Web app - Car Damage Detective - Currently unavailable
- Presentation

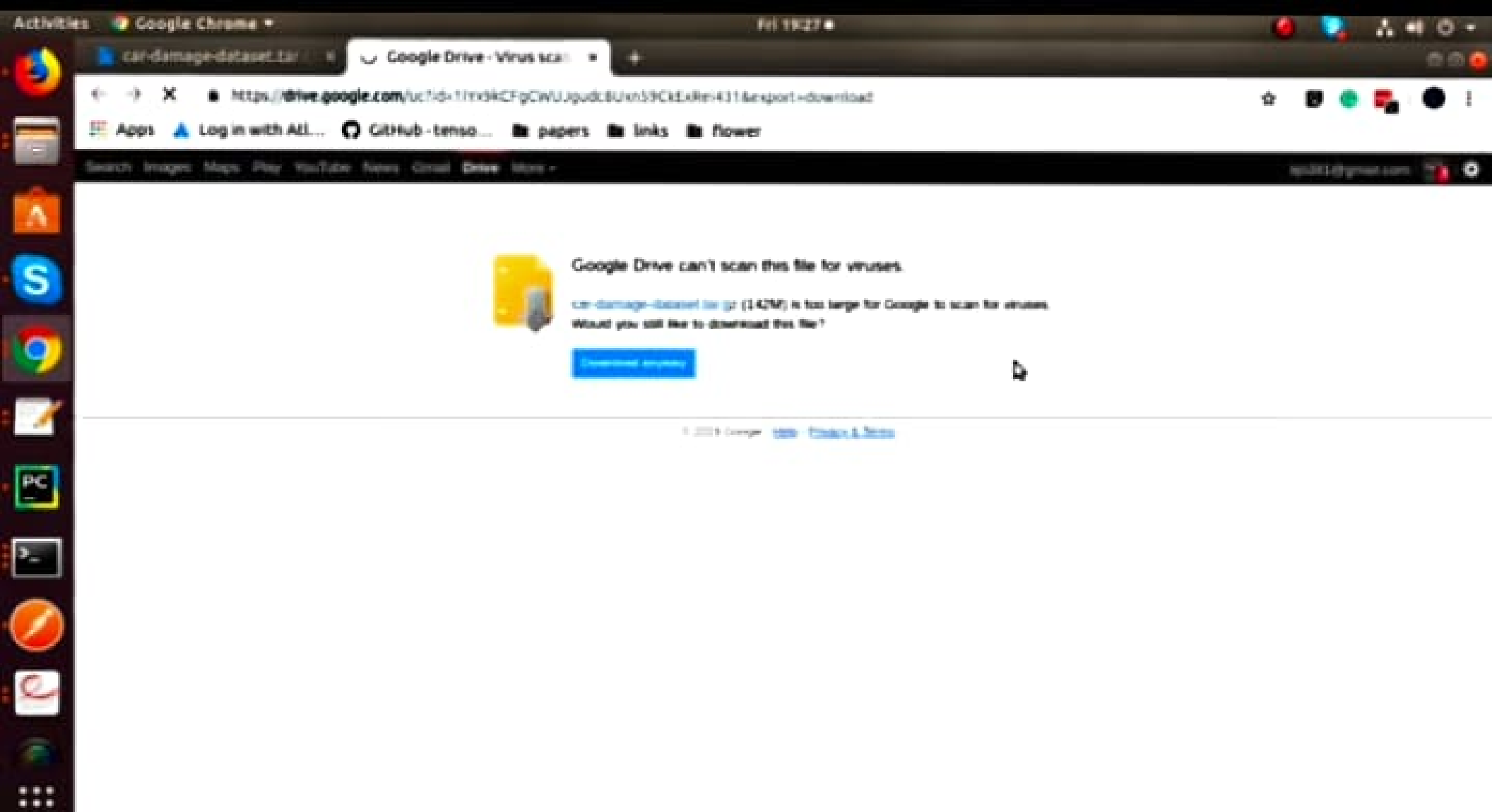
Access to the image dataset is made available under the Open Data Commons Attribution License: https://opendatacommons.org/licenses/by/1.0/

Credit for the Google Images scraper goes to Ian London's fantastic General Image Classifier project.

Demonstration




Access to Car Damage Image Dataset
Thanks for submitting!
The dataset is available at the Google Drive link here:
Please submit any issues to my Github repo
or contact me directly
if you have questions
Google Forms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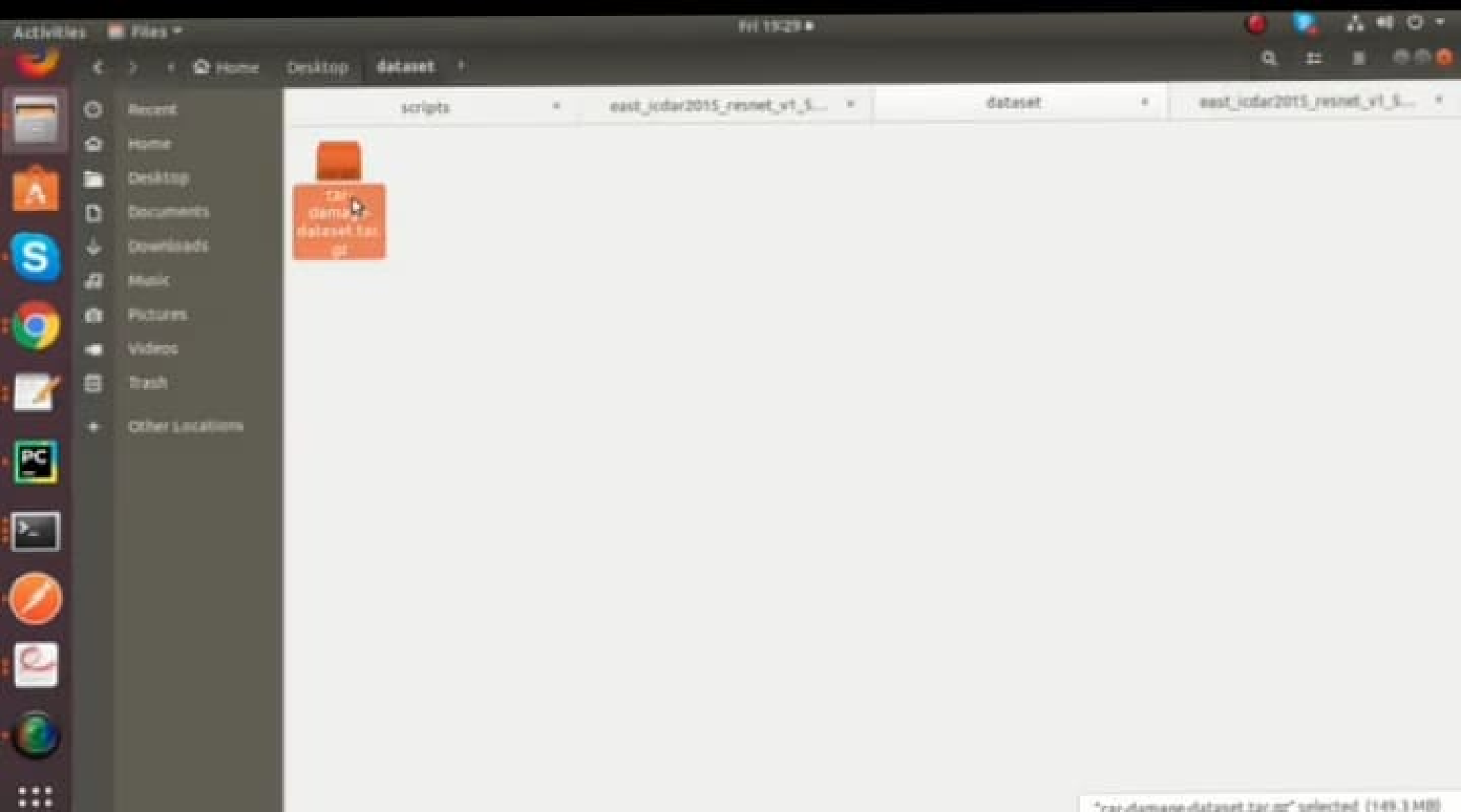
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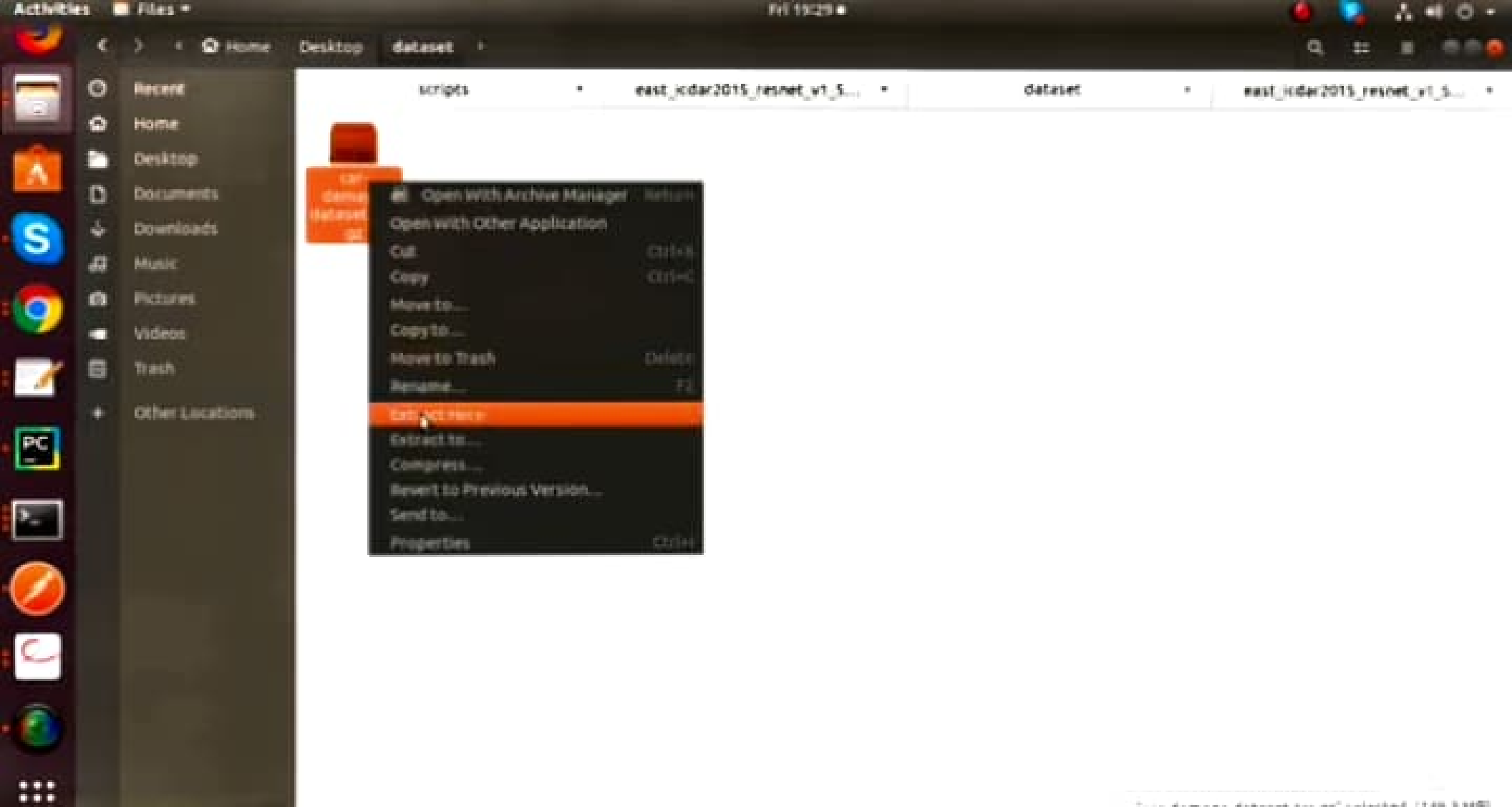
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Open With Archive Manager
Open With Other Application
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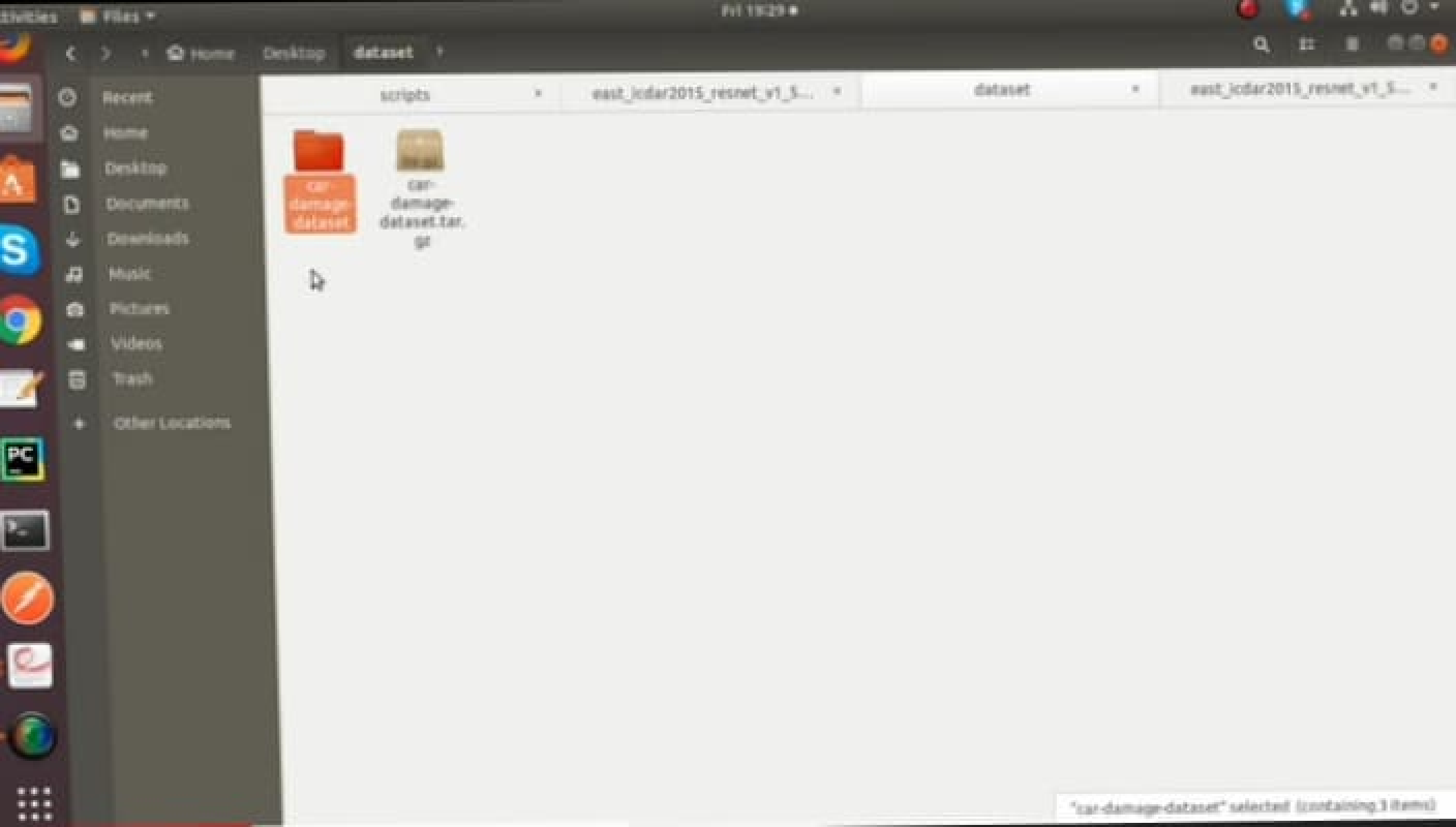
Compress...
Revert to Previous Version...
Send to...
Properties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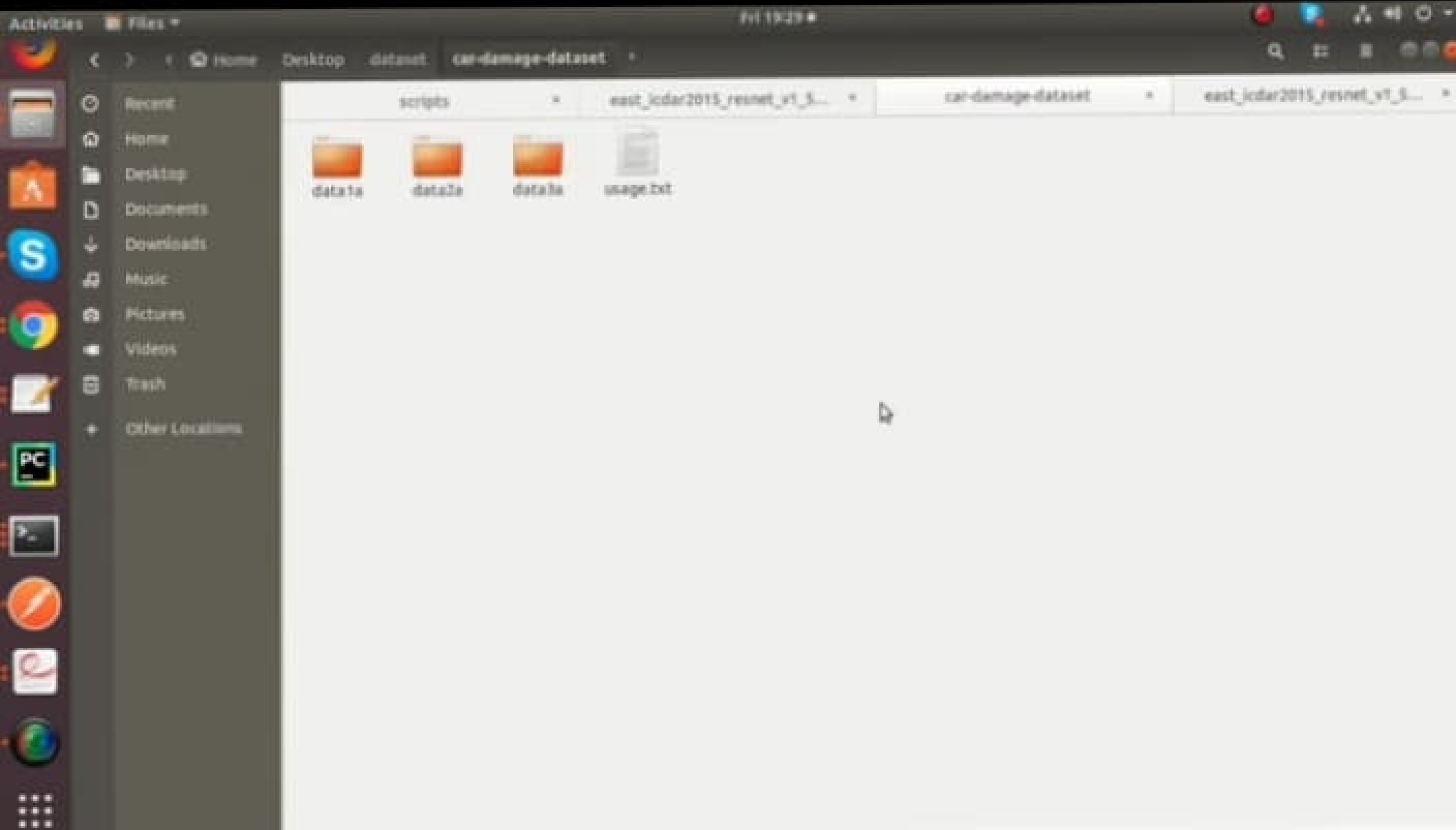
"car-damage-dataset" selected (containing 3 items)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data2a
data3a
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models_1 __pycache__ venv model_train_new.csv prediction_test.py preprocessing.py req.txt transfer_learning.py vgg_16_model.py vgg_16_model.pyc vgg_model_training.py

```
lipo@lipo-B250M-D3H: ~/Desktop/dataset/car-damage-dataset/vgg_net_classification
File Edit View Search Terminal Help
nputs=Tensor("im...., outputs=Tensor("pr...)
  my_model = Model(inputs=inputs, outputs=x)

Layer (type)                 Output Shape              Param #
=================================================================
image_input (InputLayer)     (None, 3, 256, 256)       0
_________________________________________________________________
vgg16 (Model)                multiple                  14714688
_________________________________________________________________
flatten (Flatten)            (None, 32768)             0
_________________________________________________________________
fc2 (Dense)                  (None, 4096)              134221824
_________________________________________________________________
fc1 (Dense)                  (None, 2048)              8396656
_________________________________________________________________
predictions (Dense)          (None, 3)                 6147
=================================================================
Total params: 157,333,315
Trainable params: 142,618,627
Non-trainable params: 14,714,688
_________________________________________________________________
Train on 979 samples, validate on 171 samples
Epoch 1/1000
```

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ocr_engine_service vgg_net_classification bin

models_1 __pycache__ venv model train_ne csv

lip@lip-B250M-D3H: ~/Desktop/dataset/car-damage-dataset/vgg_net_classification

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2019-03-12 15:34:23.251266: W tensorflow/core/framework/allocator.cc:101] Alloca
tion of 536870912 exceeds 10% of system memory.
2019-03-12 15:34:23.509710: W tensorflow/core/framework/allocator.cc:101] Alloca
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2019-03-12 15:34:25.091779: W tensorflow/core/framework/allocator.cc:101] Alloca
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2019-03-12 15:34:33.910142: W tensorflow/core/framework/allocator.cc:101] Alloca
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2019-03-12 15:34:34.259590: W tensorflow/core/framework/allocator.cc:101] Alloca
tion of 536870912 exceeds 10% of system memory.
  8/979 [..............................] - ETA: 23:27 - loss: 8.2222 - acc: 0.37
502019-03-12 15:34:54.793141: W tensorflow/core/framework/allocator.cc:101] Allo
cation of 536870912 exceeds 10% of system memory.
```

Activities jetbrains-pycharm-ce Tue 15:35

vgg_net_classification [~/Downloads/car-damage-dataset/vgg_net_classification] - .../vgg_model_training.py [vgg_net_classification] - PyCharm

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vgg_net_classification vgg_model_training.py Add Configuration... Git:

Project

- vgg_net_classification ~/Downloads/car
  - models_1
  - venv
    - bin
    - include
    - lib
    - share
  - model_train_new.csv
  - prediction_test.py
  - preprocessing.py
  - req.txt
  - transfer_learning.py
  - vgg_16_model.py
  - vgg_model_training.py
- External Libraries
- Scratches and Consoles

vgg_model_training.py preprocessing.py prediction_test.py transfer_learning.py

```
from sklearn.utils import shuffle

import numpy as np
from preprocessing import preprocessing_and_labelling
from vgg_16_model import VGG16_base_model
from transfer_learning import vgg_model16_pretrained
import os
nb_epoch = 10
model_save_pd='/home/lira/Desktop/dataset/car-damage-dataset/vgg_net_classification/models_1/'
if not os.path.exists(model_save_pd):
    os.mkdir(model_save_pd)
# cwd=os.getcwd()
severity_folder='/home/lira/Desktop/dataset/car-damage-dataset/totale/training'
severity_folder_val='/home/lira/Desktop/dataset/car-damage-dataset/totale/validation'

train_x,train_y=preprocessing_and_labelling(severity_folder)
val_x,val_y=preprocessing_and_labelling(severity_folder_val)
train_y=np.to_categorical(train_y)
val_y=np.to_categorical(val_y)
train_x,train_y = shuffle(train_x,train_y, random_state=42)
val_x,val_y = shuffle(val_x,val_y, random_state=42)
# print(val_y)
# print(processed_data_val[:10])
print(train_x.shape)
model=vgg_model16_pretrained()
# train_x,train_y=processed_data_train[:100],processed_data_train[:,1]
# val_x,val_y=processed_data_val[:100],processed_data_val[:,1]
# print('train vals',train_y)
model.compile(optimizer='adam', loss='categorical_crossentropy', metrics=['accuracy'])
# # print(train_x[0],train_y[1])
model.fit(train_x, train_y,
          epochs=nb_epoch, batch_size=20,verbose=1,
          validation_data=(val_x, val_y),callbacks=callbacks_list)


from keras import callbacks
```

TODO Version Control Terminal Python Console Event Log