DELF installation

Installation script

We now have a script to do the entire installation in one shot. Navigate to the directory `models/research/delf/delf/python/training` , then run:

```
# From models/research/delf/delf/python/training
bash install_delf.sh
```

If this works, you are done! If not, see below for detailed instructions for installing this codebase and its dependencies.

Please note that this installation script only works on 64 bits Linux architectures due to the `protoc` binary that is automatically downloaded. If you wish to install the DELF library on other architectures please update the `install_delf.sh` script by referencing the desired `protoc` [binary release](#).

In more detail: the `install_delf.sh` script installs both the DELF library and its dependencies in the following sequence:

- Install TensorFlow 2.2 and TensorFlow 2.2 for GPU.
- Install the [TF-Slim](#) library from source.
- Download [protoc](#) and compile the DELF Protocol Buffers.
- Install the matplotlib, numpy, scikit-image, scipy and python3-tk Python libraries.
- Install the [TensorFlow Object Detection API](#) from the cloned TensorFlow Model Garden repository.
- Install the DELF package.

Tensorflow

tensorflow `2.2` python `3.6`

For detailed steps to install Tensorflow, follow the [Tensorflow installation instructions](#). A typical user can install Tensorflow using one of the following commands:

```
# For CPU:
pip3 install 'tensorflow>=2.2.0'
# For GPU:
pip3 install 'tensorflow-gpu>=2.2.0'
```

TF-Slim

Note: currently, we need to install the latest version from source, to avoid using previous versions which relied on tf.contrib (which is now deprecated).

```
git clone git@github.com:google-research/tf-slim.git
cd tf-slim
pip3 install .
```

Note that these commands assume you are cloning using SSH. If you are using HTTPS instead, use `git clone https://github.com/google-research/tf-slim.git` instead. See [this link](#) for more information.

Protobuf

The DELF library uses protobuf (the python version) to configure feature extraction and its format. You will need the `protoc` compiler, version >= 3.3. The easiest way to get it is to download directly. For Linux, this can be done as (see here for other platforms):

```
wget https://github.com/google/protobuf/releases/download/v3.3.0/protoc-3.3.0-linux-x86_64.zip
unzip protoc-3.3.0-linux-x86_64.zip
PATH_TO_PROTOC=`pwd`
```

Python dependencies

Install python library dependencies:

```
pip3 install matplotlib numpy scikit-image scipy
sudo apt-get install python3-tk
```

`tensorflow/models`

Now, clone `tensorflow/models`, and install required libraries: (note that the `object_detection` library requires you to add `tensorflow/models/research/` to your `PYTHONPATH`, as instructed here)

```
git clone git@github.com:tensorflow/models.git

# Setup the object_detection module by editing PYTHONPATH.
cd ..
# From tensorflow/models/research/
export PYTHONPATH=$PYTHONPATH:`pwd`
```

Note that these commands assume you are cloning using SSH. If you are using HTTPS instead, use `git clone https://github.com/tensorflow/models.git` instead. See this link for more information.

Then, compile DELF's protobufs. Use `PATH_TO_PROTOC` as the directory where you downloaded the `protoc` compiler.

```
# From tensorflow/models/research/delf/
${PATH_TO_PROTOC?}/bin/protoc delf/protos/*.proto --python_out=.
```

Finally, install the DELF package. This may also install some other dependencies under the hood.

```
# From tensorflow/models/research/delf/
pip3 install -e . # Install "delf" package.
```

At this point, running

```
python3 -c 'import delf'
```

should just return without complaints. This indicates that the DELF package is loaded successfully.

Troubleshooting

`pip3 install`

Issues might be observed if using `pip3 install` with `-e` option (editable mode). You may try out to simply remove the `-e` from the commands above. Also, depending on your machine setup, you might need to run the `sudo pip3 install` command, that is with a `sudo` at the beginning.

Cloning github repositories

The default commands above assume you are cloning using SSH. If you are using HTTPS instead, use for example `git clone https://github.com/tensorflow/models.git` instead of `git clone git@github.com:tensorflow/models.git`. See [this link](#) for more information.