

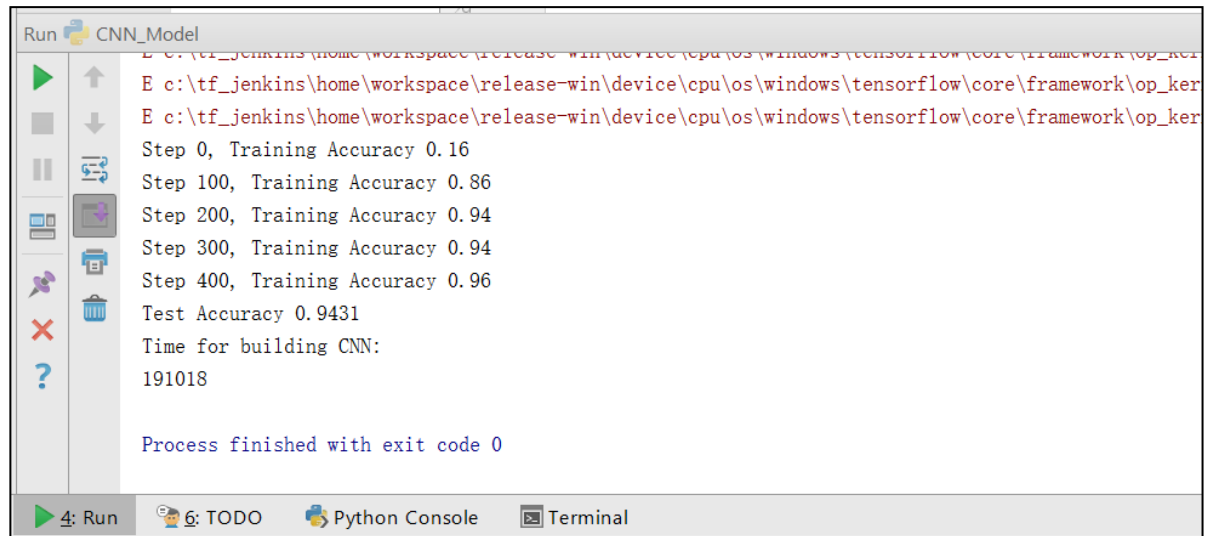
Tutorial 9 Assignment (Due 03/24/17 by 11:59 PM)*Dayu Wang (45)***1. TensorFlow Programming****1.1. Description of Dataset (see [Figure 1](#))**

The dataset (other than the MNIST) I used in this program is the SVHN (Street View House Number) data. It is a real-world image dataset for developing machine learning and object recognition algorithms with minimal requirement on data preprocessing and formatting. It can be seen as similar in flavor to MNIST, but incorporates an order of magnitude more labeled data (over 600,000 digit images) and comes from a significantly harder, unsolved, real world problem. SVHN is obtained from house numbers in Google Street View images.



Figure 1. The uncropped (left) and cropped (right) example of the SVHN dataset.

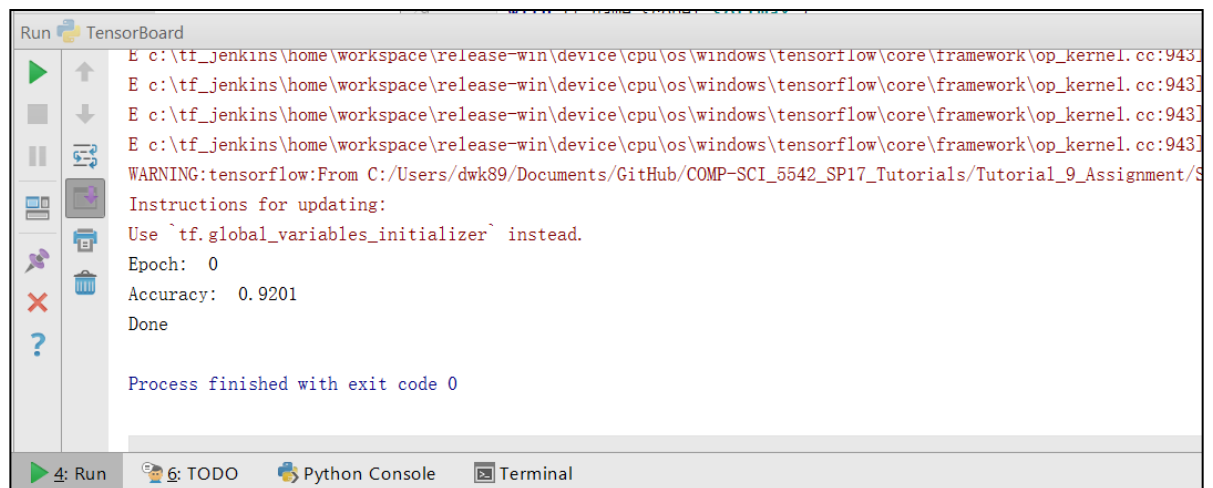
1.2. Screenshots of the Results (see Figure 2, Figure 3, and Figure 4)



```
Run CNN_Model
E c:\tf_jenkins\home\workspace\release-win\device\cpu\os\windows\tensorflow\core\framework\op_ker
E c:\tf_jenkins\home\workspace\release-win\device\cpu\os\windows\tensorflow\core\framework\op_ker
E c:\tf_jenkins\home\workspace\release-win\device\cpu\os\windows\tensorflow\core\framework\op_ker
Step 0, Training Accuracy 0.16
Step 100, Training Accuracy 0.86
Step 200, Training Accuracy 0.94
Step 300, Training Accuracy 0.94
Step 400, Training Accuracy 0.96
Test Accuracy 0.9431
Time for building CNN:
191018

Process finished with exit code 0
```

Figure 2. CNN mode, accuracy and building time.



```
Run TensorBoard
E c:\tf_jenkins\home\workspace\release-win\device\cpu\os\windows\tensorflow\core\framework\op_kerl.cc:943]
E c:\tf_jenkins\home\workspace\release-win\device\cpu\os\windows\tensorflow\core\framework\op_kerl.cc:943]
E c:\tf_jenkins\home\workspace\release-win\device\cpu\os\windows\tensorflow\core\framework\op_kerl.cc:943]
E c:\tf_jenkins\home\workspace\release-win\device\cpu\os\windows\tensorflow\core\framework\op_kerl.cc:943]
WARNING:tensorflow:From C:/Users/dwk89/Documents/GitHub/COMP-SCI_5542_SP17_Tutorials/Tutorial_9_Assignment/S
Instructions for updating:
Use `tf.global_variables_initializer` instead.
Epoch: 0
Accuracy: 0.9201
Done

Process finished with exit code 0
```

Figure 3. TensorBoard, accuracy.

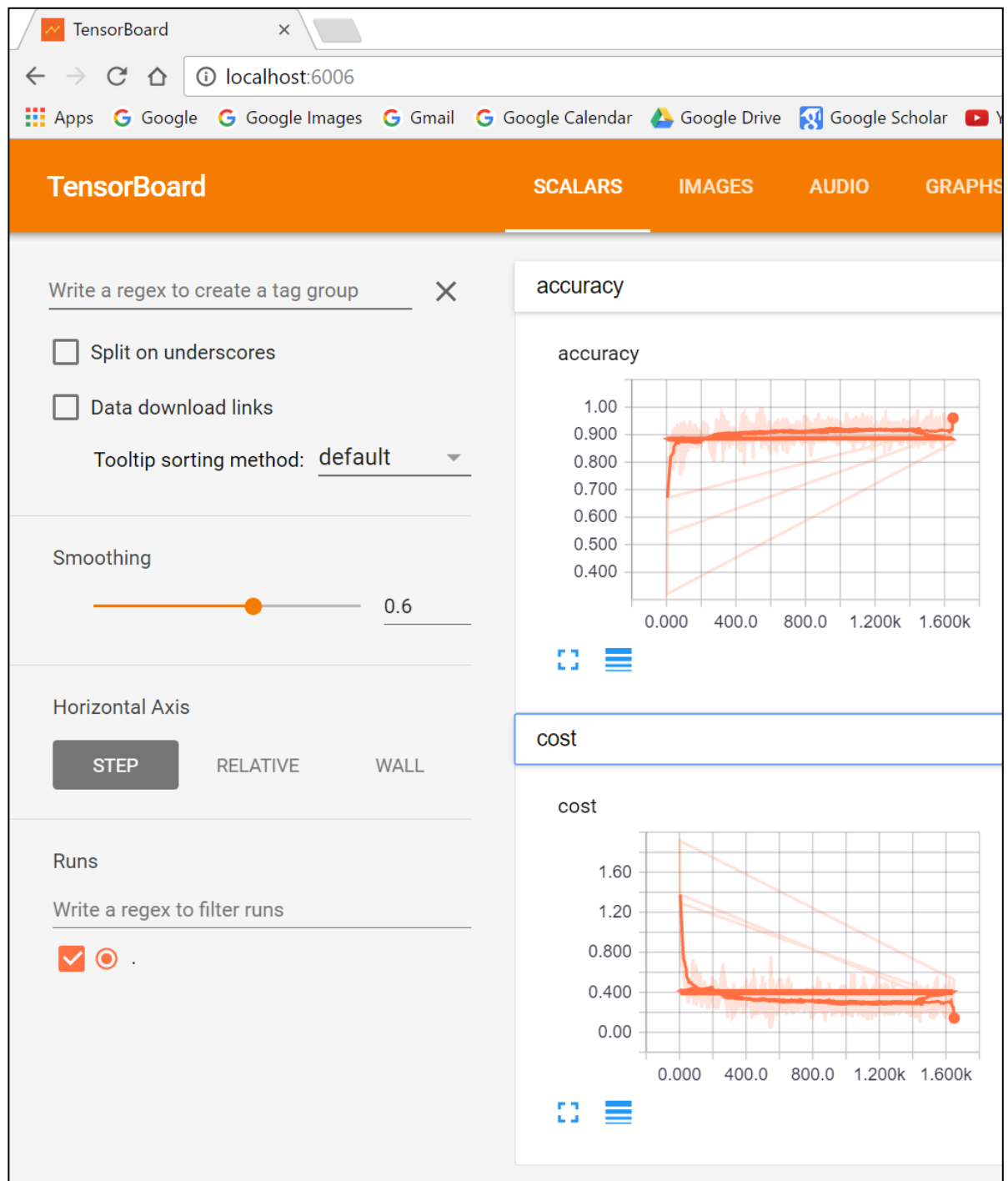
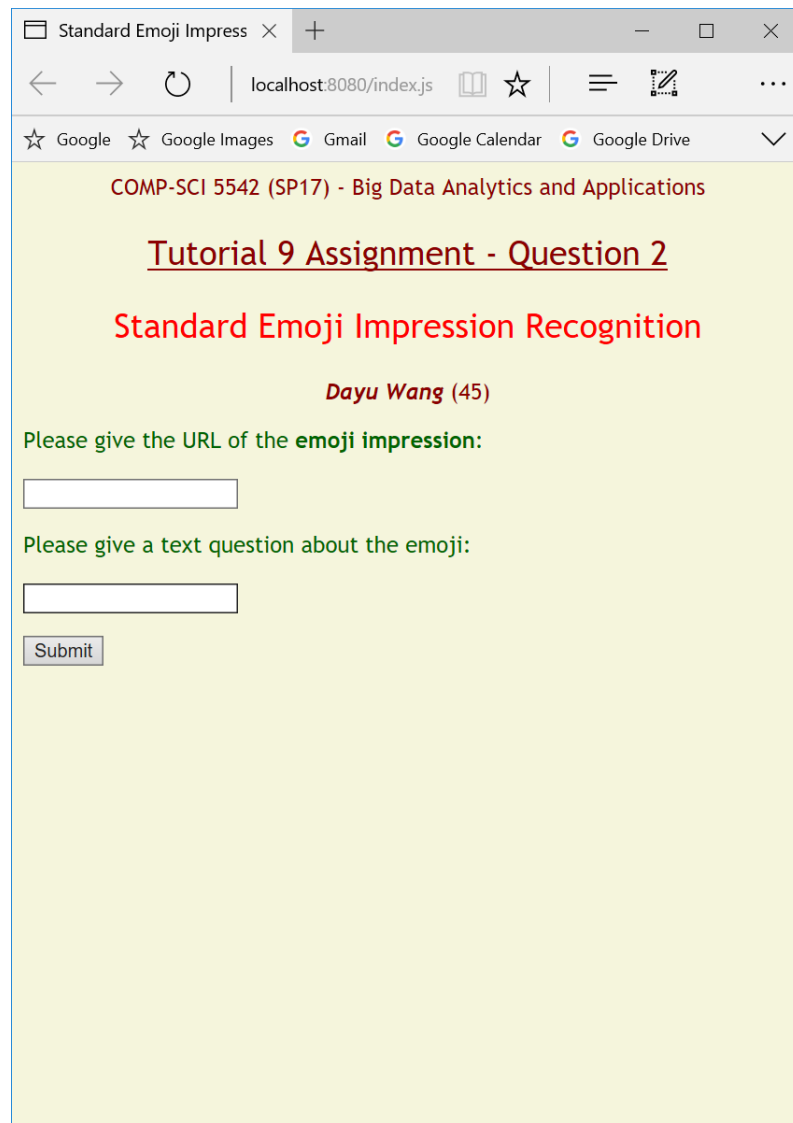


Figure 4. TensorBoard, screenshot of `localhost:6006`.

2. Web Application of Image Recognition

Please see the screenshots in [Figure 5](#), [Figure 6](#), and [Figure 7](#). The input URL of emoji impression is <http://imggh.us/StdEmoji06.jpg>.



Standard Emoji Impress × +

localhost:8080/index.js

Google Google Images Gmail Google Calendar Google Drive

COMP-SCI 5542 (SP17) - Big Data Analytics and Applications

Tutorial 9 Assignment - Question 2

Standard Emoji Impression Recognition

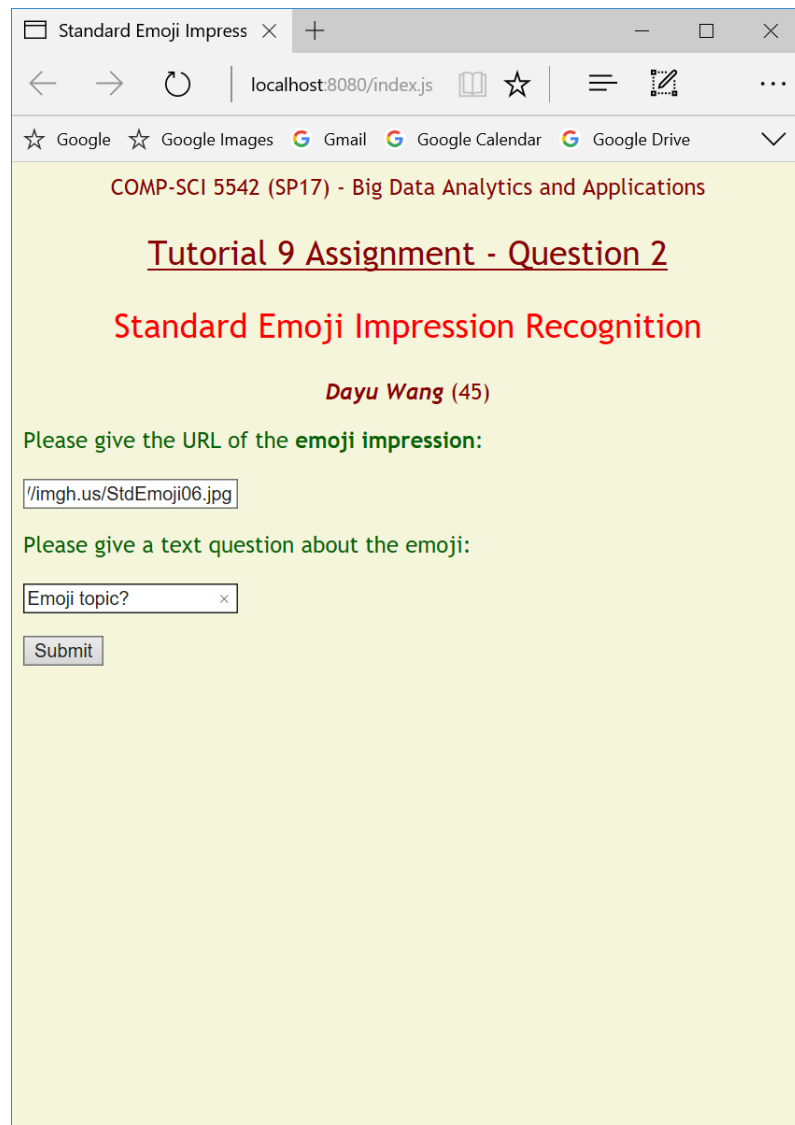
Dayu Wang (45)

Please give the URL of the emoji impression:

Please give a text question about the emoji:

Submit

Figure 5. Main page of the simple application.



Standard Emoji Impress

localhost:8080/index.js

Google Google Images Gmail Google Calendar Google Drive

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Tutorial 9 Assignment - Question 2

Standard Emoji Impression Recognition

Dayu Wang (45)

Please give the URL of the emoji impression:

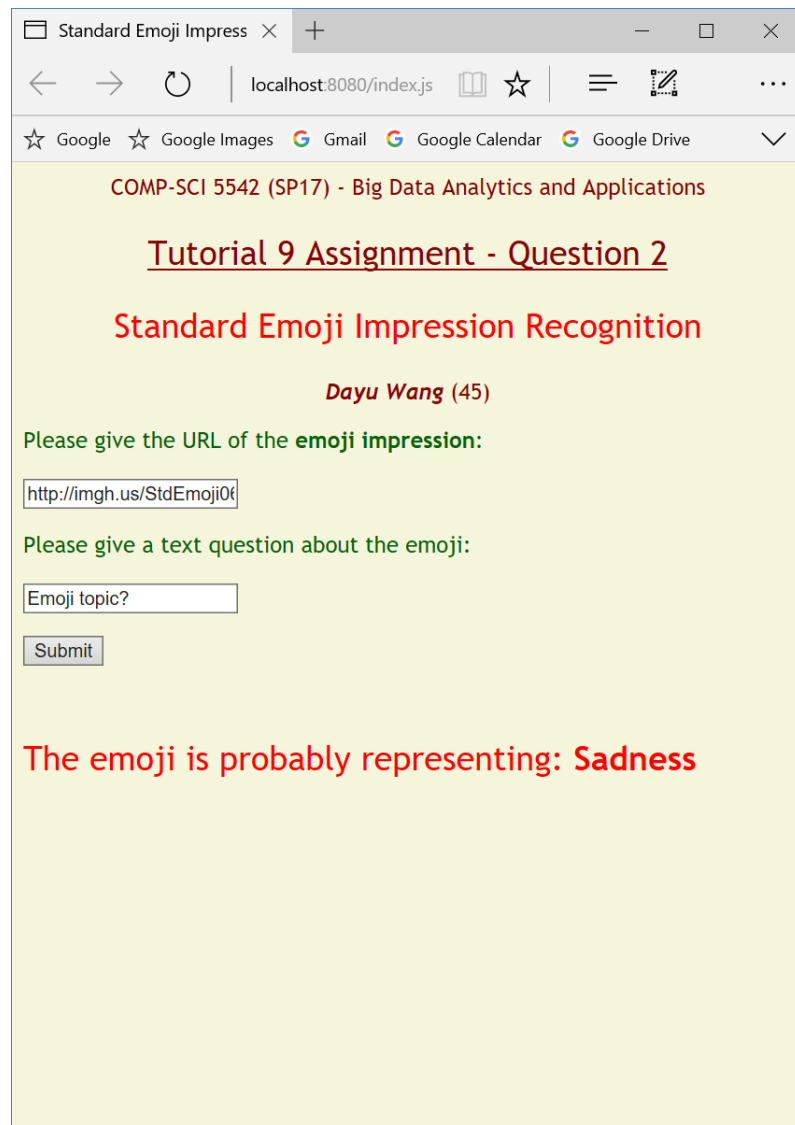
/imggh.us/StdEmoji06.jpg

Please give a text question about the emoji:

Emoji topic?

Submit

Figure 6. Input.



Standard Emoji Impress × +

localhost:8080/index.js

Google Google Images Gmail Google Calendar Google Drive

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Tutorial 9 Assignment - Question 2

Standard Emoji Impression Recognition

Dayu Wang (45)

Please give the URL of the emoji impression:

Please give a text question about the emoji:

The emoji is probably representing: Sadness

Figure 7. Output.