

easy_install digipy & easy_install mlboost (Machine Learning empowered by Python)

Francis Pieraut

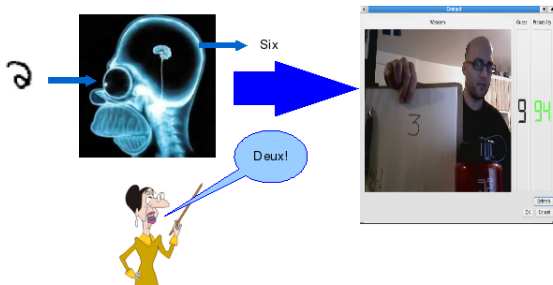
<http://fraka6.blogspot.com/>

<http://bitbucket.org/fraka6/digipy/>
fpieraut@gmail.com

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Machine Learning empowered by Python Review

- ▶ Machine Learning 101 \Rightarrow Features Extraction
- ▶ FE/Visualization/Demo/... \Rightarrow Python (mlboost)
- ▶ Hand writing digit recognition demo \Rightarrow digipy

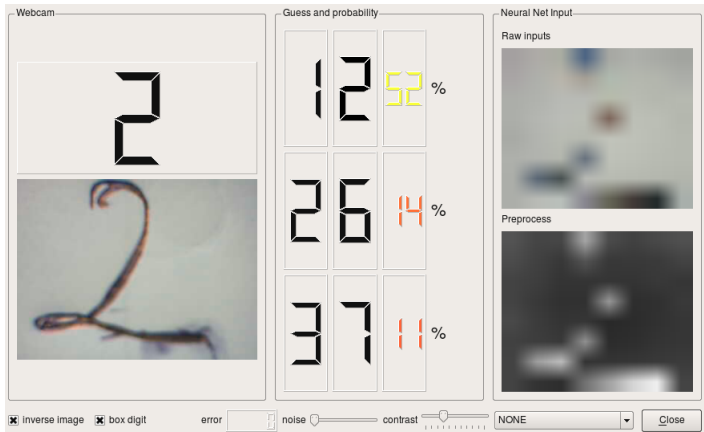


easy_install digipy 4 steps

```
File Edit View Terminal Tabs Help
fpieraut@fraka6:~$ sudo aptitude install python2.5-opencv
...
fpieraut@fraka6:~$ sudo aptitude install pyqt4-dev-tools
...
fpieraut@fraka6:~$ sudo aptitude install python2.5-matplotlib
...
fpieraut@fraka6:~$ sudo easy_install digipy
...
fpieraut@fraka6:~$ digipy
digipy                digipy-freq-analysis
digipy-compare        digipy-see-data
digipy-extract-features digipy-train
digipy-features2D
```

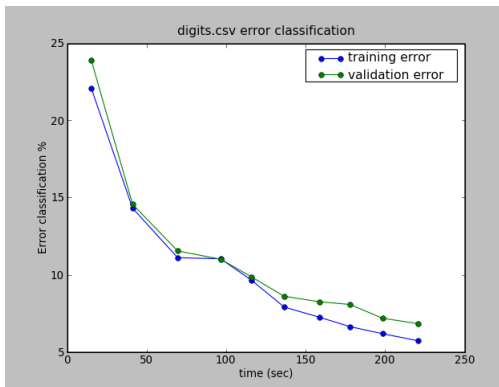
- ▶ python setup.py sdist upload (The Python Package Index)
- ▶ mercurial host <http://bitbucket.org/fraka6/digipy/>

digipy or digipy -test -e opt

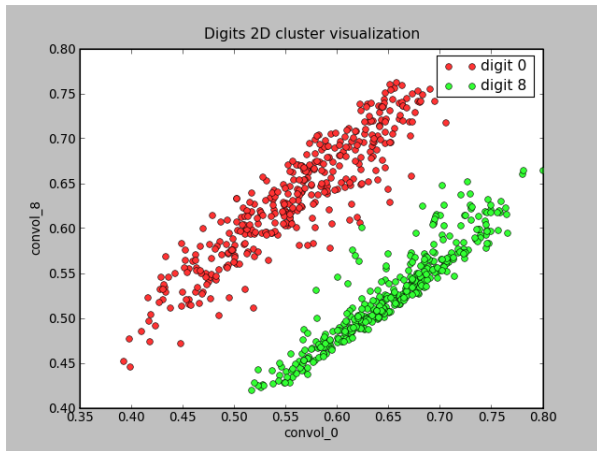


- ▶ `mlboost.nn(numpy)` = 10X slower `layers(C++)`

digipy-train -f digits.csv

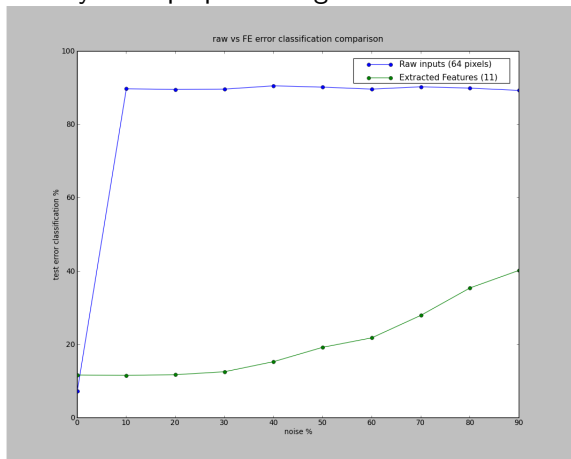


digipy-features2D -C 0,8 -f fe-digits-opt.csv



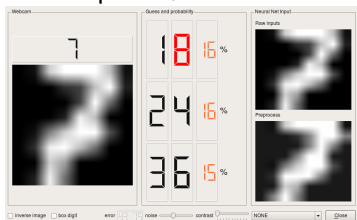
Noise Robustness: Raw Pixels vs Extracted Features

- ▶ Do we really need preprocessing?



Fast Demo

- ▶ 64 raw pixel + noise



- ▶ 11 Features + noise

