Building a fast digit recognition solution with Python

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One day ......
Sorry, I was wrong.
My Goodness ....
Image Recognition
There is a python module named pytesseract
PyTesser 0.0.1

Optical Character Recognition module for Python

PyTesser is an Optical Character Recognition module for Python. It takes as input an image or image file and outputs a string.

PyTesser uses the Tesseract OCR engine, converting images to an accepted format and calling the Tesseract executable as an external script. A Windows executable is provided along with the Python scripts. The scripts should work in other operating systems as well.

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**Home Page:** [http://code.google.com/p/pytesser/](http://code.google.com/p/pytesser/)
**Download URL:** [http://code.google.com/p/pytesser/downloads/list](http://code.google.com/p/pytesser/downloads/list)
**Keywords:** Python, OCR, Optical Character Recognition, Tesseract
**License:** Apache License 2.0
**Requires:** PIL

```python
>>> from pytesser import *
>>> image = Image.open('fnord.tif')  # Open image object using PIL
>>> print image_to_string(image)     # Run tesseract.exe on image fnord
>>> print image_file_to_string('fnord.tif')
fnord
```
Tesseract OCR

✓ Introduction
- Open source OCR engine
- Started at the HP labs between 1985 and 1994
- C, C++
- Google used it for document scan project

✓ Training
- Images fonts of Benchmark tools are non-standard.
- Training Process is fun!
### Technologies

<table>
<thead>
<tr>
<th>Common</th>
<th>Imaging Process</th>
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<td>Linux</td>
<td>PIL</td>
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<td>Python 2.7</td>
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<td>jTessBoxEditor</td>
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Image Pre-Processing

- Image Cropping
  - Crosshairs
- Pixel Interpolation
  - 20M Pixel → 99M Pixel
  - Recognition rate from 42% to 99.99%
- Binarization Processing
- Lines Recognition
Image Pre-Processing Sample

Original Image  Image Cropping  Pixel Interpolation
then ........

✓ Parser

In:    Number

Out: Structured number

✓ Store & Convert

In:    Structured Number

Out:  CSV File

Sample_20130522214241.csv