# Nephi OCR project

More accessible OCR library

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# Tricky to get into the field

# github.com/olivernina/nephi
# Open source

Community resource

Good starting point

Tools to make your life easier:

- Loads XML from certain data sources, or from files on the file system.
- Computes the average loss over the last epoch to see how it’s getting better
- It resizes images for you, keeping the aspect ratio (flexible max width)

Better examples

# Tech involved

CRNN (popular)

NN: CNN+RNN+CTC for the underlying tech.

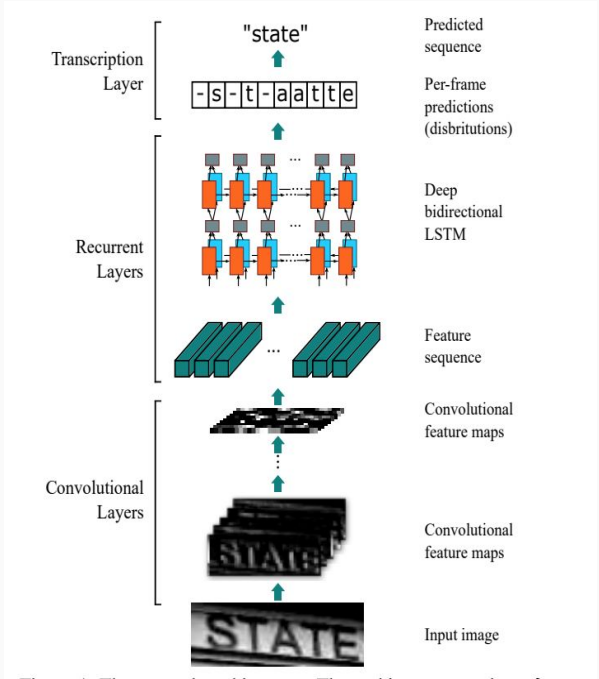
NN: (demo)

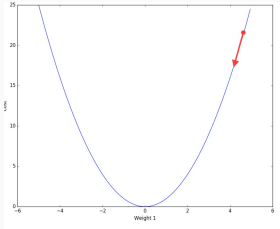
CNN: Simplified number of connections.

RNN: LSTM “capture long-range dependencies”

CTC: https://github.com/baidu-research/warp-ctc

How effective is it? (demo)



# Ease of use

So how hard is it?

We want to make it easy.

Fun and easy!

Demo install + train

Demo train large data set/videos

# Results

Results

After training 1 epoch (untrained):

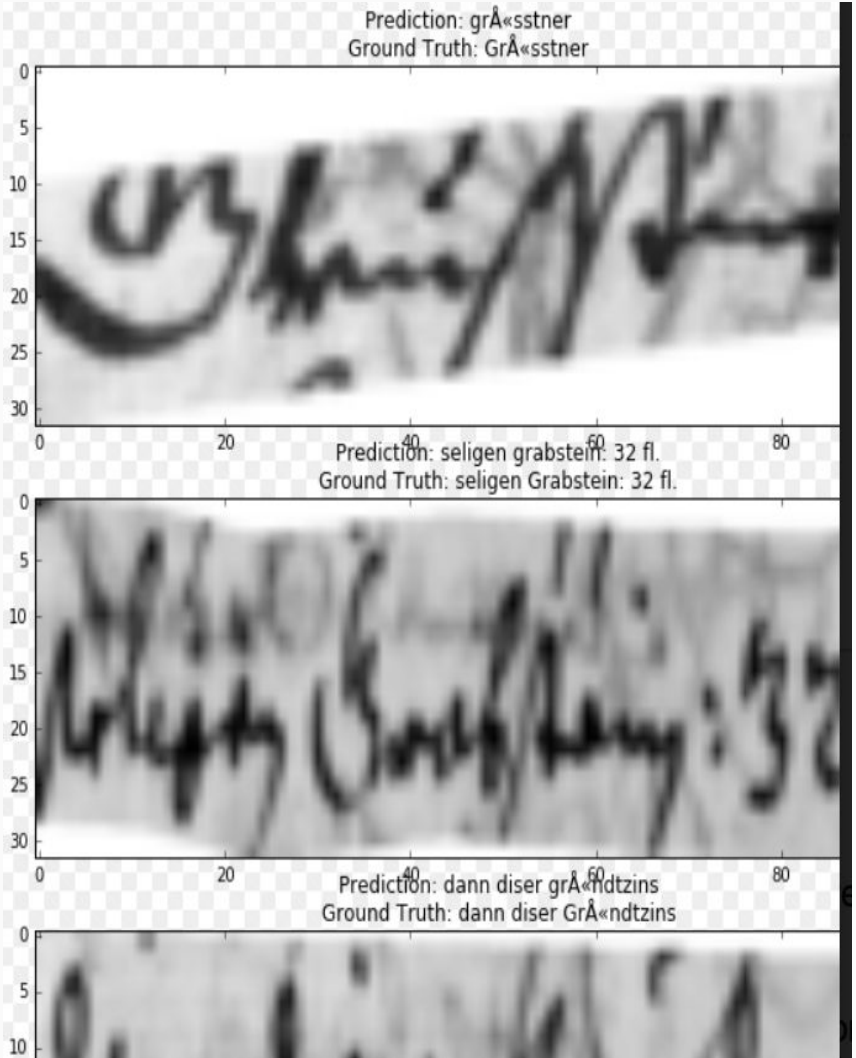
aas dernnaet  ann h- daaa.  => as dernaet an h da. , gt: Die Genneral ambts Rait¬
llchr t--n dz�-�-n-ewiils.  => lchr tn dzÿnewils. , gt: Alhie. sonnder Meniglich
aamme-  bllrz--neem-mma-ns => ame blrznemmans  , gt: Ainer Loblichen Regierūng.

After training over 3000 epochs (not on same segments):

imns sggtel�in  wer�n��ntt => imns sgtel�in wer�n�nt, gt: dise Motiūen, worūmb
herrren lann-nddshh�ūbba�  => heren lanndshūba�  , gt: herrn Lanndthaūbt¬
im  rr-s---r  anzzail zint  => im rsr anzail zint  , gt: in grosser Anzal aūf.
aiiee, a�s  bacchen olllig  => aie, a�s bachen olig, gt: Ainer aūf Laÿen etlich
die  herr--megehenns. vvnd  => die hermegehens. vnd, gt: die Thor angehengt: vnd

# Results

Best on test set



# 0.43%

Test:

Character error rate mean: 0.0043; Character error rate sd: 0.0471
Word error rate mean: 0.0160; Word error rate sd: 0.1104
Validation:
Character error rate mean: 0.4376; Character error rate sd: 0.5089
Word error rate mean: 0.8576; Word error rate sd: 0.4160

# Collaboration:

This is the code you have been looking for.

Parsing
Resizing
Average loss over the epoch

# Contributions welcome!

Excited to see what you will do.

“Power to you, the people”

# Thanks!

Contact us:

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