Week 5

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Project Overview

1. Synthesized Shredding
2. Oracle
3. OCR
4. Solving Puzzle
Edge Alignment: First Attempt
Alignment
Alignment
Alignment
Alignment
Alignment
Comrade,

I do not know the identity of that which you seek but my sources assure me that the answer may lie in the title of a 1937 film directed by Hitler.

Good luck in your hunt!
Alignment (Synthetic)
Alignment
Alignment
Alignment
Updated Synthetic Dataset

- Higher pixel-per-inch count
- Added noise and smoothing along edges
- No overlap
Updated Dataset

first n
Updated Dataset
Updated Dataset
Edge Matching and Alignment

- Fixed a few bugs in time series extraction
- Added ability to detect border pieces
- Experimented with and tested edge matching and alignment on top document border
  - Easiest case: no vertical displacement, small space of potential matches
Results

- Edge Matching: 2 “guesses” on average before correct edge match found.
- Edge Alignment:
Real-Shred Oracle

1. Extract chads
2. Manually find location of several chads to use as ground truth
3. Correlate ground truth and chads at different scales to find scale factor
4. Correlate scaled chads and solution image
5. Record position and letters present on chad
Real-Shred Oracle (Ideal)
OCR

- Find larger datasets of handwriters
- Find better handwriter similarity software
- Apply different transformations to writers
- Scale writing
- Extract writing from shred and add shred to training set
- Train OCRopus