

Chirographum User Manual

Chirographum Project

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Chapter 1

Introduction

This document provides a quick introduction to the use of the Chirographum Handwriting Recognition software. Figure 1 shows the main screen as it appears when the program is first started.

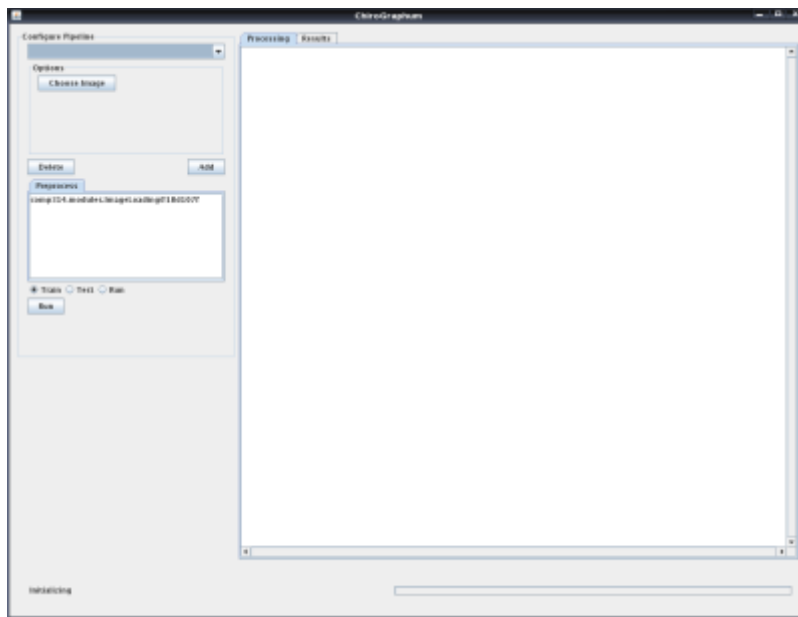
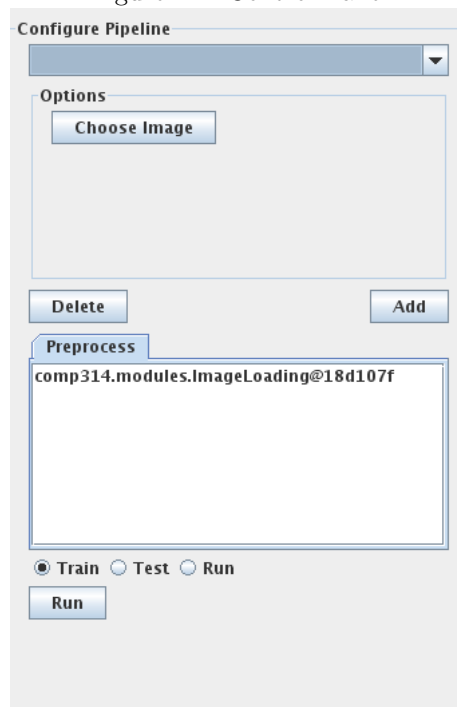


Figure 1.1: Initial Screen

1.1 Loading a File

All operation modes of the software require an image to be supplied. To load an image, press the “Choose Image” button on the control panel shown in Figure 1.1. The Control Panel can be found on the left hand side of the main screen as shown in Figure 1. When you press the button a File Open dialog will be displayed where you may select the file to load.

Figure 1.2: Control Panel



Chapter 2

Training Mode

The Training operation mode adds words to the Data Store so that they may be recognised in the future. Training mode requires both an image file and a text file. To load an image file, see Section 1.1 of Chapter 1.

2.1 Text File

Training Mode also requires a plain text file with the same basename as the selected image. This means that the image `foo.png` must have its text file named `foo.txt`; `bar.txt` will not work.

This text file should contain an ASCII representation of the image it goes with. The representation should be of the same form as the image. If the image has four lines of five words each, the text file should also have four lines of five words each. Each word in the text file should match up with the word in the same location as the image.

When being trained, the software will take the word in line 1, position 1 as being the ASCII representation for the word in line 1, position 1 of the image. Line 1, position 2 in the text file will map to line 1, position 2 in the image, etc. What ever is in the text file will be placed in the Data Store so this file should be the correct representation. If a word is spelt incorrectly then it the software will be trained with the incorrectly spelt word and when ever it encounters the word in an image it will output an incorrectly spelt version of it.

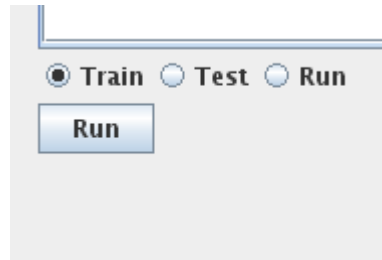
2.1.1 Example Text File

```
The quick brown fox jumps
over the lazy dog.
The dog walks slowly but
not without purpose.
The fox runs like the
wind. Where he goes and
where he came from no
one knows.
```

2.2 Running Training Mode

Once an image with an associated text file has been loaded, you can run Training Mode. To do this, select the “Train” radio button in the bottom of the control panel and press the “Run” button as shown in Figure 2.2. The Mode Select radio buttons can be found at the bottom of the control panel as seen in Figure 1.1.

Figure 2.1: Mode Selection Radio buttons



When run, Training Mode will process the selected Image File and its associated text file adding each word to the data store so it can be recognised in the future. When it has completed, the progress bar along the bottom of the main window will stop moving and you will see “Pipeline Complete” in the bottom left corner.

Chapter 3

Testing Mode

Testing Mode calculates the softwares accuracy by taking the same input as training mode and using the text file to check the results. For more details on the required text file, see Section 2.1

3.1 Running

To run Testing Mode, select the “Test” mode select radio button at the bottom of the control panel and press the “Run” button. See Figure 2.2 to see what the mode select buttons look like.

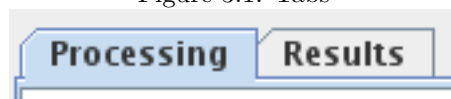
When some initial processing has completed you will be given an opportunity to fix any segmentation errors. You can tell when you are in this mode by the blue boxes drawn around each word (Figure 5) and an additional control panel under the main left control panel titled “Modify Segments”. For more details on segmentation correction, see 5: Segmentation Correction.

If there have been no segmentation errors just press the “Accept” button in the “Modify Segments” control panel to proceed to the processing stage. As this stage runs you will see a number of things drawn over the words. When it is complete the progress bar will stop and you will see “Pipeline Complete” remain in the bottom left status area.

3.2 Results

When the mode has finished running, you can switch to the results tab (Figure 3.2) to see which words it incorrectly recognised and and what its accuracy percentage is.

Figure 3.1: Tabs



A copy of the text the software recognised will be output to the file “results.txt” in the current directory.

Chapter 4

Run Mode

This mode takes an input image and outputs a plain text representation of this as “results.txt”. To use this mode, select the input file as described in section 1.1, select the “Run” mode select radio button in the control panel and press the “Run” button.

When some initial processing has completed you will be given an opportunity to fix any segmentation errors. You can tell when you are in this mode by the blue boxes drawn around each word (Figure 5) and an additional control panel under the main left control panel titled “Modify Segments”. For more details on segmentation correction, see 5: Segmentation Correction.

If there have been no segmentation errors just press the “Accept” button in the “Modify Segments” control panel to proceed to the processing stage. As this stage runs you will see a number of things drawn over the words. When it is complete the progress bar will stop and you will see “Pipeline Complete” remain in the bottom left status area.

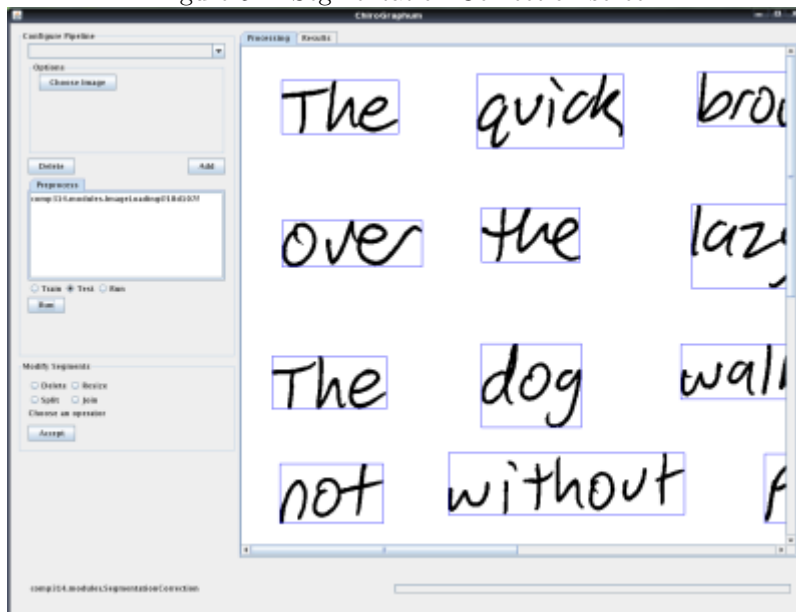
For the most part, Run Mode operates exactly as Testing Mode - only the results differ. In Run mode, the “Results” tab described in 3.2 does nothing. All that happens when it completes is the recognised text is output to the file “results.txt” in the current directory.

Chapter 5

Segmentation Correction

The Segmentation Correction screen allows you to correct any segmentation errors. You can see the Segmentation Correction screen in Figure 5.

Figure 5.1: Segmentation Correction screen



Segmentation Correction has four functions:

1. Delete Segment
2. Resize Segment
3. Split Segment
4. Join Segment

all of which can be selected using the radio buttons in the Segmentation Correction Control Panel (see Figure 5). When you are finished correcting any

segmentation errors, just click the “Accept” button to proceed with what ever operation was in progress.

Figure 5.2: Segmentation Correction Control Panel

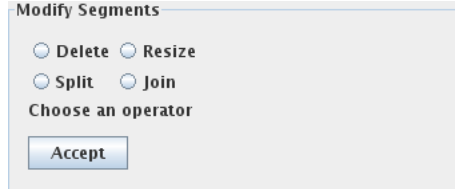
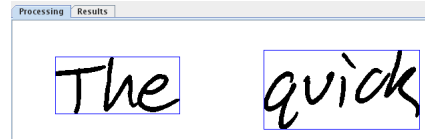


Figure 5.3: Some Image Segments



5.1 Delete Segment

To delete a segment, select the “Delete” radio button in the Segmentation Correction Control Panel and click on the border (see Figure 5) of the image segment you want to delete.

5.2 Resize Segment

To resize a segment, select the “Resize” radio button in the Segmentation Correction Control Panel. Then click on the border you wish to resize and drag it to move it.

5.3 Split Segment

To split a segment in half, click where on the border you wish to split the segment after selecting the “Split” radio button in the Segmentation Correction Control Panel.

5.4 Join Segment

To join two sections, select the “Join” radio button in the Segmentation Correction Control Panel. Then click on the borders of the two image segments you wish to join. The segments will then be joined.

Appendix A

Configuration File

Some program options can only be changed from the configuration file “chirographum.ini”. An example configuration file may be found below.

```
[general]
logfile = chirographum.log
datastore = ./dsStore
```

In this file, the logfile key specifies where logging information should be written to. The datastore key specifies where the Data Store should be placed.