Manual for Adel

If you have any problem with application, please contact me at mirka_boz@yahoo.com.

1 Usage

Before you start to work with program, you can see video from directory 'video'. Next, in directory 'JAR' is executable JAR program 'adel2.0.jar' and directory 'pics' has to be added in this directory 'JAR', too. Directory 'pics' contains images from the IAM Handwriting Database. This application wasn't tested on another database. Finally, directory 'source' contains sources of application written in JAVA.

2 Menu

2.1 File

2.1.1 Open

You can have opened maximally 4 images (supported formats JPG, GIF, BMP, PNG and TIFF) at once. You have avalaible PNG images (with handwritten text) in directory 'pics'. Images are in following form, for example '641-r02-038.png'. The number '641' is ID of writer and 'r02-038' is ID of image. It means that for example this two images '671-r06-103.png' and '671-r06-106.png' are written by the same writer but this two images '671-r06-103.png' and '641-r02-038.png' are written by two different writers (see figure 1). You can also open images from
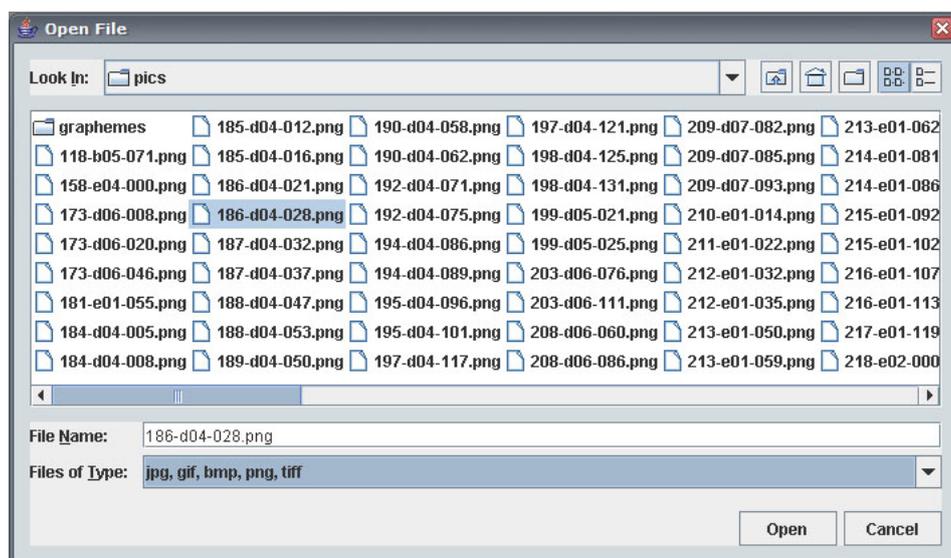
Figure 1: Open file.

directory 'pics/mixed', e.g. '398-j01-066–228-e02-100.png' which consists of two images: '398-j01-066.png' and '228-e02-100.png'.

2.1.2 Save as..

You can save your created image.

2.1.3 Close all windows

Close all open windows.

2.1.4 Exit

Exit the program.

2.2 Operations

2.2.1 Binarization

Binarization (or thresholding) is converting a grey scale image into a binary image. You can choose Otsu's thresholding and Entropy thresholding.

2.2.2 Histogram

Classic works on any image. Horizontal projection profile, Vertical projection profile and Projection profile of chunks work only on binary images.

2.2.3 Average filter

You can use three types: 3x3, 5x5 and 7x7.

2.2.4 Noise reduction

Isolated Pixels Removal and Region Removal work on a binary image.

2.2.5 Dilatation

Dilatation works on binary image.

2.2.6 Moore's algorithm

Moore's algorithm is a contour tracing algorithm described in our diploma thesis.

2.3   Application

2.3.1   Preprocessing

If you have open one image from directory 'pics', you can run the following preprocessing steps:

- Line segmentation

- Slant correction

- Word segmentation

- Grapheme segmentation and normalization

2.3.2   The first approach

Our first approach (based on feature vectors) works on one, two, three and four open images from directory 'pics'.

2.3.3   The second approach

Our second approach (which is combination of first approach and self-organizing map) works on two open images from directory 'pics'.

2.3.4   The third approach

Our third approach (which is combination of first approach and modified hierarchical clustering) works on two, three or four open images from directory 'pics'.