

# Chapter 1

## Handwriting Recognition Engine

### 1.1 Error Handling

Error handling is a crucial part of the handwriting recognition engine. It provides the information needed in order to give informed feedback to the user, when he has drawn a character. The general motivation for error handling has been discussed in section ?? typical sources of error have been described in section ?. The focus in this section lies on the technical aspects of error handling.

#### 1.1.1 Error Detection

Error detection is fully integrated into the character recognition process. Concerning abstract module structure it is not an individual model, but rather an integral part of the recognition module. There is a logical explanation for that matter. The error detection in this prototype is a structural error analysis. The achievement of a structural error analysis the main cause for the character recognition process to be structural. The task of error detection is not trivial, since there can be recognition errors as well. However, in the case presented here, the error detection uses the confidence value calculations for strokes, radicals and characters in order to find out if there were errors. Additionally, the confidence values for the structural elements define what type of error has been detected.

##### 1.1.1.1 Direction of Error Detection

Error detection is performed when the learning system asks the user to enter a certain character. Depending on the confidence value for the recognition of that character, error detection determines why and where the recognition failed. Error detection works in two directions. From *inside out* and *outside in*. The direction refers to the hierarchical nature of the character structure.

**Outside in** error detection

#### 1.1.2 Error Processing

why this section? actually the 'handling' or 'processing' aspect could be described in the recognition section 1.1.1 as well. so this section is only for a better overview, for document structure, thematically they are the same section. thus they are put together under Error Handling 1.1.

what goes into this section?