Statistical Examination of Handwriting Characteristics using Automated Tools

The most common task in Questioned Document (QD) examination deals with handwritten items. The task involves . . . determining the type and comparability of the known and questioned items, determining whether there is an adequate amount of information and whether the observed characteristics are representative of a class or are individualizing. These decisions are usually based entirely on the examiner's experience and power of recall. The availability of statistical models in each of these steps offers the promise for providing a scientific basis for the choices made and the opinions expressed.

This project demonstrated the construction of probabilistic models for several of the steps in handwriting examination, with a particular focus on handwriting characteristics.

The goal was to: (i) develop methods to extract samples of commonly encountered letter forms from extended handwriting samples of typical writers in the United States, (ii) prepare the appropriate format to present the samples to QD examiners who would then enter perceived characteristics with a user interface, (iii) determine the frequency of occurrence of combinations of handwriting characteristics, (iv) use those frequencies to construct a probabilistic model without the method being overwhelmed by the combinatorial possibilities and sample requirements, (v) develop methods to infer the probability of evidence from the model, and (vi) indicate where such methods can be used in the QD examiner's workflow for examining handwritten items.

Read the complete study, [1]

Source: NIJ [2]

Links:
[1] http://links.govdelivery.com/track?type=click&enid=ZWFzPTEmbWFpbGluZ2lkPTIwMTMwNDI2LjE4MjA3MDEzMDQyNi4xODIwNzAxMSZkYXRhYmFzZWlkPTEmc2VyaWFsPTE3NTM4MTg4JmVtYWls
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[2] http://links.govdelivery.com/track?type=click&enid=ZWFzPTEmbWFpbGluZ2lkPTIwMTMwNDI2LjE4MjA3MDEzMDQyNi4xODIwNzAxMSZkYXRhYmFzZWlkPTEmc2VyaWFsPTE3NTM4MTg4JmVtYWls
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