J21   Analysis and Recognition of Urdu Handwriting

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After attending this presentation, attendees will better understand one of the prestigious languages of Asia. Urdu is the national language of Pakistan and is also spoken and written in India.

This presentation will impact the forensic science community by illustrating the different ways the Urdu languages and alphabets are compared with each other.

Urdu is historically associated with the Muslims of the Indian subcontinent. Apart from its specialized vocabulary, Urdu is mutually intelligible with standard Hindi, which is associated with the Hindu community. The Urdu language received recognition and patronage under British rule when the British replaced both the Persian and local official languages with the Urdu and English languages in the North Indian regions of Jammu and Kashmir in 1846 and Punjab in 1849. Urdu is the national language of Pakistan; it has the same alphabet as Arabic and Persian (Farsi), so it is very important to be able to compare Urdu handwriting and signatures. It is also very interesting that the sounds of the English and the Urdu alphabets are quite similar. This will be a unique presentation and attendees will benefit greatly from it.

This research project is one of the unique research projects of Pakistan and will be of interest to questioned documents experts and students. In this study, data of different people's Urdu handwriting was gathered and analyzed in order to observe the natural variations present in their handwriting and Urdu signatures. The literacy rate of Pakistan is 56%, with most documents being written in Urdu, the national language. Thus, it is very important to learn how these writings compare to questioned documents and signatures.

In this study, a structural method of recognising Urdu handwritten writing characters is proposed. The main problem in the cursive writing identification is the segmentation into characters and into representative strokes. When dividing the cursive parts of the words, it is important to take into account the appropriate properties of the Urdu grammar and the segments connecting the characters with each other along the writing row. The main alphabets of Urdu are quite similar to that of Arabic; however, the problem determined was the detection of disguises and forgeries in the Urdu writing specimens. For this reason the data of different people writing the basic alphabets in Urdu was collected, and the change in the formation of these alphabets over time was observed and compared. In this study, writing character data of similar shapes for more than 20 people was taken into account and then analyzed with their previous writings.

Character Recognition, Cursive Handwriting, Urdu

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