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Tech Talk

Automated Signature Verification Checklist

Fast, reliable, real-time authentication is needed to support high-volume, transaction-oriented environments. When considering automated signature verification solutions, business rules must also be identified and addressed. The ideal solution will provide a highly reliable forgery detection system, enable more documents to be processed, and call on human intervention for exception handling only. The results will surpass manual-only verification, while streamlining current processes, and being adjustable to the specific needs of an organization or business unit.

Here are the technical details to consider when evaluating automated signature verification systems

Does the solution allow for multiple reference signatures?

Comparing signatures against multiple reference signatures reduces the number of false positives by taking into consideration random deviations inherent to human handwriting. The major problem facing signature verification technology is to differentiate between the consistent and unstable parts of the signature that vary with each signing. Therefore, the signature verification process has to have a certain tolerance, but it also must be sensitive enough to pick out distinctive evidence of a forgery, the proverbial needle in the haystack.

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Automated signature verification systems must consider more data to detect the stable distinctive characteristics in a signature, and to focus on them in the verification process simultaneously, ignoring random distortions and variations inherent in genuine signatures. The systems should allow the update of reference signatures and add new ones to ensure the availability of complete and current data for verification. And when more than one reference prototype is used for comparison, automated signature verification systems should indicate which of the references was found to match the best the signature in question for reviewing purposes.

The ability to work with multiple reference images also provides flexibility in the implementation of different business rules. For example, the processing of company checks signed by different people. If signatures of different individuals are included in the set of reference images, it is possible to verify that a check with an amount higher than a chosen threshold is signed by a particular individual, or two individuals entitled to sign checks of a certain value.

Does it provide a confidence value?

Assigning confidence values provides users with the ability to plan different actions based on custom interpretations of the results. The confidence value indicates how certain the verification process is about the match between the signature presented for verification and the corresponding reference signature. Depending on the confidence value chosen as a threshold, it is possible to change the percentage of “false accepts” and “false rejects” to tailor it to a specific application.

The goals of authentication based on signature verification are different for different applications. For example, in some applications the primary concern of verification is to minimize “false negatives” (genuine signatures that are erroneously considered to be fraudulent). Others have to reduce “false positives” (fraudulent signatures that are accepted as genuine).

The higher the threshold, the lower the number of signatures deemed genuine, and the lower the percentage of “false positives”, and the higher the percentage of “false negatives”. And vice versa, the lower the threshold, the higher the number of signatures considered genuine, the lower the percentage of “false negatives”, but simultaneously the higher the percentage of “false positives”.

Therefore, depending on the chosen threshold, one can regulate the percentage of “false positives” and the percentage of “false negatives” to make it optimal for a particular application.

Does it support diverse/multiple output options?

Applications that may benefit from signature verification are diverse and so are the requirements, purposes and scenarios that have to be implemented in these

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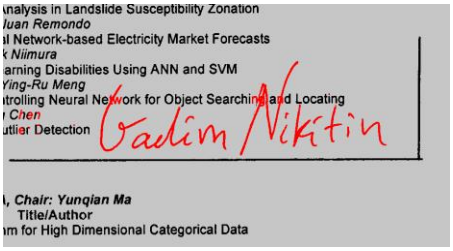
applications. Automated signature verification should account for multiple types of output results. It should also offer the flexibility and adaptability to be integrated in any environment to meet the needs of different applications.



Is the image preprocessed prior to recognition?

Image preprocessing is a very important stage that, to a large extent, predetermines the results of verification. Both insufficient cleaning, as well as the removal of significant pieces of a signature may be the cause of unreliable verification results and an increase in the rate of false alarms. At the same time, the task of image preprocessing is, in many cases, no less challenging than the verification itself.

Removing lines, preprinted text, intrusions from other fields, stamps and other undesired elements around the signature is an important first step to leave a clean signature image for verification and ensure the safety of informative data.

Is the signature automatically located?

Automated location of signatures on checks or documents is a very difficult task that needs to be considered. State-of-the-art automated signature verification systems can automatically locate one or two signatures on checks and IRD images. They also can be configured to automatically locate signatures on documents and forms, for example in vote-by-mail applications.

Do you have more planning, implementation or general questions? It's time to speak with an expert. Give us a call at 1-888-225-0169 or email info@parascript.com

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About Parascript

Parascript automates the interpretation of contextual data from image and document-based information to support transactions, information governance, fraud prevention and business processes. Parascript Artificial Intelligence software processes any document with any data from any source with its easy-to-use, image-based analysis, classification, data location and extraction technology. More than 100 billion documents for financial services, government organizations and the healthcare industry are analyzed each year by Parascript software. Parascript offers its technology both as software products and as software-enabled services to our partners. Our Business Process Services (BPS) providers, OEMs, system integrators and VAR network partners leverage, integrate and distribute Parascript software in the U.S. and across the world.

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