5. Conclusion

The system has been designed to correct variations in angle of rotation, in the range of –60° to +60°. However, it can be extended to cover the entire 360° planar rotation, to design a fool proof system capable of creating an optimum template after RST cancellation, even in a situation where the input pad may have been inverted. On similar lines, the resolution of rotation can be improved from 1° to 0.5° or 0.25° or even more, with the trade-off being increased program execution times.

Pure scaling and pure translation can be detected accurately as long as signature pixels do not go beyond the defining boundaries of the template. For the signatures used, a maximum translation of 200 pixels was detected along X and Y axes. Maximum scaling ratio was found to be 0.55. However, maximum variance of both translation and scaling may show slight variations from one signature to another.

For combined RST, it was experimentally observed that the correlation approach tends to be less reliable with significant increase or decrease in the scaling ratio. Signature images used for testing gave optimum result for scaling ratio, i.e., within 0.67 to 1.33, however, the scaling range giving angle and translation accurately may increase or decrease depending on the signature sample under test.

Thus, an optimum template was generated by the proposed system after subjecting the user image to RST correction with respect to the reference image.

6. References

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