PROJECT REPORT
on
BIOMETRICS FINGER PRINT AUTHENTICATION SYSTEM

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ABSTRACT

Imagine how convenient it would be to activate the security alarm at your home with the touch of a finger, or to enter your home by just placing your finger on the door handle. You will basically be able to gain access to everything you are authorized to, by presenting yourself as your identity.

This scenario might not be as far off as we might expect. In the near future, we may no longer use passwords and PIN numbers to authenticate ourselves. These methods have proven to be insecure and unsafe time and time again. Technology has introduced a much smarter solution to us: Biometrics. The applications of biometrics are becoming more apparent with the increasing use of computers in our daily life. As cyber crime increases, the need for security against identity theft becomes more and more apparent. Add to this the ever-increasing threat to personal, corporate and government assets, the need for better forms of security is obvious.

The Project is to investigate the current techniques for fingerprint recognition. This target can be mainly decomposed into image preprocessing, feature extraction and feature match. For each sub-task, some classical and up-to-date methods in literatures are analyzed. Based on the analysis, an integrated solution for fingerprint recognition is developed for demonstration.

The demonstration program is coded by MATLAB. For the program, some optimization at coding level and algorithm level are proposed to improve the performance of the fingerprint recognition system. These performance enhancements are shown by experiments conducted upon a variety of fingerprint images. Also, the experiments illustrate the key issues of fingerprint recognition that are consistent with what the available literatures say.