GRAPHICAL USER INTERFACE (GUI) FOR THUMBPRINT IMAGE ENHANCEMENT AND MINUTIAE EXTRACTION

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ABSTRACT

This project presents the development of Graphical User Interface (GUI) for thumbprint image enhancement and minutiae extraction. The system is developed by using MATLAB R2009b software. This project also includes the development of standalone program for this system.

The main purpose of this Graphical User Interface development is to get the value of real-end points and real-branch points of a thumbprint image. The real end points are the points of ridge termination while real-branch points are the points of ridge bifurcation. The value of this points is used in thumbprint image matching process which to identify the owner of a thumbprint image. Thumbprint image enhancement consist of several process such as histogram equalization process, enhancement by Fast Fourier Transform (FFT) factor, and image Binarization while minutiae extraction consist of ridge thinning process, region of interest (ROI) extraction, and minutiae extraction process.

All process should be done one by one in correct order. The last process will produce all the information about the thumbprint image; the real branch points and real end points value. All this value is totally different for each person as there are no two people in this world who are having the clearly same design of thumbprint ridge pattern.

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