Identification of Palmprint Creases Line Equations Features by using Matrix Approach for Individual Profiling.

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- **Abstract:** Biometric palmprint has recently gained significant interest from researchers. Since the features within the region of interest (ROI) on every person palmprint are considered to be unique, palmprint is however hesitantly be used by the law enforcement agencies to identify a criminal. It is because, there is a lack of scientific and mathematical method in demonstrating palmprint uniqueness. Therefore, this study will investigate the uniqueness of palmprint using three main creases in a palmprint which are Distal Transverse Crease, Proximal Transverse Crease and Radial Transverse Crease. The objective of this research is to determine whether the creases lines equations are unique using matrix approach. There will be two type of equation of creases lines comparisons: comparison between creases and comparison between palmprint. The individual palmprint profiling for each respondent will be rendered to prove that each person has a unique identification. The result of the study shows that each crease in a palmprint is unique and different from one crease to another and an individual palmprint is also unique and different from one palmprint to another since both comparisons satisfied the Theorem of Uniqueness of a Matrix for Comparison between Creases and Palmprints. The result also supported by the individual palmprint profiling generated. Therefore, it is proven that palmprint is unique based on the equation of creases lines and can be used for biometric identification.

- Keywords: Biometric palmprint, Radial Transverse Crease, biometric identification