

## **IMAGE QUALITY ESTIMATION OF CONTACTLESS INFANT FOOT PRINTS USING ENHANCEMENT FILTERS**

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### **Abstract**

Biometric systems have been using physiological & behavioural traits of human for identification or verification of an individual. Most biometric systems have been developed for adults in several applications particularly, civilian and forensic domains. There is lack of well-defined systems for infant's identification or verification, and newborn recognition has got attention in recent years. There are several applications that has a requirement to use infant recognition particularly, infant tracking, identifying missing child, child swapping etc. It is observed that image acquisition for infant biometric systems does not follow the same procedures as adults. Since infants have different laying positions, acquiring face, fingers and eye related biometric is difficult. However, foot prints can be easily collected using some mobile based devices even if the infants are in sleeping positions. When dealing with such images, applying enhancement filters without affecting the image quality is a crucial step. In this work, the quality of acquired images is comparatively evaluated. A set of enhancement filters are experimented with original and enhanced images, and the quality of images is measured using image quality metrics. From the analysis, Jerman enhancement filter and unsharp masking show a better-quality preservation and slight improvement in performance with infant foot print biometric system.

**Keywords:** *footprints, biometrics, spatial filter, image quality*