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ELECTRONIC THESIS AND DISSERTATION UNSYIAH

TITLE

BAND LIMITED PHASE ONLY CORRELATION (BLPOC) UNTUK APLIKASI PENCOCOKAN IRIS MATA

ABSTRACT

Irides can be used as personal identity because some of their nature, that is stable, has a diverse physical structure and does not depend on the genetic trait. Research on this final project aims to obtain and analyze the results of iris matching process using low frequency phase (band limited phase only correlation), and find out how much low frequency that produces the maximum peak and find out how well the band limited phase-only correlation (BLPOC) compared to phase only correlation (POC). Iris recognition systems are discussed starting with the process of automatic segmentation based on Hough transform to localize the circular iris and pupil. Then the system extracts and normalizes the irides into a rectangular shape with dimensions 240 x 20 pixels (full circle of iris image), 120 x 20 pixels ($\frac{1}{2}$ circle of iris image) and 60 x 20 pixels ($\frac{1}{4}$ circle of iris image). Normalized irides were then correlated using a BLPOC. Correlation based on POC on $\frac{1}{4}$ circle normalization resulted in 50% accuracy. While correlation based on BLPOC on the same condition in a higher accuracy level, that is 80%.

Keywords: Iris, Fourier Transform, Band Limited Phase Only Correlation.