

# Optimized Face Recognition Algorithm using Spatial and Transform Domain Techniques

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## **Abstract-**

The biometrics is used to identify or verify persons effectively in the real time scenario. In this paper, we propose Optimized Face Recognition Algorithm using Spatial and Transform Domain Techniques. The face images are preprocessed using Discrete Wavelet Transform (DWT), resize and filtering. The Compound Local Binary Pattern (CLBP) is used to generate magnitude and sign components from preprocessed face images. The histogram is applied on sign and magnitude components of CLBP to compress number of features.

The generated histogram features are concatenated to form CLBP-Histogram features. The Fast Fourier Transformation (FFT) is applied on preprocessed image and FFT magnitude features are generated. The CLBP-Histogram features are fused with FFT magnitude features to generate final feature set. The final feature sets of test image and data base images are compared using Euclidian Distance (ED) to recognise a person. It is observed that the performance parameter of the proposed algorithm is better compared to existing algorithms.

## **Keywords-**

- Biometrics;
- Face recognition;
- DWT;
- FFT;
- CLBP;
- Histogram.