

A
Dissertation
On
**IMPROVED FACE RECOGNITION
TECHNIQUES**

USING
Scale Invariant Feature Transform

Submitted in Partial fulfilment of the requirement for the award of the degree of

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In

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CERTIFICATE

It is certified that the dissertation entitled “**Improved Face Recognition using Scale invariant Feature Transform**” is a work of **AMIT KUMAR GAUTAM** Roll No. **2K11/SPD/03**, a student of Delhi Technological University. This work was completed under my direct supervision and guidance and forms a part of the Master of technology (Signal Processing & Digital Design) course and curriculum. He has completed his work with utmost sincerity and diligence.

The work embodied in this major project has not been submitted for the award of any other degree to the best of my knowledge.

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ABSTRACT

Face recognition presents a challenging problem in the field of image analysis and computer vision. In the presented work we have proposed a novel approach for face recognition using Scale-invariant feature transform. We have the standard ORL(Olivetti Research Laboratories) Database. It contains 20 subjects having 10 different orientations and expressions. The database is divided into two parts, training and testing databases. The SIFT features are generated for every training image and the features called key points are calculated, then a k nearest neighbour classifier is used for the matching scheme for test data. The recognition results demonstrate its robust performance under different expression conditions, pose variation, illumination changes and partial occlusion. The Equal error rate which can be calculated by FAR and FRR is 0.80 and the recognition rate is 97.91% that show the robustness of the proposed method.

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