

NIGHT VISION IMAGE FUSION TECHNIQUES FOR FINDING HUMAN FROM OTHER OBJECTS

A dissertation submitted in the partial fulfillment for the award of Degree of

Master of Technology

In

Software Technology

Submitted by

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July 2014

CERTIFICATE



Date: _____

This is to certify that the Major Project entitled “**NIGHT VISION IMAGE FUSION TECHNIQUES FOR FINDING HUMAN FROM OTHER OBJECTS**” submitted by **SUDHANSHU AGNIHOTRI**, Roll Number: **2K11/SWT/18**; in partial fulfillment of the requirement for the award of degree Master of Technology in Software Technology to Delhi Technological University, Bawana Road Delhi; is a record of the candidate’s own work carried out by him under my supervision. The matter embodied in this thesis is original and has not been submitted for the award of any other Degree.

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ABSTRACT

This master's thesis will focus Human /pedestrian detection by surveillance or motor vehicles when the visibility is very poor due to poor weather or limited light conditions. The purpose is therefore to propose an algorithms suitable for human detection and furthermore to demonstrate a proof of concept. In today's world lot of vehicles are coming embedded with pedestrian detection mechanism Using IR,Kinect & Stereo sensors with raising alarm to slow down speed if any human detected nearer to vehicle.

Early on in the project it was decided to use RGB images, which is a conventional color image together with a depth map. Machine learning algorithms were used to classify humans where an artificial neural network was found to be the best performing classifier in its group. Finding informative features is important to facilitate classification. Several imaging features were tested and the six most interesting are presented in this report. The feature called fourier descriptor showed the best performance in its group. Thus overall our objective in this thesis is to make more enhancement in image processing and detection humans with more clarity in observation.

Keywords: Human detection, object recognition, computer vision, RGB, depth map, feature extraction, fourier descriptors, Haar-like features, image moments, machine learning, k-nearest neighbors,support vector machines, decision tree, artificial neural network