

ABSTRACT

Computer Vision is a research greatly developed today. The main idea is to solve how a machine be able to recognize an object. The practical application of Computer Vision for example is real time face recognition system. So far, there are many kinds of problems faced in face recognition technology, they are pose variants, face orientation, lighting and computational problems. In real world, face recognition system should be able to detect the presence of face and extract it to be recognized.

Pulse-Coupled Neural Network (PCNN) is a new promising image processing tool. Since the Pulse-Coupled Neural Network firing scheme depends mainly on the shapes of the image, it is suitable for automated face segmentation (AFC) because face images contains the same shape. In this paper, we present an algorithm for automatic facial features (eye, nose and mouth) detection in face images for different expressions based on PCNN-guided active contour models (snakes).

Based on test result, PCNN algorithm is able to produce a good accuracy between 87-98 percent on the grayscale and RGB images. And Active Contour method is also good enough to do segmentation for automatic features detection based on the curve initialization its image.

Keywords: Computer vision, Real Time Face Recognition System, facial features detection, active contour, Pulse-coupled neural network.