A New Modular Neural Network For Face Detection

e abdelrahman, e eltaweel, s saraya, f.f areed

Abstract

The computer vision system nowadays received more interests froiii lire rescarchcrs, and lace detection or In general object detection Is a fundamental problem in this field, and is considered as the first important step in many face i mage-processi ng app iications. Recently, the artificial neural network research has focused on simple models, but such models have not been very successful in describing compJex systems (such as face detection and face recognition). The face detection problem may be described as follows: Given a test image (any scanned in photograph or frame from a video camera), find the locations and size of every human face within the image. The problem of facc detection differs from the problem of face recognition in that face detection has exactly two classifications: face or non-face, whereas face recognition usually has a number of classifications equal to the number of individuals. Face detection is important in a wide

variety of areas, which include but

are not limited to face recognition;

model   based video coding, human

computer interaction, and automatic

annotation for image databases.

paper introduces a jiew

proposed artificial neural network

model for face detection called

Modular Neural Network (MNN).

The new system consists of two

Multi-Layer Perceptron modules

(MLP), each module deal with a half

of face one for right half, and the

other for the left half, the outputs of

the two modules are feeding to a

decision module to collect the

outputs of the two half modules,

which ranging from +1 for (face) and

-1 for (non-face),