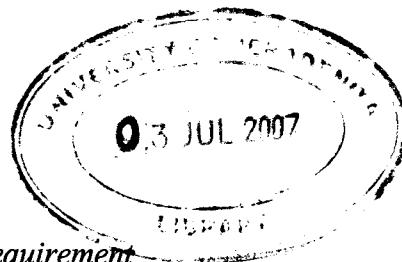


FACIAL EXPRESSION RECOGNITION SYSTEM

A PROJECT REPORT PRESENTED BY

KALAIMAGAL SIVAYOGANATHAN

to the Board of Study in Statistics & Computer Science of the
POSTGRADUATE INSTITUTE OF SCIENCE



*in partial fulfillment of the requirement
for the award of the degree of*

MASTER OF SCIENCE IN COMPUTER SCIENCE

of the

UNIVERSITY OF PERADENIYA

SRI LANKA

2006

607446

510-78
SJV

FACIAL EXPRESSION RECOGNITION SYSTEM

K. Sivayoganathan

Department of Statistics & Computer Science

University of Peradeniya

Peradeniya

Sri Lanka

Images containing faces are essential to intelligent vision-based human computer interaction, and research efforts in face processing include face recognition, face tracking, pose estimation, and expression recognition. However, many proposed methods assume that the faces in an image or an image sequence have been identified and localized.

Facial expressions convey non-verbal cues, which play an important role in interpersonal relations. Automatic recognition of facial expressions can be an important component of natural human-machine interfaces. It is also widely researched study in fields such as artificial intelligence, computerized games, medicine and PC application development. All these areas are in need of a system that could identify the emotions of a person.

Though humans detect and interpret facial expressions with little or no effort, the development of an automated system that accomplishes this task is rather difficult. There are several related problems: detection of an image segment as a face, extraction of the facial expression information, and classification of the expression to an emotion.

We propose a methodology in detecting facial expressions. The method is based on a simple segmentation method, geometric feature based extraction and neural network based classification techniques. A prototype system is also developed and the methodology is automatically tested. The test results indicate that the proposed method detects facial expression successfully.