CHAPTER 1

INTRODUCTION

A face detection system is a computer application for automatically detecting human face from a digital image or a video frame from a video source. Face detection is a pre-processing of face recognition. It is also used for the security system.

1.1 Overview

Face detection is an important first step for applications in several areas, including biometrics, human-computer interfaces, and surveillance. Nowadays, the importance of the automatic face detection and tracking system has increased as it is needed for video surveillance and new user interfaces. The goal of this research effort is to construct a face detection system using a webcam in real-time. This system used Visual Studio C++ to develop algorithms that are accurate and computationally efficient. This project is used Haar Classifier Technique to detect face location.
1.2 Objective

There are few objectives to design face detection system. The objective of face detection are:

- To design real time face detection system.
- To utilize the face detection system based on Haar Classifier.
- To develop face detection system using Visual C++ 8 edition.

1.3 Work scope

The scopes and guidelines are listed to ensure the research is conducted within its intended boundary. This is to ensure the research is heading to the right direction to achieve its intended objectives.

The first scope of this project is to develop a face detection based on Haar Classifier. Haar Classifier is used because it achieved high detection accuracy. Haar Classifier can efficiently reduce or increase the class variability and making the classification easier.

The second scope is to extract the human face. It will extract the desire image, for this system it will extract human face using Haar Classifier.

Another scope of this project is used software Visual C++ 8 edition to verify the algorithm and show the result. It is used to create face detection system that can detect face in real time.
1.4 Problem Statement

This project is to improve the face detection system by using Haar Classifier to get higher accuracy result. Haar Classifier is used for face detection because it can detect the desire image very fast. The algorithm has been used for the detection which achieved high detection accuracy.

1.5 Thesis Outline

Chapter 1 will describe the introduction of this system, the objective of this project, the problem statement, the work scope and overview of this project.

Chapter 2 will review about the information find on all the material or data used in the development of the system.

Chapter 3 will explain all the method use to develop this system. This chapter will explain briefly about Visual C++ and OpenCV in designing the face detection system.

Chapter 4 will include all the results and the explanation about the results after all the development process has done.

Chapter 5 will show the summary after all and come up with some recommendations for some improvements.