CHAPTER 1
INTRODUCTION

1.1. Background

In this day and age, which is increasingly advanced and rapidly growing, many systems are developing to detect goods used by someone with the aim of facilitating community activities. In some places a person is required not to use glasses for certain activities, such as making transactions at an ATM machine. With the development of technology, this can be overcome by using image processing which can determine whether a person is wearing glasses or not. The problem in this case is detecting someone who is wearing glasses or is not wearing glasses.

The haarcascade classifier algorithm is one of the algorithms that can detect a human face, the algorithm is able to detect it quickly and in real time. The haarcascade classifier algorithm has the advantage of fast computation because it only depends on the number of pixels of a photo or video. The haarcascade classifier algorithm can be used to process video directly using haarcascade frontalface to detect faces and haarcascade eyes to detect eyes which can conclude that someone is wearing glasses or not.

In this project, video processing uses the haarcascade classifier algorithm and opencv which aims to detect a person's face and eyes in the video. In the first stage the haarcascade frontalface will detect the person's face and a green square pattern will appear around the face, then the haarcascade eye will detect the person's eyes and a square pattern will appear around the eyes. So if the person's face and eyes are detected, it is certain that the person is not wearing glasses, otherwise if only the face is detected while the eyes are not detected, it is certain that the person is wearing glasses. Caption text appears at the top of the person's face. The program also counts the number of faces and eyes of a person in the video. Therefore I want to help in detecting someone who wears glasses accurately and quickly.

1.2. Problem Formulation

1. How does the haarcascade classifier algorithm work to detect someone who is wearing glasses or not wearing glasses?
2. What are the advantages of the haarcascade classifier algorithm in its use in real time video?
3. How is the success rate of detecting someone who uses glasses using live video by applying the haarcascade classifier method?

1.3. Scope

This identification project the author uses Python version 3.8.5. This project uses a library from OpenCV, as well as recording the face of a person wearing glasses using a laptop webcam. And with the hope that the live video can detect someone wearing glasses clearly and accurately and get maximum results.

1.4. Objective

The purpose of this project is to help determine whether a person wears glasses or not, somewhere it is mandatory not to wear glasses for certain purposes. By using the haarcascade classifier algorithm, it can detect using live video quickly and accurately. Therefore, the existence of this project can be helpful and beneficial for several parties.