

CHAPTER I

INTRODUCTION

1.1 Project Background

In the current era, almost all fields are progressing, especially in the field of technology such as web development, application development, and many more. In addition, progress in the field of machine learning has also experienced developments that are no less competitive with web dev or app dev. Various kinds of machine learning were developed by several people such as distance sensors between objects that can be used for projects that require features to avoid collisions between stationary objects such as walls, trees, or moving objects such as humans, animals, and many more.

In addition, machine learning can not only be implemented on media such as raspberry pi, and arduino. With the help of people who have developed technology in the field of machine learning, now machine learning can be implemented on various platforms such as web, desktop, to android applications. There are several platforms that provide machine learning in the field of object recognition such as firebase and tensorflow.

This project focuses on monitoring indoor air quality using image processing, where this project only needs Android without using supporting tools such as Arduino, Android alone is enough to use Machine Learning and where Machine Learning here will serve as a qualification for the required air quality level. is in the room.

1.2 Problems statement

1. Air pollution is one of the major concerns in the modern era , around 4.6 million people die in a year due to air pollution , with over 91% of the world population living in unhealthy surroundings which does not meet the standards of the World health organization(WHO). Veena, S. (2021).
2. Indoor air pollution is receiving widespread attention as it can endanger people's health. The advantage of ending indoor environmental monitoring is the detection and improvement of indoor air quality. Maduranga, M. W. P., Kosgahakumbura, K. N. M. H. H., & Karunaratna, G. H. C. J. (2020).

1.3 Objective

The project has the following objective:

- 1 To develop android application to detect air quality using image processing.
- 2 To help users for monitoring level air quality at indoor.
- 3 To to display the air quality index in percentage.

1.4 Scope

○ Sytem Scope :

1. This system using image processing algorithm for monitoring level of air quality at indoor
2. This system will process the picture and give a result of air quality in percentage

○ User Scope :

1. User are able to input some picture from gallery of indoor area

2. User will get the result from this apps after finished the image processing algorithm

1.5 Assumption and Limitation

1. Assumption

Assumption (basic thought) is a thing assumed to be right by the researcher as a basic of the project during this project. With this system, hopefully it can make more easier to qualifying air level at indoor just need to install application. and this project is only using picture for getting some result maybe need format file like *jpeg,or jpg

2. Limitation

This project focuses are limited to this.

1. This project may have weakness in accuracy and this accuracy depends on the specs of the smarthphone camera used.
2. The application maybe need android smartphone version was kind a higher for install this application.
3. And this application is only for Android.