CHAPTER 5

CONCLUSION AND RECOMMENDATION

This chapter discusses the project's conclusion, which matches with the stated objectives. As a result, ideas for future enhancements are made based on the challenges and constraints encountered throughout this project.

5.1 Revisit Objectives

Therefore, this part will examine each of the aims and objectives by summarising how the objectives are developed. Below are the objectives for this project:

a) **To study suitable neural network methods to classify animals using images.**

   The primary goal of this project is to investigate which kinds of neural networks are most suited for classifying animals based on the animal's images. The research presented in the previous chapter led to the discovery of a solution regarding which neural networks are more suited than others. This solution, known as the Convolutional Neural Network, may be used to train a model to categorise each animal. In order to train the model, it is necessary to import a sizable dataset including images of animals as well as certain libraries, such as TensorFlow.

b) **To develop a system that can recognize animals and get information about the animals.**

   For the purpose of achieving this aim, it is necessary to construct a system or application that is capable of recognising animals and, having done so, obtaining information on those animals. The mobile application is built with Android Studio as the development environment. In order for the application to recognise an animal, users will need to upload an image of the animal to the application first. Once the image has been uploaded, the programme will be able to recognise the animal and will also show information on the animal.

c) To test that developed system.

It is necessary to test the mobile application in order to fulfil this target. The testing will verify that the functionality of the application will operate properly and contribute to the accomplishment of the project's objectives. As a consequence of this, this objective is achieved by putting into action a testing and validation strategy with the intention of ensuring that the application will perform adequately for the target audience.

5.2 Benefits

The significance of the study lies in the fact that it has the potential to aid anyone in enhancing their awareness of animals, particularly children who are naturally inquisitive. After the image has been analysed, the programme will supply the information about the animals that has been requested by the users, and it will display that information to them. This study will also provide individuals with new opportunities to engage with nature via their smartphones, which can be utilised at any time and in any location. Visitors visiting the zoo are able to keep their social distance and have a sense of increased safety when they do not congregate in large groups.

5.3 Limitation and challenges

This application has a number of limitations, one of which is that it is only able to recognise specific animals. These animals include the Malayan tiger, sun bear, deer, Asian elephant, and orangutan. This is because there is not enough data available to properly train a model that can categorise all of these animals. It used a different programming language to train the Convolutional Neural Network, which was Python; however, it used Java to build the mobile application, so the challenge in building this application is to integrate the model with the mobile application. The reason for this is that Java was used to build the mobile application. Importing the model into the mobile application is therefore the most difficult part of building this application.

5.4 Future Recommendation

The recommendation that may be applied to this application for the future is to include additional animals that it is able to identify, so that it can be utilised as an application that can be used all over the world. The next recommendation is to make use of a larger dataset in order to improve the application's ability to correctly identify and anticipate the animals based on their photos and ensure that it achieves the maximum level of accuracy possible when recognising animals.

5.5 Summary

Finally, focusing on the project's goals will help us achieve our desired results. Starting with the comparison of the app being produced with comparable applications identified in the literature research, the proper type of architecture and significant criteria for the app were selected. As for the second, we were able to effectively finish the mobile application design and development based on the characteristics that were mentioned. By using a system testing technique like a test case, the mobile application's functionality was thoroughly analysed. In order to encourage future research in this area and so enhance the application, further recommendations were given. In addition, this study's relevance may be linked to the mobile application's contribution. In addition, the project has offered as an example of numerous ways that might be utilised, stimulating more computer science study.