Universiti Teknologi MARA

Animal Recognition using Classification Technique (ARUCT)

Muhammad Naim Farhaan bin Zamani

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ABSTRACT

There are many species of animals around the world. Some of animals have similar physical characteristic because they are may be from same family class. For example, gorilla and chimpanzee, leopard and jaguar, alligator and crocodile, turtle and tortoise, seal and sea lion, frog and toad, and donkey and mules. This project is motivated after see many people especially child sometimes adults hard to classify and recognise animal by looking on their physical characteristic. The general scope of this project are to recognise on three adult big cat from falidae family that are cheetah, leopard, and jaguar based on their spots or rosettes differences. Animal Recognition using Classification Technique or known as ARUCT is a system that can identify and classify an animal into their own genus classes by recognise their spots or rosettes. In addition, this project is using back-propagation neural network (BPNN) algorithm technique to recognise those animals. This technique are chosen because it knows as one of suitable technique that can recognise a pattern. By using 2500 input neurons and 80 hidden neurons, this ARUCT system will recognise the input data then classify into three output data which is cheetah, leopard, and jaguar. This system also assist users to know about the animal behaviour and what they eat. Thus, this project hopefully help users more interested to know the life of nature.

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CHAPTER 1

INTRODUCTION

This chapter will introduce the project background, problem statement, research question, research objective, research scope, research significance, and summary of this project.

1.1 Research Background

Every living thing of this planet is related to every other living thing. Animal is one of creatures in the world. No one knows the exact species of animals exist on Earth. In fact, scientist discovered around 10 000 species annually with only some species has been described to actual species. Based on the latest research in 2011 by Census of Marine Life scientists, there are 7.77 million species all over the world which 953 434 species have been described and categorised. Biologists use the taxonomic system to classify all the animals on the Earth what they called Tree of Life or sometimes Phylogenetic Tree. There are 8 groups to categorise for each animal, namely domain, kingdom, phylum, class, order, family, genus, and species.

Many people especially children had problem to recognising an animal that has minor differences on physical characteristic, such as skin pattern, their body size or body part structure. Most animals that have minor differences on physical characteristic are animals from same family, for example gorilla and chimpanzee, leopard and jaguar, alligator and crocodile, turtle and tortoise, seal and sea lion, frog and toad, and donkey and mules.

Animal Recognition using Classification Technique or known as ARUCT is a system that recognising an animal using classification technique based on their physical characteristic and classify them to the type or group of animal. This project is to assist user to identify animal that they want to know by inserting the image of the animal from the existing image file. The