

CHAPTER 1

INTRODUCTION

This chapter's objective is to provide background information and justify the inquiry. It dives into the global issues before laying out the problem statement that inspired the undertaking in the first place. This chapter goes deep into the project's purpose and aims before moving on to the scope and relevance of the project. Finally, a summary of the topics of this chapter is provided.

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1.1 Background of Study

People in the modern period use a variety of technologies to make their daily lives simpler. Artificial Intelligence is one the technologies and it being used in a variety of fields, including business, finance, education, healthcare, banking, and autonomous cars. Artificial intelligence systems have the ability to learn and adapt. Artificial neural networks and deep learning artificial intelligence are quickly evolving as a result of AI's capacity to digest massive amounts of data more quicker than humans and make more accurate predictions. While a human researcher would be buried by the vast quantity of data gathered every day, AI systems that employ machine learning can quickly transform that data into useful knowledge (Ed Burns, Nicole Laskowski, Linda Tucci, 2021). Convolutional neural networks (CNN) is a deep learning technique that will help in image recognition. A deep learning neural network called a convolutional neural network (CNN) is a type of deep learning neural network. CNNs are a big step forward in image identification. They're most usually employed to examine visual imagery and are regularly involved in image recognition behind the scenes. Deep learning techniques, such as convolutional neural networks (CNNs), have attracted ecologists' interest in recent years. These technologies can automate the examination of a wide range of data, from species abundance to behaviors, and from a variety of sources, including photographs and audio (AC Ferreira, 2020).

There is also research about the business zoos in Malaysia during the pandemic Covid-19 in this chapter. The Malaysian government has given permission to cross the country for those who have complete vaccination. The announcement was made by Prime Minister Datuk Seri Ismail

Sabri Yaakob as the country's preparation facing the endemic phase in the near future. After the announcement many businesses in the tourism sector are back in operation including zoos in Malaysia. When Zoo Negara reopened after a four-month closure, visitors lined up at the ticket office as early as 7 a.m. The number of visitors on the first day of the reopening, according to Zoo Negara deputy president Rosly@Rahmat Amat Lana, went much beyond expectations. "On the first day of business, we only expected 500 to 1,000 guests." "However, we had already had over 1,000 visits as of 3 p.m.," he stated (TheStar, 2021). Melaka Zoo expects to reopen its doors to the public by the end of this week after almost ten months of closure due to the Covid-19 pandemic. "We are anticipating welcoming visitors by this Friday (Oct 1)," said Hang Tuah Jaya Municipal Council president Datuk Shadan Othman (TheStar, 2021). Many visitors will be expected to come to zoos after a long time of being locked down in their home. However, they still need to follow the standard operation procedures that have been set by Kementerian Kesihatan Malaysia (KKM) such as social distancing, always sanitizing hands and wearing masks. People need to have a sense of responsibility in every action by adhering to the Standard Operating Procedure (SOP) to curb the spread of the Covid-19 outbreak in the state (BeritaHarian, 2021).

1.2 Problem Statement

Animal knowledge is essential for us as humans who live in a world with other species. As humans, we also need to require knowledge about animals and the ability to distinguish between species. However, some people, particularly toddlers and teens, do not take this topic seriously and are still unable to distinguish between animals. Several European experts have expressed worry over the lack of awareness about common animals among today's youth. (Tuula H. Skarstein, 2019). Furthermore, there was a significant difference in species literacy between professionals and laypeople. Children's knowledge of common, native animals was notably lacking, with only 35% of the species correctly named on average (Vincent Devictor, Amanda Bates & Graeme Cumming, 2017). The reason why this situation is happening is because children did not get enough knowledge and information about animals. In order to solve these problems, building an app that can help children or adults to get more information and knowledge about animals seems like a good idea. It's because, nowadays, practically everyone, even youngsters, uses their smartphone almost 24 hours a day. According to a 2018 Pew Research Report, 45 percent of kids use the Internet "nearly constantly," while another 44 percent go online many times per day. According to the study, 50% of adolescent girls are "near-constant" online users, compared to 39% of adolescent guys. A smartphone is used by 95% of teenagers (Katie Hurley, LCSW, 2020). We

can take this matter as an advantage, by building an app that easily can recognize and get information about animals wherever or whenever they are.

Not everyone can tell the difference between species and subspecies of animals. There are some people who have difficulty to differentiate between species and subspecies. Most people are aware of the definition of a species, but when it comes to defining a subspecies, it can be a bit hazy and subjective.(Mihai Andrei, 2021). This issue can be solved by developing an application that can distinguish between animal species using images captured by users on their smartphones. To build an application that can differentiate species, the application needs to recognize what species the animals. This can be done using method convolutional neural networks (CNN), this method can train and test images from the datasets to classify the animals. A deep learning neural network called a convolutional neural network (CNN) is a type of deep learning neural network. CNNs are a big step forward in image identification. They're most usually employed to examine visual imagery and are regularly involved in picture categorization behind the scenes (Anne Bonner, 2019).

Due to the problems of a virus called COVID-19 that happens to all countries, it has made it difficult for people to visit zoos. Most of us had never heard of the phrase "social distance" until the COVID-19 outbreak. To inhibit the transmission of the coronavirus, we are now doing our best to keep social distance in the zoo. (Emily Lynch, 2020). To make sure people can safely visit zoos without worrying about the infection, making an app that can make people easily get access to information about animals without forming a crowd of people sounds like a solution to me.

1.3 Project Objectives

- To study suitable neural network methods to classify animals using images.
- To develop a system that can recognize animals and get information about them.
- To test that developed system.

1.4 Scope of Study

This initiative is primarily aimed towards Malaysians, particularly youngsters and visitors to Malaysian zoos. The datasets for the system to train and test will be specific images of mammal species in Malaysia. The datasets for this project will be trained and tested using a Convolutional Neural Network (CNN). The focus of this research will be on image classification systems. People will be able to utilize this system more easily via on their smartphones, which they can bring with them wherever they go.

1.5 Significance of Study

The importance of the study is that it can assist individuals improve their understanding of animals, particularly youngsters who are naturally curious. A youngster attempts to comprehend the world around him from the beginning (Jill Purdy, 2020). The information about the animals will be provided in the application and displayed to the users after the image has been processed. This study will also offer people new ways to connect with nature via their smartphone where they can use it anywhere and any time. Lastly, visitors to the zoo may maintain their social distance and feel safer without forming a crowd of people.

1.6 Summary

People all across the world have been cooped up for a long time, but thanks to immunizations, it is now safe to get outside and participate in outdoor activities. People should maintain a social distance, wear a mask, and use hand sanitizer to avoid contracting the COVID-19 virus, since there are still risks of contracting the virus even if they have been vaccinated. This study will make it easier for individuals to maintain their distance from one another while learning about animals in Malaysia. We also can conclude that artificial intelligence is a trendy technology nowadays that can solve as many problems.

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