AQUA ALERT : REAL-TIME OBJECT DETECTION APPLICATION FOR DAILY REMINDER TO DRINK WATER USING TENSORFLOW WITH CONVOLUTIONAL NEURAL NETWORKS

UNDERGRADUATE THESIS

Submitted as one of the requirements to obtain

Sarjana Komputer (S.Kom.)

By:

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FACULTY OF COMPUTER SCIENCE

INFORMATICS STUDY PROGRAM

CIKARANG

September 2023

PANEL OF EXAMINER APPROVAL

The Panel of Examiners declare that the undergraduate thesis entitled "**Aqua**Alert : Real-**Time Object Detection Application Using Webcam for Daily Reminder to** Drink Water **Using TensorFlow with Convolutional Neural Networks Algorithm**" that was submitted by **MUHAMMAD YOGA PRATAMA** majoring in **Informatics** from the Faculty of Computer Science was assessed and approved to have passed the Oral Examination on Saturday September 16, 2023.

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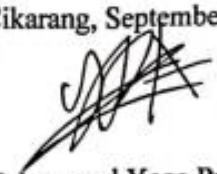

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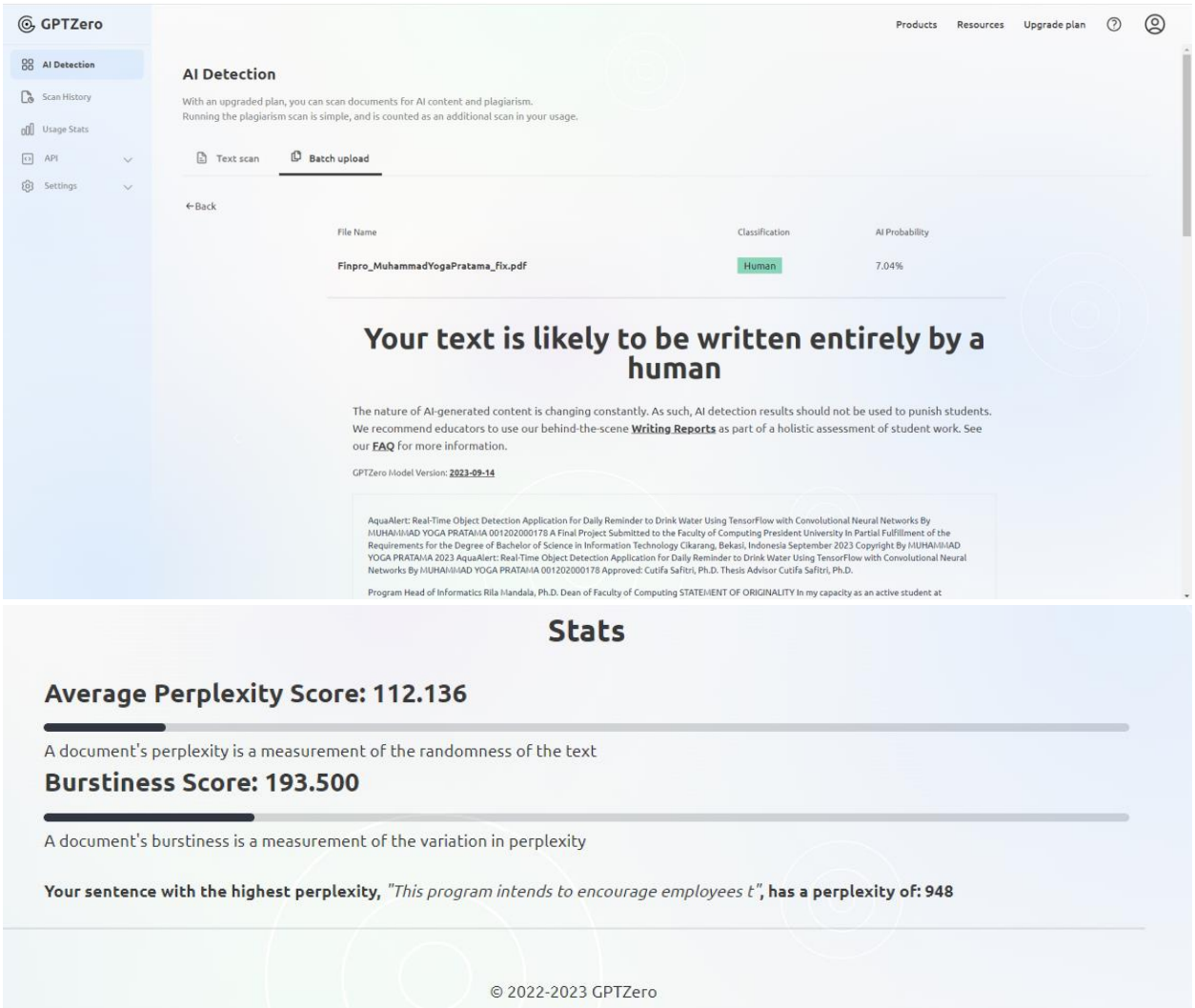

ABSTRACT

With the rise of deep learning and the improvement of computer vision, object recognition has become a popular study topic. This is mostly because of convolutional neural networks (CNNs). By using a lot of labeled data, CNNs have shown that they are good at finding and predicting things in pictures. This project uses this skill to solve a common health mistake made by office workers: not drinking enough water every day. The Ministry of Health stresses how important it is to drink enough water for your body weight. Still, many workers forget about this health tip because they are too busy with their daily work.

The main goal of this project is to set up a real-time object recognition system that will tell these people to drink water at the right time. Built on the flexible TensorFlow framework, the system is designed to be as efficient as possible, so it can work even on machines with less powerful hardware. The only thing you need to use it is a webcam, which makes it a useful and easy-to-use option.

The project was inspired by real-life experiences during an internship. It also takes into account the fact that workers often don't drink enough water because of their busy work schedules, even though they work in air-conditioned settings that make thirst worse. This mistake can lead to health problems like dehydration, heart problems, and stomach problems. The suggested system is meant to fit right into their work surroundings, reminding them to drink water regularly and helping them live a better life at work. By combining cutting-edge technology with a basic health need, this program aims to get people to drink more water, which will improve their health and comfort at work in the long run.

***Keywords**: Object Detection, Convolutional Neural Networks, TensorFlow, Real-Time, Drink Water*

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