Implementation of the Surf Algorithm to Detect Objects in Augmented Reality with the Android System

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ABSTRACT

Android is a free operating system with a good user interface. For effective and efficient application of concepts in learning using interactive augmented reality technology. Multimedia learning is a form of interactive learning. Learning can be done in class or in the form of assignments at home. The impact of interactive learning greatly influences the quality of understanding for users. Based on testing of augmented reality technology, research, analysis and analysis of interactive interface design, processes and principles are carried out through human-computer interaction and user experience. The interface design method uses the Object Oriented Programming (OOP) method and the Speeded Up Robust Features algorithm. The research results show that interactive augmented reality can provide new methods in the learning process and update learning content in the classroom. In short, this method increases student participation and enthusiasm, and increases learning effectiveness

KEYWORDS
Android
Augmented
Reality
OOP

1. Introduction

The rapid development of computer technology, the technology of interaction between humans and computers has been updated interactively. Human interaction with computers refers to the process of exchanging information between a person and a computer using a specific dialogue language and interacting with each other to accomplish a specific task. In the current interaction design process, human interaction with computers has been running and researched inside and outside the industry [1]. Augmented Reality (referred to as AR) can be considered as one of Virtual Reality (VR). Augmented reality is the use of computers to create virtual environments with feelings of vision, hearing, power, touch, and realistic movement. By going through multiple sensor devices in a virtual environment to achieve direct natural interaction between the user and the environment. It can simulate an advanced human and computer interaction interface environment using computers based on interactions and concepts. Users can not only experience the deep feelings experienced in the objective physical world through the virtual reality system, but can also penetrate space, time, and other objective boundaries, and experience experiences that cannot be experienced in the real world. Augmented reality provides a method of merging the

virtual world with the real world. It was one of the important development modes of the era of 3D interactive interfaces. In this study, it was during the era of human-computer interaction that the authors attempted to use augmented reality technology as a starting point to analyze the requirements of interactive interfaces based on augmented reality [2]. From the aspects of human and computer interaction, user experience, visual communication, emotional design, and other aspects, the design, content, flow, and principles of interactive interfaces are studied and analyzed to summarize interactive interface design methods based on augmented reality [3]. By using augmented reality technology in the field of student education as a background, interactive interface design methods are practiced and the results of the research are tested. In interface design that aims to explore and start, so that users can learn from general development, and continue to deepen interface design in computers in the fields of education, government, scientific fields, and other companies [4]. In this study, the creation of interactive 3D augmented reality applications based on android based learning Application of the SURF Algorithm for Object Detection in Augmented Reality

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In its development, the Android operating system has experienced several changes and improvements. And the most interesting thing is the output version of Android which are named after food. According to Teguh Arifianto (2011: 1), Android is a mobile device On the operating system for mobile phones based on Linux. According to Hermawan (2011: 1), Android is a growing Mobile OS (Operating System) in the midst of other OS that is developing today. Other OS such as Windows Mobile, i-Phone OS, Symbian, and more. However, this existing OS Runs by prioritizing core self-built applications without looking. considerable potential of third-party applications. Therefore, the existence of limitations of third-party applications to get the original data of the phone, communicate between processes as well as the limitations of third-party application distribution for their platform. Based on the above opinion, conclusions can be drawn That Android is an emerging Linux-based operating system in the middle of other OS. Nazrudin safaat H (2012: 1) states that android is a Operating system for Linux-based mobile devices that includes the system Opreasi, middleware and applications. Android sets up an open platform for people developers to create their applications. Nazrudin safaat H (2012:3) states that Android is hailed as "The first complete, open and free mobile platform" Android is an open source operating system for mobile devices and a corresponding open source project led by Google. This site and the Android Open Source Project (AOSP) repository offer the information and source code needed to create custom variants of the Android OS, port devices and accessories to the Android platform, and ensure devices meet compatibility requirements that keep the Android ecosystem a healthy and stable environment for millions of users.

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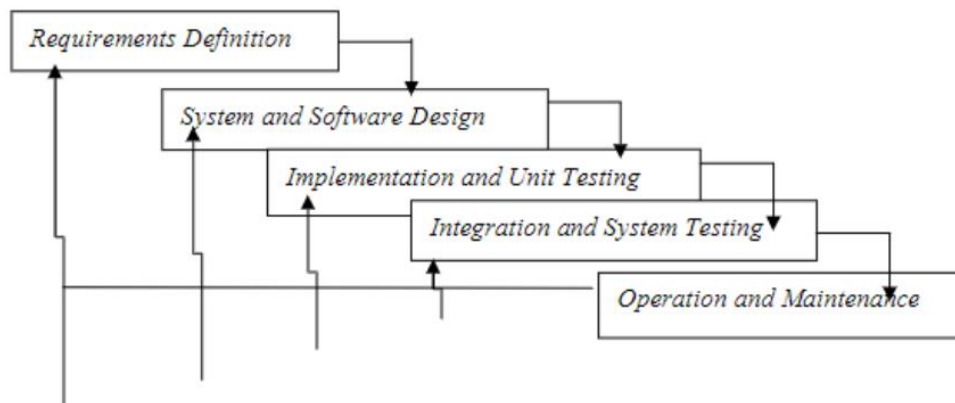
2. Method

2.1 Model Waterfall

Figure 1. Model Waterfall

In the first stage of this Waterfall model, the process of finding needs (Requirements Definition) aims to find out the nature of the program to be created. The author collects data on how the process of solar and lunar eclipses, the rotation of objects, shadows, light and others. As well as the functions needed such as User Interface, voice output that will explain the process of how the event can occur and others. 3D object processing software, JavaScript programming language, C# will be needed in making this m-learning application.

The second stage is the creation of a system design before the coding process begins, this stage can be started from creating objects that will be displayed in three-dimensional form, preparation of sound output, user interface, these existing features will help users in using the application. Implementation and Unit Testing In the third stage of this waterfall, the design must be transformed into a form that can be understood by machines, namely into a programming language through the coding process. This stage is the implementation of the design stage. Integration and System Testing The fourth stage is the process of testing applications from the needs of each previous stage to ensure there are no more errors or bugs in the application created. Operation and Maintenance Improvements are needed when the application experiences errors that were not found before as well as application development such as the addition of new features, Object-oriented programming is used in writing this time because it has many advantages in handling complex tasks. Programming using object-oriented languages follows object-oriented concepts especially in terms of flexibility, usability, and ease of maintenance. This method will organize the software as a collection of objects containing data and operations performed on them.

3. Results and Discussion

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4. Conclusion

This study details the construction and output of two machine learning algorithms that are designed to classify samples into binary gender categories. Samples consist of popular names in AmE and the Glasgow norms, a list of English words that have been assigned psycholinguistic scores. The classification accuracy scores reveal that—somewhat unsurprisingly—gender is more gender is encoded in AmE. The lifecycle of an Android application is managed by the system, based on user needs, available resources, and so on. For example, a user wants to run a web browser, ultimately the system will determine how to run the application. The system plays a role in determining whether an application is run, paused or stopped altogether. If the user is currently running an activity, then the system will give top priority to the application. Conversely, if an activity is not visible and the system requires more resources, then the low-priority activity will be closed. Android runs each application in a separate process, each of which has its own processing virtual machine, thereby protecting the memory usage on the application. In addition, Android can control which applications deserve to be a top priority. Hence, Android is very sensitive to the lifecycle of apps and their components. Understanding Android is a Linux-based operating system that used as a hardware resource manager, both for mobile phones, smartphones as well as tablet PCs. In general, Android is a platform that Open Source for developers to create their applications itself is used by various mobile devices. The first phone that Using the Android operating system is the HTC Dream, which was released on October 22 2008. At the end of 2009 it is estimated that there will be at least at least one in the world 18 types of cell phones that use Android. Since his presence on March 9, 2009, Android has come with version 1.1, which is an operating system that has Equipped with aesthetic updates to the application, such as alarm clock, voice search, messaging with Gmail, and email notifications.

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