

UNIVERSITI TEKNOLOGI MARA

**MYEYEWEAR – MOBILE COMMERCE
APPLICATION WITH AUGMENTED REALITY
FOR EYEWEAR FITTING**

MUHAMMAD SOLEHIN BIN SUHALWI

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ABSTRACT

The development of mobile communication technology and the m-commerce sector has led to a rapid growth of mobile commerce applications in recent years. However, most of m-commerce platform does not have features of try the product in person before making a purchase. With the use of augmented reality technology, users can have an immersive shopping experience. The objectives of this project are to identify the requirements of the MyEyewear mobile application, to design the MyEyewear mobile application and to develop the MyEyewear mobile application. This project is expected to be beneficial for the public users who want to purchase eyewear online. MyEyewear is an Augmented Reality app that allows users to virtually try on eyewear before deciding to buy the eyewear. This application has features such as login, add to cart, view order history, search product and delete order. This app also enables the users to fit the eyewear on their face virtually with the implementation face detection of Augmented Reality through the try-on feature. This project used Mobile Application Development Life Cycle (MADLC) as a methodology approach to develop this app. The technique utilized in this project is the face detection augmented reality. This project will project virtualized eyewear on the user's face by pointing the smartphone's camera to the face with face tracking method. It also can increase the user satisfaction where they can access and wear the eyewear directly on their mobile phone using the mobile camera with the AR technology on the application. The testing result for the application involved 10 users which the score of 76.6 based on the System Usability Scale (SUS). Future recommendation is to improve the machine learning in detecting the user face which to precisely detect all different type of human faces which to make the augmented reality features accurate.

Keywords: Online shopping, Mobile commerce, Marker-based Augmented Reality, Mobile Application Development Lifecycle (MADLC), Virtual Try-On

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CHAPTER 1

INTRODUCTION

An outline of this project given in this section. This chapter includes project background, problem statement, scope, and project significance.

1.1 Project Background

The development of mobile communication technology and the e-commerce sector has led to a rapid growth of mobile commerce applications in recent years. (Yassierli et al., 2019). The rapid expansion of mobile commerce has signalled the arrival of fresh ideas in the marketplace. Mobile commerce, often known as 'm-Commerce,' is a type of transaction in which a user can purchase and sell items, request services, transfer ownership or rights, and transact and transfer money via a wireless internet connection on their mobile phone (Sandhu, n.d.) 2012. Mobile commerce refers to wireless electronic commerce conducted using a device for example a mobile phone or a Personal Digital Assistant (PDAs), smart phone (Sandhu, 2012).

Customers who are satisfied with a variety of business and technical solutions is a top priority in today's commerce offering. To change in-store shopping experiences, businesses spend and experiment with various ways to merchandising and product promotion (Meegahapola & Perera, 2017). Due to the rapid advancement of Internet technology, clients' purchasing habits have changed. According to a study conducted by Taiwan's National Development Council, the number of persons purchasing online has grown. Augmented reality has recently been added to online purchasing platforms (Wang et al., 2015).

Augmented Reality (AR) refers to a set of technologies that combine real-world and virtual data to enhance a certain experience (Lamantia,2009). Retailers have begun to use Augmented Reality (AR) to allow shoppers to preview things in their own location before making a purchased (Vazquez et al., 2021). According to