

INTISARI

Pandemi COVID-19 berdampak buruk bagi sektor perjalanan dan pariwisata. *Alian Butterfly Park* adalah sebuah tempat wisata berbentuk taman penangkaran kupu-kupu yang berlokasi di Kabupaten Kebumen, Jawa Tengah. *Alian Butterfly Park* didirikan sebagai upaya konservasi dan sarana edukasi kupu-kupu bagi masyarakat. Dampak pandemi juga dirasakan oleh *Alian Butterfly Park* yang menyebabkan penutupan sementara *Alian Butterfly Park*. Hal tersebut mengakibatkan tidak terlaksananya fungsi edukasi yang dimiliki *Alian Butterfly Park*. Pengadopsian teknologi *virtual reality* dan *augmented reality* diprediksikan akan semakin relevan terhadap pemulihan sektor perjalanan dan pariwisata pasca pandemi COVID-19. Kedua teknologi tersebut mampu menghantarkan pengalaman interaktif yang dapat menjamin keamanan wisatawan dengan mengurangi mobilitas yang tidak diperlukan. *Capstone project* ini mengusulkan solusi berupa pengembangan aplikasi *mobile* yang memiliki fitur pembelajaran daur hidup kupu-kupu dan buku koleksi berbasis *augmented reality* untuk menyelesaikan permasalahan yang dihadapi oleh *Alian Butterfly Park*. Aplikasi juga memiliki fitur virtual tur yang terintegrasi dengan buku koleksi. Aplikasi dikembangkan menggunakan game engine Unity dengan target sistem operasi Android. Fitur *augmented reality* dikembangkan menggunakan *framework* AR Foundation dari Unity dengan mengimplementasikan teknik *markerless augmented reality*. Metode pengembangan aplikasi dilakukan menggunakan metode SDLC *agile*. Hasil pengujian metode *black box* dengan total 25 skenario pengujian pada fitur *augmented reality* bernilai 92% berhasil. Hal tersebut dikarenakan adanya temuan *bug* yang mempengaruhi tampilan aplikasi.

Kata kunci: *Alian Butterfly Park*, aplikasi *mobile*, *markerless augmented reality*, aplikasi pembelajaran

ABSTRACT

The adoption of virtual reality and augmented reality technology is predicted to be increasingly relevant to the recovery of the travel and tourism sector after the COVID-19 pandemic. Both technologies are capable of delivering interactive experiences that could ensure the safety of tourists by reducing unnecessary mobility. This Capstone Project proposes a solution in the form of developing a mobile application that has a butterfly lifecycle learning feature and a butterfly collection book, both of which implement augmented reality technology, to solve the problems faced by Alian Butterfly Park. The application also has a virtual tour feature that is integrated with the butterfly collection book. The application was developed using the Unity game engine and targets the Android operating system. The augmented reality feature was developed using the AR Foundation framework from Unity by implementing markerless augmented reality. The application development method is carried out using the agile SDLC method. Black box testing with a total of 25 test scenarios on the augmented reality feature reveals that 92% of the test scenarios are successful. This is due to the discovery of a bug that affects the appearance of the application. The COVID-19 pandemic has had a negative impact on the travel and tourism sectors. Alian Butterfly Park is a tourist attraction in the form of a butterfly breeding garden located in Kebumen Regency, Central Java. Alian Butterfly Park was established as an effort to conserve and educate the public about butterflies. The impact of the pandemic was also felt by Alian Butterfly Park which led to the temporary closure of Alian Butterfly Park. This resulted in the non-implementation of the educational function of Alian Butterfly Park.

Keywords: Alian Butterfly Park, mobile app, markerless augmented reality, educational app