

Abstract

The Majestic Yosemite Hotel, formerly known as the Ahwahnee, is a National Historic Landmark located in Yosemite National Park, California, USA. Built in 1927, the hotel attracted rich and wealthy individuals to help gain financial support for the National Park Service idea of protecting wild spaces for future generations. To this day, the hotel stands as one of the National Park Service's most historic lodging units, providing luxury accommodations and services to park visitors. In November of 2016 Yosemite Hospitality, Yosemite National Park's Concessionaire requested a mobile application to educate visitors on the cultural and historical significance of the hotel to support the goals of the Long Range Interpretive Plan. Yosemite Hospitality was the client for this project, and the application was developed in direct consultation with Yosemite Hospitality's Interpretive Services Department from November 2016 until August 2017. Several indoor positioning technologies and Augmented Reality services were tested to deliver educational content based on user mobile device locations and camera orientations. The processes tested the Anyplace indoor positioning service, IndoorAtlas indoor positioning service, BlueCats beacon services, Vuforia Augmented Reality services, and the gaming engine Unity. Testing and development occurred on both Android and iOS devices with development in Javascript, C#, Swift, and Objective C. As part of this thesis work, a historical model with digital furniture scans was also completed to preserve the current conditions of the hotel's original furniture. These scans were based on the Structure Sensor manufactured by Occipital. This thesis documents the development and testing of the Majestic Virtual Tour Application and the historic furnishings model built for the Majestic Yosemite Hotel in fulfillment of the Yosemite Hospitality project.