

Light & Shadow App: A photo lighting workshop in Augmented Reality

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Abstract. The App Light and Shadow is a Portrait Lighting Workshop in Augmented Reality. The App allows students to virtually step into a full-size photo lighting studio and study the placement of studio lights for portrait photography in three dimensions. The App was developed during the covid-19 restrictions of 2020 and 2021 when in-person learning was not possible. The goal of the app is to recreate the photo studio learning environment and allow students to study the placement of lights in an interactive and immersive format. Students can use the App with a smartphone or tablet to view lighting setups from different points of view and visualize in three dimensions the effect of lighting on the portrait.

Keywords: virtual learning, augmented reality, photography

Introduction

During the pivot to remote learning brought on by Covid -19 restrictions and lockdowns students at all levels faced challenges such as isolation, disruption of access to learning spaces, and the need to learn courses at home. Traditionally, the photography classes I teach at university level include a section on studio lighting for portrait photography taught in person in a photo studio. I developed the Augmented Reality App Light & Shadow to give my students the option to use their iPhone or iPad to visualize the entire portrait studio environment as a life-size space where they can study virtually the interaction of light placement in relation to the portrait subject.

1.1 The In-person Learning Environment and Visualization in Augmented Reality

The in-person learning environment of the photo studio provides a space where students can see the placement of lights and see the effect of different light setups on the portrait subject directly. The photo studio allows students to see the entire portrait lighting setup and move around it to study it from different angles. The photo studio also lets students

interact with the lights directly and try the setups themselves. The ability to see the entire scene and the relationship between the lighting and the person being photographed is useful to judge distances and the appropriate light intensity needed to recreate the same effect in their own photography. The in-person learning environment provides a descriptive, immersive, and interactive learning space, and Augmented Reality offered a way of introducing some of the immersive and interactive aspects in the home learning environment.

1.2 The Problem

Starting in March 2020 the pivot to remote learning brought on by Covid -19 restrictions and lockdowns meant that students in Canada, like most around the world, faced exceptional circumstances with a sudden shift to learning from home. The introduction photography classes I teach at university level include a section on studio lighting for portrait photography - taught in person in a photo studio setting. With the turn to study at home, students relied on video lessons and written online tutorials. Based on the results students achieved, these online tools were mostly successful in conveying and describing photo techniques and principles for home learning.

For certain topics, such as studio lighting for portrait, the types of questions students asked suggested that being able to see the lighting setups in the round (like it would be possible in the classroom) would prove useful to clarify the lessons and aid in understanding the techniques.

1.3 Learning with a virtual photo studio.

Making use of Augmented reality and smartphones and iPads as teaching tools, the Light and Shadow App provides a learning option that aims to recreate some of the immersive and interactive aspects of in-person learning for students learning at home. The App uses 3D objects, a 3D scanned portrait model, in an Augmented Reality virtual space. Using the App with a smartphone or tablet, students can step into a full-size portrait lighting studio workshop anywhere they are. Users can learn about light placement for portrait photography by physically moving around the virtual portrait studio including the subject, the lights, the reflectors, and the backdrop. There are nine lighting setups for study and each scene includes a text panel describing the light set up and the typical use of it in portrait photography. The app is meant as a complement to the studio lighting lessons at introductory and intermediate level photo classes.

Originally developed for university photography students at Kwantlen Polytechnic University in Surrey, BC. Canada, the Light and Shadow App is now available in the Apple App Store for free to everyone with an interest in photography and portrait lighting.

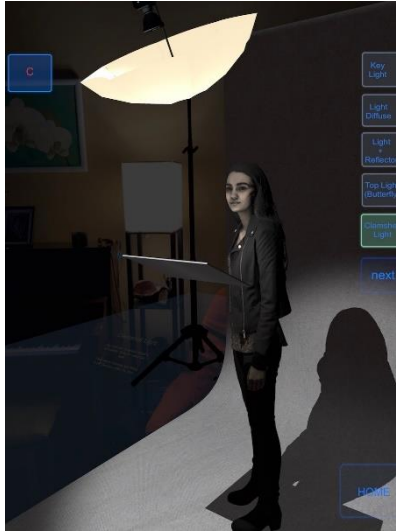


Fig. 1. Light & Shadow Augmented Reality App. Black and White mode. Screenshot – iPad view.



Fig. 2. Light & Shadow Augmented Reality App. Color scene mode. Screenshot - iPad view in a home location.

References

1. Light & Shadow App in the App Store for IOS. <http://appstore.com/lightandshadow>
2. Project web site: <https://www.pm-ar.com/light-shadow.html>