EKKO
AR Camera

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By Ruoda Yuan

Executive Summary

Ekko is an AR-powered camera that allows you to record and save videos and live photos with the virtual world. Many applications from social media to e-commerce now feature AR, but they all offer them in self-contained experiences that are not savable to the user. With Ekko, users can produce videos in AR and save them to their local device/iCloud so that they can edit them later or share them to the world at their convenience.

The app features two shooting modes: 1) a 10-second video mode and 2) a 3-second live photo mode. These formats were chosen to help narrow down the user's options and guide their creative direction. While recording, a loading/progress ring indicator surrounds the record button to provide feedback to the user on how much recording time is left. The video or live photo is then saved to the user's photo library, which means also their iCloud based on settings.

3 different AR objects are provided in the app - a fighter jet, walking fox, and seeing-eye drone. Swiping left or right on the screen switches between the AR models. The animations for each model are programmatically generated using a combination of SCNAnimationPlayer and SCNAction objects on the SCNNode child of the main .SCN object.

The app also records the audio and synchronizes it to the video in the output. The app was a major challenge for me since I wanted to deviate away from the standard stuff we learned in class and explore a major interest of mine, mixed reality technologies. AR is not only a new technology for the world, but even Apple's AR frameworks such as ARKit, SceneKit, RealityKit, and SpriteKit are very young and still evolving. The fact that there is no built-in way to record AR scenes was something I wanted to solve (even developers used to programmatically code screen recording in order to accomplish this).

In addition, the app lets me dive deeper into concurrency programming by incorporating many multithreaded tasks in the application. There are 6 explicitly declared dispatch queues alone.