# MobileEyes
**EE267 Project Proposal**
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## Description

As the fields of drone technology and virtual reality advance, we find ourselves faced with the exciting prospect of how these two can be merged. One exciting prospect lies in expanding our view of the world through drones; that is, integrating video feedback from surveyor drones into a virtual reality headset, making a real-time VR experience possible. Imagine drones all over the world that you can inhabit and explore with, and that allow you to feel like you are flying around the wonders of the world without leaving home. Technologies like Google Maps allow people to easily view parts of the world through satellite, but the sense of adventure and presence just isn't there. If these parts of the world can be seen through the eyes of a drone, we believe that this will create a sense of presence that will mirror what a person would experience had they have actually visited that location; research done by Jeremy Bailenson's lab using "The Pit" has shown that people do feel a heightened sense of danger and presence in VR as opposed to 2D platforms, suggesting that a viewing experience through VR could feel very real to users. This is especially important for clients who are otherwise unable to travel, due to disability, illness, or lack of resources; certainly, renting drone time will be far less costly than traveling to that location, which involves airfare, hotel, and food costs.

The applications for this drone-VR integration are also evident more close to home. When ordering groceries through pick-up services, you can send your drone to make sure you are getting the best possible items; when your child goes out to play, you can supervise them and feel more comfortable in their safety while at work or otherwise indisposed. You can check in on relatives, view local concerts, attend conferences; and do all of these from home. Our drone-VR tech, denoted MobileEyes or Mobilize, will enable a far-reaching set of experiences as well as provide more everyday convenience to users, not to mention further applications in commerce, military, and education. See the world, through mobile eyes.

## Materials

- Phantom 3 Drone
- Smartphone
- Google Cardboard View

## Plan of Implementation

There are two ways we are considering implementation:

1. Use a Phantom 3 and just transmit its camera feed to the phone
2. Use a Phantom 3 and 2 Go-Pros, transmitting the feeds of the Go-Pros and rendering in stereo

Assuming we follow the first route (although both are still under consideration), building this project involves a number of milestones that need to be accomplished. They are as follows:

1. **Capture the video feed of the drone with the smartphone** (Go-Pros, if we go with that option)
   The Phantom 3 already transmits its video feed to a mobile app through wi-fi. We need to determine how to do this outside the scope of the app.
2. **Render the video feed into two screen side-by-side**
3. **Implement distortion for the rendering** (and stereo if we go with the Go-Pro option)
   These parts will involve processes similar to the 4rd assignment.
4. **Build a model for a cockpit to surround the view in VR to give the illusion of a cockpit**
   We hope that adding this model around the view will reduce the motion sickness associated with fast movement in VR while the subject remains stationary.