

**Vision Statement**  
**UCSB 360**  
**Team Epsilon**

**Introduction**

We aim to explore applications of computer vision and augmented reality on Android-powered mobile devices. Our goal is to create an experience that combines augmented reality with social media.

**Project Description**

We have determined four primary features which we are interested in exploring and including in our application. They are listed below in order of importance. We also have a backlog of minor features which we hope to also develop if time permits.

**Graffiti**

We aim to create a platform where users can create and share content, such as text or drawings, in an augmented world. The content is added to a database and thus the virtual environment that is viewable through the app.

**Building Info and Events**

When a user of the application views a recognizable structure or building, the name of the building is overlaid on the building, in addition to two buttons which read "Hours" and "Events". By clicking on the buttons, corresponding information is rendered on top of the building in the form of text.

**Navigation**

We intend to create a localised navigation system designed specifically to make it easier for guests and students alike to make their way around campus. It will implement augmented reality to create a 3D "indicator" in the distance showing the user which way to travel to reach their goal.

**Posters and Advertising**

In this feature we hope to add the ability to post images in the virtual world, and render them on the mobile devices. This will enhance many of the other features, such as adding the ability to post image graffiti, but it will also open the prospect of distributing organizations posters, and selling advertising space in certain restricted areas.

**Motivation**

**Graffiti**

Graffiti is the main feature of this app. We want the campus to feel interactive, social, and closer as a community, with the help of augmented reality. The UCSB campus will become a place to share your drawings and ideas with your friends. In addition, other users can also share their ideas in the same setting, bringing social networking out from computer screens and onto the real world.

### Building Info and Events

This feature will diminish the time and effort required of a user to acquire basic information regarding the buildings around them, all without the need to use dedicated websites that can be hard to read and navigate, and even harder to find. One minor feature on our backlog would allow users the option to purchase tickets or confirm attendance to events when they look at the building with their phone. Also, we will allow users to view the menu of all of the dining commons when they view any of the buildings through the app. This will greatly reduce the time user spends looking for a place to eat. With this feature, it will be much easier for users to attend events they like, and they might discover more events they weren't previously aware of.

### Navigation

The purpose of this feature is to help visitors and freshmen find locations such as specific classrooms or entire buildings on campus. It may also come in handy for veteran students who are trying to find the best path from one class to another. Essentially, it will be an interactive GPS incorporating both 3D and 2D elements, built for the UCSB campus. Implementation of augmented reality will allow not only horizontal but vertical distance to be indicated, thus allowing users to find their destinations among the various levels of buildings more easily and intuitively.

### Posters and Advertising

The focus of this feature is to allow campus organizations to post upcoming events around the campus for free. In addition some areas will be restricted and made available to advertisers for a fee. When the user points their mobile device at a specific wall or building, the user can see the ads and the event posters posted by these school organizations. With this feature, it will be easier and cheaper to advertise various products and events without wasting paper.

### Implementation

UCSB 360 will be a mobile application built for Android devices. Our application will utilize Qualcomm's Vuforia SDK. This API will handle most target management and computer vision functionality. We will write our application in Java using the Eclipse IDE. Additionally, Qualcomm has provided our team with five HTC Desire HD smartphones to aid in development and testing. It is important to note that we aim to make all of the features discussed available to users through the live stream of their mobile device cameras, rather than through uploading photos.

### Goals

Our vision is to create an application which meets two primary requirements. First, we aim to create an application which will see recurring use from our customers. We hope that there is a moment in our users lives when they have a need which can be satisfied by the use of our application. Second, we aim to create an exciting application that will prompt users to share their experiences with their friends, and recommend that they download the application. Meeting these two goals should result in the recurring use and spread of UCSB 360.