This chapter covers the future of casual gaming: augmented reality (AR). It is coming, my friends, and from what I have seen of PS Vita and other mobile gaming portables, it is the future of casual gaming in mobile. This chapter also explores the next big wave coming to your living room: Internet TV (Google TV, to be precise).

There is a lot of hype surrounding augmented reality, but what is it and how can you build games around it? Furthermore, what kinds of games are good for it? These are some of the questions I will answer in this chapter. Let’s get started.

What Is AR?

“AR” is the term used to describe the software tools used to overlay virtual imagery onto the real world. For example, an app could render a virtual house on top of a kitchen table. On a mobile device, AR uses the video camera and OpenGL to project virtual objects on top of the video, as shown in Figure 9-1.
There are three elements illustrated in Figure 9-1.

- **Marker:** This is a real world object (usually a printed card with some kind of pattern) that is used to render the virtual object. As the marker moves in 3D space so does the virtual object bound to it.

- **Phone or device:** The mobile device with a video camera where all the action takes place.

- **Software:** This may include the computer vision algorithms that calculate the real camera position and orientation relative to the physical marker in real time.

AR is in its infancy in the mobile world, making it virgin ground for a wide range of applications. Some of the applications today include?

- **AR browsers:** Here is where all the hype got started in mobile. An AR browser is a neat application that lets you use your camera to render geo-coded information on top of video in real time. For example, you could be walking along in the city looking for your favorite restaurant. Instead of searching for it on a map, you could start the video feature in your AR browser, and as you move around, the browser would render information about your specific location such as points of interest, hospitals, restaurants, etc. With a simple click, you could select the restaurant, make a reservation, and take a look at the menu.