Applications of Augmented Reality

Augmented reality (AR) is a reasonably recent, but still large field. It does not have a very large market share, and most of its current applications are just out of prototyping. This makes AR a very anticipated and untapped niche. There are very few applications that implement AR technology in the Android Market right now. This chapter describes the real-world applications of AR, gives examples (along with images where possible), and discusses whether it is now possible to implement AR in the Android platform.

Augmented Reality vs. Virtual Reality

Augmented reality (AR) and virtual reality (VR) are fields in which the lines of distinction are kind of blurred. To put it another way, you can think of VR as the precursor to AR, with some parts overlapping in both. The main difference between the two technologies is that VR does not use a camera feed. All the things displayed in VR are either animations or prerecorded bits of film.

Current Uses

Despite being a relatively new field, there are enough AR apps available to allow us to make categories out of them. Here we take a look at what has already been implemented in the world of AR.
Casual Users

There are hundreds of apps that use AR that are meant to be used by the average person. They come in many types—for example, games, world browsers, and navigation apps. They are usually using the accelerometer and the GPS to obtain location and the physical state of the device. These apps are meant to be enjoyed and useful. One of the winning apps of the Android Developer Challenge 2 was an AR game: *SpecTrek*. The game uses your GPS to find your location and then prepares ghosts for you to hunt in surrounding areas. The game also has a map on which ghosts are displayed as markers on a Google map. During gameplay, the ghost is added as an overlay over the camera image.

On the other side of things, navigation apps have code to recognize roads and turnings, and mark out the route with arrows. This process is not as easy as it sounds, but is often done today.

In the end, world browsers are probably the most complex of all the casual apps that are widely used. They need several back-end databases and also need a lot of on-the-spot information from several sensors. After all, browsers still have to put everything together and display a set of icons on the screen. Almost every app you see on the market, whether AR or not, looks simple at first sight. But if you delve into the code and back ends, you will realize that most of them are in fact, very very complex and take a long time to create.

The best examples of casual AR apps are *SpecTrek* and *Wikitude*. Together, these apps make use of practically everything you can use to make an AR app on the Android platform. I highly recommend that you install them and become familiar with the features of AR on Android.

Most apps in this category can be implemented on the Android platform. In several cases, they do not even use all the sensors. Some of them can get quite complex. Figure 1-1 and Figure 1-2 show screenshots from *SpecTrek*. 