**VR User Manual**

**EyeSim Virtual Reality for Oculus Go**

EyeSim supports VR through Oculus Go, allowing the user to see robots interacting close, can interact inside the scene (seen as an obstacle by the robot) and can ride on one of the robots. Virtual Reality headset is used for rotating and looking around the scene is done through movement and rotation. Oculus Go contains a headset and a controller as shown in figure-1. The controller contains four buttons namely trigger, touchpad, back button and home button.



*Figure-1 Oculus Go VR Headset*

The use of Oculus Go in the EyeSim is to view the movement of robots through virtual reality cameras. While in virtual reality mode there is no interaction with the user interface (i.e., no placing or moving objects).

**Getting Started**

**Installation of EyeSim VR for Oculus Go**

First, make sure you have an up-to-date Oculus Go device and download the EyeSim from the Oculus Go App store (Currently still in work- may not end up on the App store) or you can download the latest Oculus Go EyeSim version from following links:

[http://robotics.ee.uwa.edu.au/eyesim/ftp/](http://robotics.ee.uwa.edu.au/eyesim/ftp/%20) (main build)

or

[http://robotics.ee.uwa.edu.au/eyesim/ftp/dev/](http://robotics.ee.uwa.edu.au/eyesim/ftp/dev/%20) (development build)

Make sure you have paired your Oculus Go to your mobile using the App. Then you need to sideload APK to the headset using ADB (Android Debug Bridge). To do this you have to turn Developer Mode on for the Go by opening the App on the phone, click the paired Oculus Go headset at the top and select **More Settings > Developer Mode** and then toggle **Developer Mode** ON. Next, install ADB which allows you to run APPK install command.

**For Windows:**

* If you don’t have Android Platform Tools in the system, then you need to download and install. Then, download ADB drivers from the oculus website, unzip the downloaded file and right-click on the .inf file and select install.
* Search for the CMD in the Start Menu, right-click and open as an administrator. To test whether the installation was successful or not type the following command.

|  |
| --- |
| adb help |

**For Mac:**

* Open Terminal and install Homebrew by typing the following command:

|  |
| --- |
| ruby -e "$(curl -fsSL https://raw.githubusercontent.com/Homebrew/install/master/install)" |

* Install Android Platform Tools (which contains ADB), using Homebrew by using the command below:

|  |
| --- |
| brew cask install android-platform-tools |

* You can test whether the installation was successful by using the command:

|  |
| --- |
| adb help |

After ADB is installed then you can install APK’s.

* Connect the headset device to your computer using a USB cable.
* Check whether the device recognizes the ADB or not using the command:

|  |
| --- |
| adb devices |

Note: 1) If you don’t see any devices listed in the output then turn off the device and disconnect the USB cable. Again, power up the device and connect the USB cable and then check by running the command.

2) When the device ID show up in the output with unauthorized then put the device on and give permission.

* Run the installation command

|  |
| --- |
| adb install /path/to/your.apk |

To run App

* Put on your Oculus Go headset.
* Click on the **Library** in the bottom menu and navigate to **Unknown Sources.**
* Find the app in the list and run it.

Note: If in case Unknown Sources is not visible, click on the settings in the bottom of the screen and change the View to Developer Mode.

**Oculus Go Menu for EyeSim**

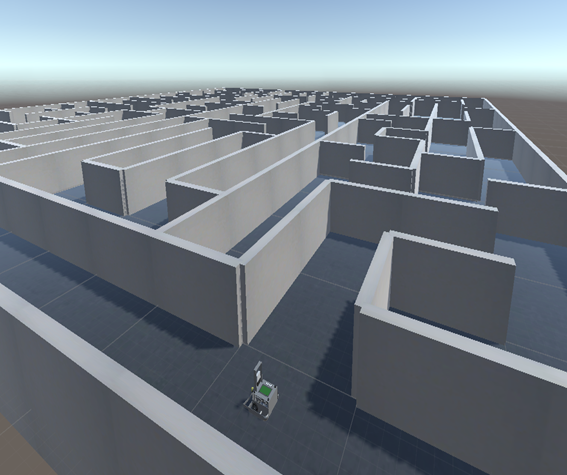
When the EyeSim application is launched, a window is displayed as shown in figure-2. For the EyeSim three minigames were developed namely Maze Escape, Penalty Shootout and Submarine minigame. With the help of the headset controller you can select the game to play, you can resume or quit the game and can reset the viewpoint.



*Figure-2 EyeSim VR Demo for Oculus Go*

* **Maze Escape**

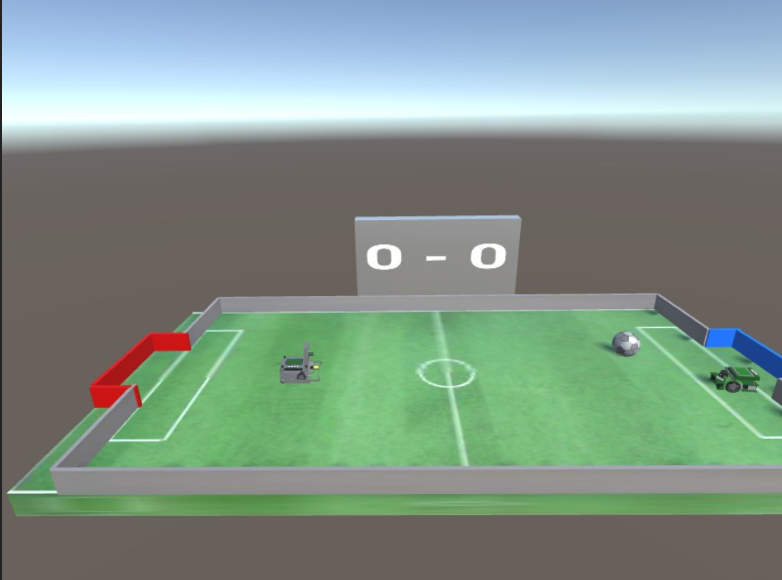
Maze minigame is built for VR and is a fun game of pathfinding. There are different sizes of maze, but the default value is 36cm. The Labbot is placed in the bottom left position, facing up as shown in figure-3. The Oculus Go controller has touchscreen pad with the help that button you can play with the Labbot from the start and finding the path is the goal.



*Figure-3 Maze Minigame*

* **Soccer Minigame / Penalty Shootout**

Soccer game is designed for virtual reality. The Labbots can then interact with the ball by pushing and kicking the ball to make a goal. With the help of controller touch surface, you can operate the Labbot making the goal.



*Figure-4 Soccer Minigame*