



INSTITUTO SUPERIOR TÉCNICO  
Universidade Técnica de Lisboa

# Rasteirinho controlled by Android

## User Manual

**Automation Systems Course 2011/2012**

**Master Degree (MSc) in Information Systems and Computer Engineering**

## **Accessing the main menu:**

Once the application *AndroidRasteirinho* is loaded and running the menu shown in figure 1 will appear on the screen:



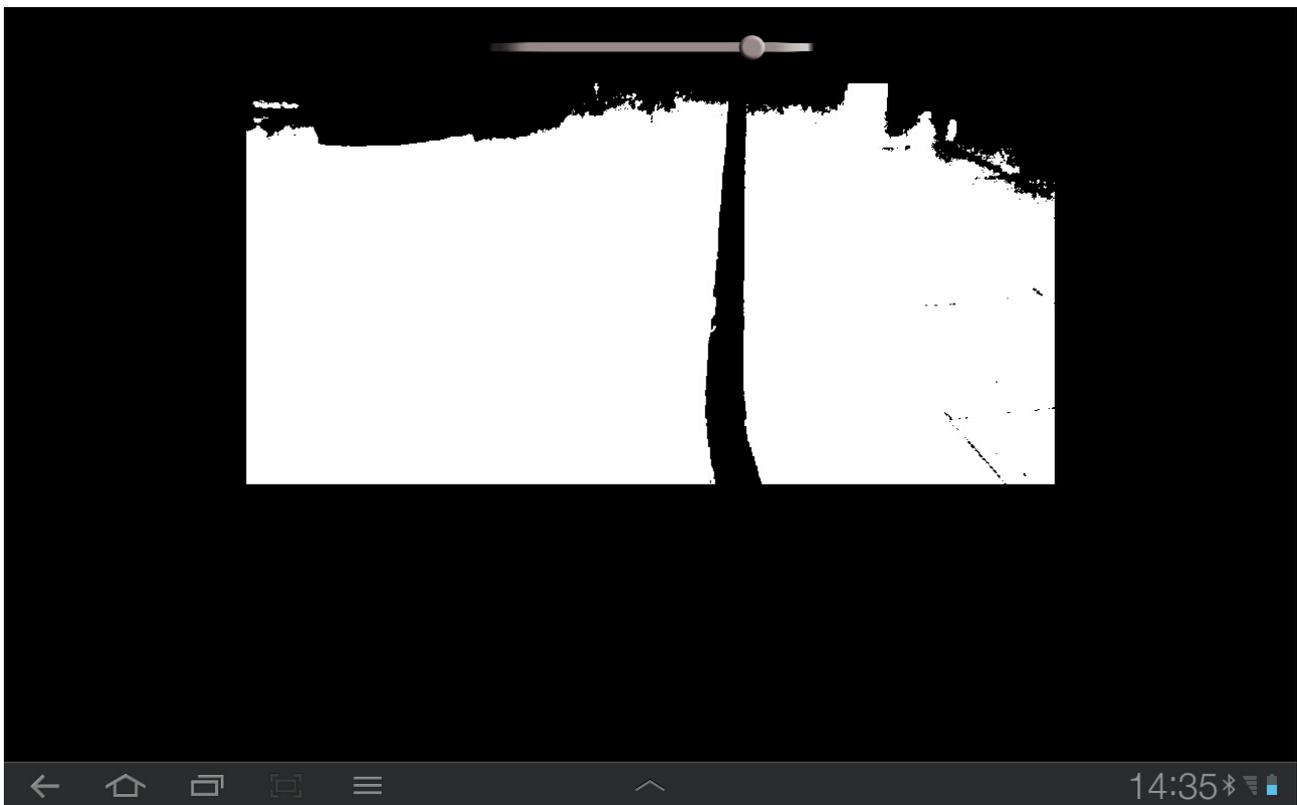
*Figure 1: Main menu of the application*

### **Option “Preview B/W”**

- By loading the option “Preview B/W” the application will present on the screen a preview of the content visualized by the webcam.
- The preview shown is black and white and it has been applied a threshold. The initial value for the threshold is set to 100, but it can be changed with the option "Set Threshold".

## **Option “Set Threshold”**

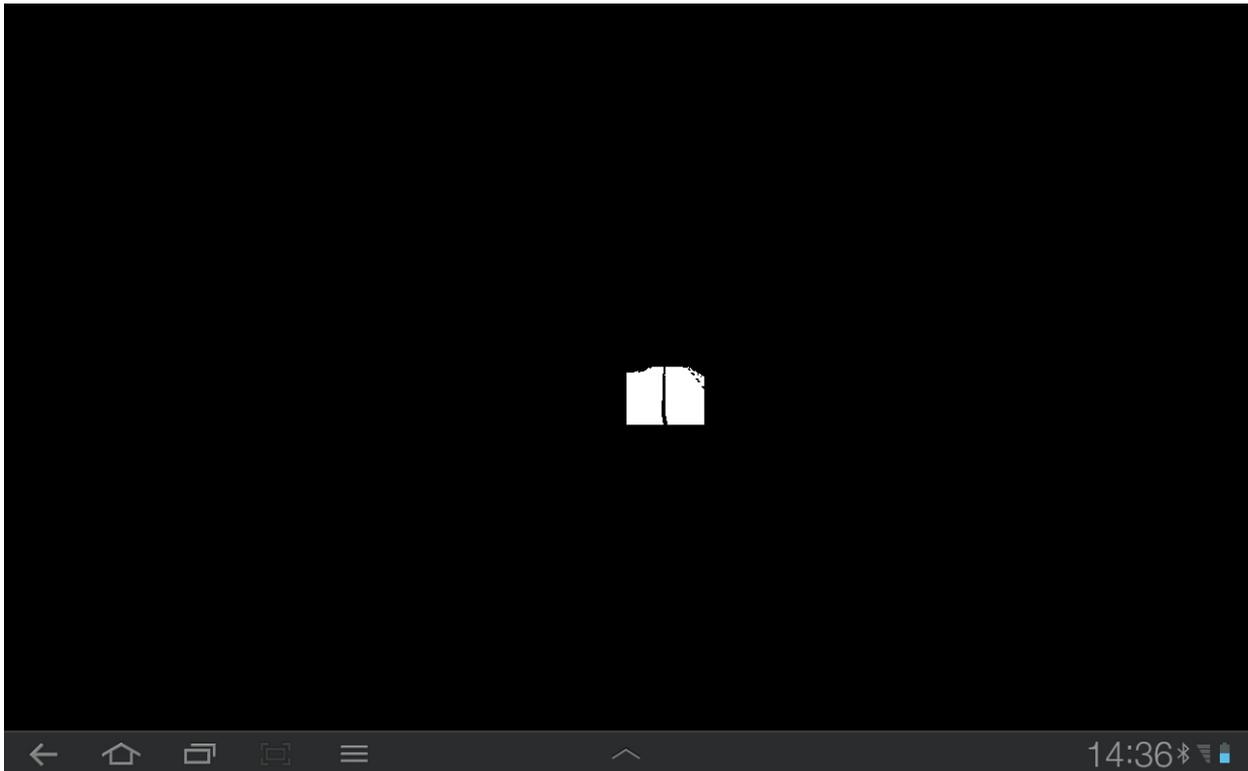
- By loading the option “ Set Threshold” the application will present on the screen a preview of the content visualized by the webcam, rendered in black and white and to which has been applied a threshold.
- On the top of the preview it is shown a sliding bar that allows to change the value used for the threshold.
- By moving the circle to the right or to the left this value increases or decrease respectively. The image shown in the preview will immediately reflects the new threshold.
- The value of the threshold is global and is automatically applied to all other functionalities that need to perform a threshold.



*Figure 2: Option "Set Theshold"*

### **Option “Preview Blob”**

- By loading the option “Preview Blob” the application will present on the screen a preview of the content visualized by the webcam.
- The size of the image rendered is really small in order to speed up the frame processing rate.
- The content is rendered in black and white, with a threshold.
- This option is useful to calibrate the image acquired by the webcam, by restoring the relative code is it possible to visualize the biggest blob computed. Even though this will increase image processing costs.



*Figure 3: Option "Preview Blob"*

### **Option “Control Rasteirinho”**

- By loading the option “Control Rasteirinho” the application will present on the screen a preview of the content visualized by the webcam, rendered in black and white, with a threshold.
- This option also starts the control over Rasteirinho via bluetooth.
- The robot is controlled by an algorithm, there is no user interaction in this stage. The algorithm considers the information about the position of the robot identified with the webcam and the blob detection algorithm.

### **Option “Quit”**

- By loading the option “Quit” the application will stop.