CS308 README

ERTS LAB
IT-B

CS308 – 2011 Project

Border Surveillance Bot

The objective of this project is to implement surveillance of border or other areas of strategic importance using face detection to identify potential targets.

Border Surveillance Bot

Students:

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Project Objective

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The primary objective of the project is to build a bot for border surveillance and security bot for guarding areas of strategic importance in an active war zone The Project achieves the following things

1. Scans the area for humans by means of face detection.
2. Position itself towards the humans and shoots it.(emulated by the means of 5 successive beeps, if time permits we'll implement a flashing a laser light)
3. Continues scanning the area.
4. If it encounters multiple humans shoot one of them.
5. Returns back to the initial position
6. Scans again for humans from this position
7. If humans are found it continues the steps 4,5,6.
8. After step 7 is finished it does step 1.

Hardware Platform

1. Firebird V ATMEGA2560
2. USB-Camera, Laser
3. Serial port communication cord
4. Computer with Linux installation for running the surveillance algorithm
5. Windows based computer for programming the bot.
   (There are ways to do the same in linux we'll stick towindows for this.)

Software

1. AVR Studio 4
2. Python
3. OpenCV
4. PySerial

Code Description

Code Files.

Filename	Purpose	Executes on
Main.c	Main Program	Robot
Winvar_firebird.h	Contains the abstractions of major operations.	Robot
Erts.py		PC.

<Mention the important files only>

Deliverables

Filename	Contains
C-code.tar.gz	SourceCode of programs to be burnt on Robot. Contains documentation of the code as well.
PC-interface.tar.gz	Contains python files.
Documents.tar.gz	Contains Project related doc files.

Execution Instructions

1. Install Python
    a. Debian based(apt): sudo apt-get install python
    b. Red Hat based(yum) : yum install python
2. Install Opencv bindings for python
    a. Debian based(apt): sudo apt-get install python-opencv
    b. Red Hat based(yum) : yum install python- opencv
3. Install Pyserial

a. Download http://pypi.python.org/packages/source/p/pyserial/pyserial-2.5.tar.gz
b. tar –xf pyserial-2.5.tar.gz
c. cd pyserial-2.5
d. sudo python setup.py install
e. mv serial/ ~/
   The above code assumes that the supplied code is run from the home directory of the user.