ctrlGUIV2.py provides the control interface, through which Beaglebone and BrickPi can be remotely accessed, and by executing programs on each of them, the videocam and the motor can be further controlled correspondingly. It also collects the online video stream sent to UDP port of the computer by the Beaglebone, displays them in VLC or records them in certain file. After each recording, an image is grabbed at every 20% time of the video.

motorCtrl.py runs in BrickPi. It sets the parameters of the motor, including power/speed, rotation angle each time, and the interval between two turns.

boneCV folder is located in Beaglebone. Three files are basically used. The streamVideoUDP file starts capture.c file, sets the frames the videocam will capture for one time, and sends the video stream to the UDP port of server in real time; while capture.c file captures the video with defined frames and resolution; and streamVideoUDP\_infinite file runs the capture.c file with infinite frames.

vlc.py is VLC module that ctrlGUIV2.py imports to display the video before downloading.