

## Instructions for Using the Wii Balance Board with MATLAB via a Bluetooth Dongle

Andrew Kary and Helen Huang  
andrew.kary@colorado.edu  
helen.huang@colorado.edu

1. For video instructions, go here: <http://www.screenr.com/embed/Pzts>
2. We have tried a few different computers with different operating systems. Both 32 bit Windows XP and 64 bit Windows 7 (running 32 bit MATLAB) have worked, along with a variety of MATLAB versions.
3. Unzip the contents of WiiLab&bbrecord.zip to a location of your choice.
4. Included in WiiLab&bbrecord are:
  - a. WiiLAB
    - i. This is Ian Stevenson's patch (<http://klab.wikidot.com/wii-proj>) to include support for the balance board, building upon the Notre Dame group's WiiLab library (<http://netscale.cse.nd.edu/twiki/bin/view/Edu/WiiMote>).
    - ii. It has a WiiLAB folder, WiiLAB\_Matlab folder, and InstallWiiLab.bat file.
    - iii. We have included all of the WiiLAB files you need to run our code, so you do not need to download it.
  - b. CU\_Wii – it has a Data folder, WiiBBFunctions folder, and bbrecord\_1\_4.m.
  - c. Three instructional docs
  - d. WiiLabTest.exe
    - i. (<http://netscale.cse.nd.edu/twiki/bin/view/Edu/ExWiiLabTest>)
5. First, you should have WiiLab installed and working.
  - a. Run InstallWiiLab.bat as an administrator.
    - i. This file will copy all of the WiiLAB files to C:\Program Files\WiiLAB and register the WiiLAB.dll. Please check that the WiiLAB.tlb file must be created. You should see “Assembly exported to ‘C:\Program Files\WiiLAB\WiiLAB\WiiLAB.tlb’, and the type library was registered successfully.”
6. Next, you will need to connect to the Wii Balance Board via bluetooth.
  - a. Not all Bluetooth dongles are compatible with the Wii. Check here for a list of working Bluetooth devices & dongles: [http://wiibrew.org/wiki/List\\_of\\_Working\\_Bluetooth\\_Devices](http://wiibrew.org/wiki/List_of_Working_Bluetooth_Devices)
  - b. **Some Bluetooth adapters connect and interface more easily than others.**  
The exact steps for connecting the Wii devices will differ, depending on your Bluetooth adapter and Bluetooth stack. Basically, add a Bluetooth device, like you would for any other Bluetooth device and when connecting, select “don't use a passkey” or pairing code.
  - c. Some BT adapters can easily connect multiple Wii controllers, while others cannot at all. The bbrecord code can be modified to collect data from more than one balance board, if you like.

7. Running our program, bbrecord
  - a. Once WiiLab is installed and the Balance Board is connected to the computer via Bluetooth, you are ready to try our program, bbrecord.
  - b. Double click on the bbrecord file. It should have a name like bbrecord\_1\_3.m. MATLAB should open. Press the run button. Follow the directions from the message window that pops up.