

# Using openinterface.py with iRobot Create™

## 1 Introduction

openinterface.py is a single file, functional implementation of the iRobot Create Open Interface specification. It's an easy way to get introduced into programming (Python is often used as a teaching language) and programming robots in particular (using the OpenInterface). This module, and its ancestor sci.py, have been used for a variety of purposes ranging from real robotics research to recreational hacking.

## 2 System Requirements

- iRobot Create
- Serial connection to the iRobot Create, either wired or wireless (Bluetooth)  
Note: Bluetooth accessories for iRobot Create is available from these vendors:
  - [http://www.elementdirect.com/product\\_info.php?products\\_id=44](http://www.elementdirect.com/product_info.php?products_id=44)
  - <http://www.roombadevtools.com/>
- A personal computer to program the Create with.
- Python 2.4, pyserial, and optionally pygame

## 3 Installation

1. Install Python 2.4 or higher. Various binary distributions can be found at <http://www.python.org/download/releases/2.4.4>. A shortcut to the Windows installer is: <http://www.python.org/ftp/python/2.4.4/python-2.4.4.msi>
2. Install pyserial from <http://pyserial.sourceforge.net/>. A shortcut to the Windows installer is: [http://downloads.sourceforge.net/pyserial/pyserial-2.2.win32.exe?modtime=1122861377&big\\_mirror=0](http://downloads.sourceforge.net/pyserial/pyserial-2.2.win32.exe?modtime=1122861377&big_mirror=0)
3. Copy the openinterface.py to your project directory.
4. The optional pygame module (for the joystick drive demo) is hosted at <http://pygame.org/> while a shortcut to the Windows installer is <http://pygame.org/ftp/pygame-1.7.1release.win32-py2.4.exe>.

## 4 Usage

The module is used like any other python module:

1. Start the Python interpreter: double-click the Python icon or run it from the command line.
2. Import the module.
3. Create an instance of the robot abstraction.
4. Begin streaming robot sensors.
5. Enter robot commands.

For example:

```
$ python
PythonWin 2.4.2 (#67, Sep 28 2005, 12:41:11) [MSC v.1310 32 bit (Intel)] on win32.
Portions Copyright 1994-2004 Mark Hammond (mhammond@skippynet.com.au) - see 'Help/About
PythonWin' for further copyright information.
>>>
>>> import openinterface
>>> bot = openinterface.CreateOverSerial (com_port=2, mode='full')
>>> bot.stream_sensors (6)
>>>
>>> # do your stuff here.
>>> for i in range (10):
>>>     print bot.sensors
```

```
>>> time.sleep (0.2)  
>>> bot.close ()
```

From here, you can examine the existing source code for ideas, and inspiration.