3d Brain Atlas Reconstructor Installation (Ubuntu)

Getting the code

It is assumed that the main directory dedicated for 3dBAR is `/home/$USERNAME/3dbar`. if you want to install it in another directory, replace `3dbar` with the desired path.

The latest stable version of 3dBAR software is available to _3dBAR online service_ users from the account management panel.
To register as the service user fill out _the 3dBAR service registration form_. Then you will also be able to download 3dBAR directly using the link provided via email.

Unzip the file to your home directory and go to the 3dBAR directory:

```
mkdir ~/3dbar; unzip 3dbar.zip -d ~/3dbar ; cd ~/3dbar;
```

The directories have the following purposes:

- **bin**: Holds all executable files, atlas parsers and auxiliary scripts
- **lib**: Holds the 3dBAR api
- **atlases**: Directory, where the source data, _CAF datasets_ and reconstructed models are stored. Each dataset (denoted as DATASET_NAME) contains the following subdirectories:
    - atlases/DATASET_NAME/src : Here the source data is located. It can be placed manually by a user or downloaded from internet depending on a particular parser.
    - atlases/DATASET_NAME/caf : This is the directory where a CAF dataset is generated by specific parsers.
    - atlases/DATASET_NAME/reconstructions : The directory for reconstructed models.

Then follow instructions from `README` file to verify if the installation was successful.

Installing required packages

Installation in Ubuntu 12.04 LTS

1. Install the Visualization Toolkit and other graphics libraries:

```
sudo apt-get install \
libvtk5.8 libvtk5-dev libvtk5.8-qt4 libvtk5-qt4-dev \
tk8.5 tk8.5-dev \
```

```
python-vtk libgtkgl2.0-1 libgtkgl2.0-dev libgtkglext1 librsvg2-2 python-nifti
```
2. Install python related packages:

```
sudo apt-get install \
python-gtkglext1 python-rsvg python-opengl python-numpy python-scipy python-wxgtk2.8
```
3. Other packages:

```
sudo apt-get install \
potrace pstoedit python-setuptools python-epydoc
```

Installation in Ubuntu 11.10

1. Install the Visualization Toolkit and other graphics libraries:

```
sudo apt-get install \
libvtk5.6 libvtk5-dev libvtk5.6-qt4 libvtk5-qt4-dev \
tk8.5 tk8.5-dev \
python-vtk libgtkgl2.0-1 libgtkgl2.0-dev libgtkglext1 librsvg2-2 python-nifti
```
2. Install python related packages:

```
sudo apt-get install \
python-gtkglext1 python-rsvg python-opengl python-numpy python-scipy python-wxgtk2.8
```
3. Other packages:

```
sudo apt-get install \
potrace pstoedit python-setuptools python-epydoc
```

Installation in Ubuntu 10.10 and Ubuntu 11.04

1. Install the Visualization Toolkit and other graphics libraries:

```
sudo apt-get install \
libvtk5.4 libvtk5-dev libvtk5.4-qt4 libvtk5-qt4-dev \
tk8.5 tk8.5-dev \
python-vtk libgtkgl2.0-1 libgtkgl2.0-dev libgtkglext1 librsvg2-2 python-nifti
```
2. Install python related packages:

```
sudo apt-get install \
python-gtkglext1 python-rsvg python-opengl python-numpy python-scipy python-wxgtk2.8
```
3. Other packages:

```
sudo apt-get install \
potrace pstoedit python-setuptools python-epydoc
```

Installation in Ubuntu 10.04

1. Install the Visualization Toolkit and other graphics libraries:

```
sudo apt-get install \
libvtk5.2 libvtk5-dev libvtk5.2-qt4 libvtk5-qt4-dev \
tk8.5 tk8.5-dev \
python-vtk libgtkgl2.0-1 libgtkgl2.0-dev libgtkglext1 librsvg2-2 python-nifti
```
2. Install python related packages:

```
sudo apt-get install \
python-gtkglext1 python-rsvg python-opengl python-numpy python-scipy python-wxgtk2.6
```
3. Other packages:

```
sudo apt-get install \
potrace pstoedit python-setuptools python-epydoc
```

Troubleshooting

Segmentation fault in Ubuntu 11.10

If the reconstructor crashes like that (numbers can vary):

```
$ ./3dbar.sh
./3dbar.sh: line 17:  2296 Segmentation fault      python bin/reconstructor/gui.py
```

the reason can be a bug in the 'python-vtk' package installed in your system. Unfortunately there is no automated way to fix it - you have to do it manually:

1. Find a file named 'wxVTKRenderWindowInteractor.py'. It can be located in '/usr/share/pyshared/vtk/wx/' directory or in similar location:

```
$ find / -name 'wxVTKRenderWindowInteractor.py'
```

2. Edit the file with your favourite ASCII editor. In the example editor 'vim' is used and it is assumed that the path to the file is '/usr/share/pyshared/vtk/wx/wxVTKRenderWindowInteractor.py':

```
$ sudo vim /usr/share/pyshared/vtk/wx/wxVTKRenderWindowInteractor.py
```

3. Near 350th line of the file find a following line:

```
        d = '_%s_%s' % (d[2:], 'void_p')
```

4. Add '\0' characters to the line to make it like below:

```
        d = '_%s_%s\0' % (d[2:], 'void_p')
```

5. Save the modified file.

6. The bug should be fixed for now. Try running 3dBAR again. If this solution doesn't work - let us know.