Instructions - Installation

- **STAND-ALONE INSTALLATION**
  M-track can be run using the available stand-alone versions for Linux and Microsoft Windows platforms. Two executable stand-alone versions of M-Track are currently available: v1r1 and v2r1 allow the user to visualize the orientation of the mouse body, v1r2 and v2r2 do not have this feature. Versions v1r1 and v1r2 require OpenCV 3.0. Versions v2r1 and v2r2 require OpenCV 3.2.

  1. Linux M-Track_LIN_v1r1 or M-Track_LIN_v1r2 (OpenCV 3.0)

  Installation Notes
  Use the Terminal to navigate to the folder in which you saved the downloaded file. Type the following line to give the file permission to be executed:

  ```
  chmod a+x filename
  ```

  2. Microsoft Windows M-Track_WIN_v1r1 or M-Track_WIN_v1r2 (OpenCV 3.0)
     M-Track_WIN_v2r1 or M-Track_WIN_v2r2 (OpenCV 3.2)

  Required Libraries for versions v1r1 and v1r2
  1. Python 2.7
  2. OpenCV 3.0

  Installation Notes for versions v1r1 and v1r2
  Install Python 2.7
  Install OpenCV 3.0 from http://opencv.org/releases.html

  Required Libraries for versions v2r1 and v2r2
  1. Python 2.7
  2. OpenCV 3.2

  Installation Notes for versions v1r1 and v1r2
  Install Python 2.7
  Install OpenCV 3.2 from http://opencv.org/releases.html

  If using Open CV 3.2:
  Copy cv2.pyd to C:\Python27\Lib\site-packages
  Copy opencv_ffmpeg320_64.dll to C:\Python27

  Make sure your Windows OS has Python in its environmental variables. To do this, right click on *My Computer* (or *This PC*) and select *Properties*. Select *Advanced System Settings* from the menu on the left-hand side. Click on *Environment Variables*. Scroll down in the *System variables* window and double click on *Path*. The *Variable value* field should contain a list of directories separated by a semi-colon (Windows 8) or a table including a number of different directories (Windows 10). Check that the following two directories are listed here:
  C:\Python27
  C:\Python27\Scripts

  Double-click on the MTrack icon to run MTrack_Qt.py and execute the GUI

- **INSTALLATION FROM SOURCE CODE**
  M-Track can be run from source code by executing MTrack_Qt.py using Python 2.7. The following is a list of the required libraries and packages.

  Required Libraries for versions v1r1 and v1r2
  1. Python 2.7
  2. OpenCV 3.0
  3. PyQt 4.8
  4. Numpy 1.10.4

  Required Libraries for versions v2r1 and v2r2
  5. Python 2.7
  6. OpenCV 3.2
  7. PyQt 4.11
  8. Numpy 1.13.1

  We recommend to install these libraries from the Anaconda open data science platform (https://www.continuum.io/downloads)

  Required packages

  1. MTrack_Qt.py % main function, GUI
  2. MTrack.py % include tracking functionality
  3. ColorLabel.py % display color selector image
  4. DisplayLabel.py % display and cage drawing
  5. InfoDialog.py % display info messages
  6. ROILabel.py % display and ROI drawing

  Linux (OpenCV 3.0)
  1. Install Anaconda1
     (see https://docs.continuum.io/anaconda/install)
     ```
     bash ~/Downloads/Anaconda2-4.0.0-MacOSX-x86_64.sh
     ```
  2. If not already installed through Anaconda, install PyQt and Numpy
     ```
     conda install pyqt
     conda install numpy
     ```
  3. Install OpenCV 3.0
     (see http://rodrigoberriel.com/2014/10/installing-opencv-3-0-0-on-ubuntu-14-04/)
     ```
     conda install -c trax opencv3=3.0.0
     ```

  Mac OS X (OpenCV 3.0) - obsolete
  1. Install Anaconda
     (see https://www.continuum.io/downloads)
  2. If not already installed through Anaconda, install PyQt and Numpy
     ```
     conda install pyqt
     conda install numpy
     ```
  3. Install OpenCV 3.0
     ```
     brew install opencv3.0
     ```

```
echo /usr/local/opt/opencv3/lib/python2.7/site-packages >>
/Users/yourpath/anaconda/lib/python2.7/site-packages/opencv3.pth
```

Microsoft Windows (OpenCV 3.0) - obsolete

1. Install Anaconda1 from https://www.continuum.io/downloads
2. If not already installed through Anaconda, install PyQt and Numpy from the command window

```
conda install pyqt
conda install numpy
```

3. Install OpenCV 3.0 from http://opencv.org/downloads.html
4. Copy C:\opencv3\build\python\2.7\x64\cv2.pyd to C:\Anaconda\Lib\site-packages\
5. Copy the opencv_ffmpeg300_64.dll file from C:\Applications\opencv\build\x64\vc10\bin into the python path (mine is at C:\Users\username\Anaconda)

Microsoft Windows (OpenCV 3.2)

1. Install Anaconda2 from https://www.continuum.io/downloads
2. Install OpenCV 3.2 from http://opencv.org/downloads.html
3. Run the following command from the Scripts folder

```
conda create --name mtrack pyqt=4.11
```

4. Activate the installation

```
activate mtrack
```

5. Copy C:\opencv3\build\python\2.7\x64\cv2.pyd to C:\Anaconda2\envs\mtrack\Lib\site-packages
6. Open the Anaconda2 Navigator and from the dropdown menu select *mtrack* to visualize the applications that can run the code. Select *Spyder* and install it.
7. From the Anaconda2 Navigator, on the left-hand side, select *Environments.* This will allow you to see two folders: *root* and *mtrack*. Select *mtrack*. Search for *numpy* in the *Installed* libraries. Tick off *numpy* and click *Apply* to the bottom right of the screen.
8. Copy the opencv_ffmpeg300_64.dll file from C:\Applications\opencv\build\x64\vc10\bin into the python path (mine is at C:\Users\username\Anaconda2)

Support

If you experience any problem, please contact Annalisa Scimemi (scimemia@gmail.com; ascimemi@albany.edu).