## Installation instructions

### 0. Prerequisite

\* Ubuntu Linux 32 Bit (64 Bit not tested)

\* Dymola 2017 (DYMOLA\_2017\_AllLinux.zip)

\* Python 3.4.3

\* Java 8

###### Utility:

sudo apt-get install open-vm-tools

sudo apt-get install open-vm-tools-desktop

sudo apt-get install git vim htop

sudo apt-get install alien

//32 Bit Complications

sudo apt-get install g++-multilib libc6-dev-i386

### 1. Install Python and Python modules

###### Install Python (global):

sudo apt-get update

sudo apt-get install python3-pip python3-dev python-virtualenv

//scipy dependency

sudo apt-get install libatlas-base-dev gfortran libffi-dev

//matpotlib dependency

sudo apt-get install libfreetype6-dev

//pyfmi dependency

sudo apt-get install cmake

\* Source:

\* [install scipy](https://www.scipy.org/install.html)

\* [install blas](http://stackoverflow.com/questions/26575587/cant-install-scipy-through-pip)

###### Install moduls:

sudo pip3 install --upgrade numpy

sudo pip3 install --upgrade scipy

sudo pip3 install --upgrade nose

sudo pip3 install --upgrade pandas

sudo pip3 install --upgrade matplotlib

sudo pip3 install --upgrade sympy

sudo pip3 install --upgrade jupyter

sudo pip3 install --upgrade pytest

sudo pip3 install --upgrade Cython

### 2. Install PyFMI

###### Create working dir:

mkdir pyfmi

###### Install FMI Library:

cd ~/pyfmi

# sudo wget http://www.jmodelica.org/downloads/FMIL/FMILibrary-2.0.2b3-src.zip

Downloaden von FMILibrary-2.0.b3-src.zip bei www.jmodelica.org

sudo unzip FMILibrary-2.0.b3-src.zip

cd FMILibrary-2.0.2b3/

sudo mkdir build-fmilib && cd build-fmilib

sudo cmake -DFMILIB\_INSTALL\_PREFIX=../install ../

sudo make install test

If the FMILibrary zip file is unavailable, it is hosted at the following [SVN repo](https://svn.jmodelica.org/FMILibrary/tags/2.0.2b3/)

###### Install Sundials:

cd ~/pyfmi

sudo wget http://computation.llnl.gov/projects/sundials-suite-nonlinear-differential-algebraic-equation-solvers/download/sundials-2.4.0.tar.gz

tar xzf sundials-2.4.0.tar.gz

cd sundials-2.4.0

sudo ./configure CFLAGS="-fPIC"

make

sudo make install

###### Install Assimulo:

cd ~/pyfmi

sudo wget https://pypi.python.org/packages/4c/c0/19a54949817204313efff9f83f1e4a247edebed0a1cc5a317a95d3f374ae/Assimulo-2.9.zip#md5=3f28fd98011d2ec7a01703a1ef1dff45

sudo unzip Assimulo-2.9.zip

cd Assimulo-2.9

sudo python3 setup.py install --sundials-home=/home/pyfmi/sundials-2.4.0 --blas-home=/usr/lib/libblas --lapack-home=/usr/lib/libblas

###### Install PyFMI:

Vor der Installation muss man mit dem Befehl:

sudo chmod -R 777 FMILibrary-2.0.3

volles Zugriffsrecht auf die Unterordner der FMILibrary geben.

cd ~/pyfmi

sudo wget https://pypi.python.org/packages/66/60/26664b2b2cad4a7fae409214e2f8901177322d78bfb11ef61e580115c9b8/PyFMI-2.3.1.zip#md5=577829ee1ee83fbb8c28ddf4b82aa4ee

sudo unzip PyFMI-2.3.1.zip

cd PyFMI-2.3.1

sudo python3 setup.py install --fmil-home=/home/yourusername/pyfmi/FMILibrary-2.0.2b3/install/

######  Source:

\* [PyFMI](http://www.jmodelica.org/page/4924)

\* [Install pyfmi](http://laht.info/installing-pyfmi-1-5-on-ubuntu-14-04/)

\* [Sunidals](http://computation.llnl.gov/projects/sundials-suite-nonlinear-differential-algebraic-equation-solvers/sundials-software)

\* [Assimulo](https://pypi.python.org/packages/4c/c0/19a54949817204313efff9f83f1e4a247edebed0a1cc5a317a95d3f374ae/Assimulo-2.9.zip#md5=3f28fd98011d2ec7a01703a1ef1dff45)

### 3. Install OpenAI gym

######  Install OpenAi Gym:

git clone https://github.com/openai/gym.git

cd gym

pip install -e .

######  Install libav-tools:

sudo apt-get install libav-tools

git clone https://github.com/openai/gym

sudo pip3 install -e .

sudo pip3 install pyglet

######  Source:

\* <https://gym.openai.com/docs>

### 4. Install java8 jdk

######  Install Java 8:

sudo add-apt-repository ppa:webupd8team/java

sudo apt-get update

sudo apt-get install oracle-java8-installer

######  Source:

\* [askubuntu](http://askubuntu.com/questions/521145/how-to-install-oracle-java-on-ubuntu-14-04)

### 5. Install Dymola

###### Install Dymola:

cd /opt

sudo unzip DYMOLA\_2017\_AllLinux.zip -d DYMOLA\_2017

cd DYMOLA\_2017/linux\_x86\_64/

sudo alien -i -k dymola-2017.1-1.x86\_64.rpm

###### Source:

\* [Dymola](http://www.3ds.com/products-services/catia/products/dymola/linux/)

###### Configure Dymola: Add to environment variables to .bashrc:

export MODELICAPATH=${MODELICAPATH}:/usr/local/Modelica/Library/

export DYMOLA=/opt/dymola

export LD\_LIBRARY\_PATH=$DYMOLA/bin/lib:$LD\_LIBRARY\_PATH

###### Start Dymola:

/opt/dymola-2017-x86\_64/bin/dymola.sh

###### Install Tkinter

sudo apt-get install python3-tk

##### Installing LibXML Perl

Sudo apt-get install zliblg-dev libxml2-dev

Sudo cpan install XML::LibXML

Sudo apt-get install python-lxml

### Optional: Install pycharm cumminity edition

\* Download source [PyCharm](https://www.jetbrains.com/pycharm/download/#section=linux)

sudo cp pycharm-community-2016.1.2.tar.gz /opt/

sudo tar -xzvf /opt/pycharm-community-2016.1.2.tar.gz -C /opt

sudo rm /opt/pycharm-community-2016.1.2.tar.gz

./pycharm-community-2016.1.2/bin/pycharm.sh

\* Run PyCharm:

/opt/pycharm-community-2016.2/bin/pycharm.sh