**Installation Instruction – DeePC Flow Control**

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Python Environment

The code for running DeePC flow control simulation is fully developed in Python environment and all the modules need to be installed in Python.

Two common commands for installing are

* *pip install [module\_name] == {version}* (This is more compatible with different modules)
* *conda install [module\_name] = {version}* (If you use a conda environment. May be not compatible with some modules)

For basic modules, you need the following modules with any latest version.

* numpy (usually preinstalled when building the environment)
* scipy
* math (usually preinstalled when building the environment)
* pickle (this is for loading simulation buffers from the mesh folder)

For special modules, there is one for flow simulation and another one for quadratic programming.

* qpsolvers -- *pip install qpsolvers* (details in <https://github.com/qpsolvers/qpsolvers>)

(Note: there was another version of the code using ‘quadprog’, but I found ‘qpsolvers’ is better)

* dolphin -- *conda install -c conda-forge fenics* (this is the core module of FEniCS and they updated many things over the years, please try other methods in their documents if ‘conda install fails’, details in <https://fenicsproject.org/download/archive/>)

If there are any modules not mentioned in this document, please search their official website and installed them in a similar way.