**Python-MATLAB (matlab.engine)**

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# **Basic Introduction**

Project is providing the access between the python and MATLAB back and forth

For MATLAB to detect python steps are –

1. Standard variable available in MATLAB as “pyenv”. pyenv should detect the executable python version present. (For reference search the “pyenv” in the MATLAB documentation.

Below are the details of the result generally shown for the pyenv variable if MALAB is able to locate the executable python file.

A screenshot of a computer program

Description automatically generated with medium confidence

Figure "pyenv" variable details for the python.exe at standard path

1. If there is an issue in detection for the python executable file by MATLAB a blank response will be received for the “pyenv” variable as below

A screenshot of a computer

Description automatically generated with low confidence

Figure "pyenv" variable response when python.exe is not detected.

1. If python is installed and available on the computer same can be resolved with the function “pyversion” by providing the absolute path for the python.exe file (e.g. pyversion C:\Users\vikas\.conda\envs\py37\python.exe)
2. Once the command accepted results can be verified with the “pyenv” variable as below

A screenshot of a computer program

Description automatically generated with low confidence

Figure "pyenv" variables after successfully implementing the pyversion command.

For Python to MATLAB communication

1. Library required is matlab.engine

# **Section 3- CAN Message Frame Structure**

All messages in CAN are referred as Frames. Information sent by the CAN with different frames must be compliant with defined frame formats of **different but** **limited length**. Mainly four frames are present in CAN which are:-

1. **Data Frame** – Data transfer from one to many receiving nodes.
2. **Remote Frame** – Request of Data from one node to another node, it is followed by the Data frame consisting required data.
3. **Error Frame** – Bus participant, receiver or transmitter can signal error condition at any time during data or remote frame transmission.
4. **Overload Frame** – Node requesting delay between data or remote frames as requiring time for processing.

## **3.2 Extended CAN Protocol for Data and Remote Frame-**

Generally used for off-road vehicles. ISO 11898 amendment was created in 1995 to support extended CAN protocol.

Trade off for extended CAN

# **References**

Installation reference

<https://www.mathworks.com/help/matlab/matlab_external/install-the-matlab-engine-for-python.html>

Calling MATLAB from Python | MATLAB and Python Together,

Part 1: - <https://www.youtube.com/watch?v=TQOEcUdw9Wk>

Part 2: - <https://www.youtube.com/watch?v=MzoFK0_UbOA&list=RDCMUCgdHSFcXvkN6O3NXvif0-pA&start_radio=1&rv=MzoFK0_UbOA&t=597>