Model Image Comparison Tool

Model Image Comparison Tool helps to compare two Simulink models and finds the difference between the models using image comparison approach.

Developed by: Sysenso Systems, https://sysenso.com/

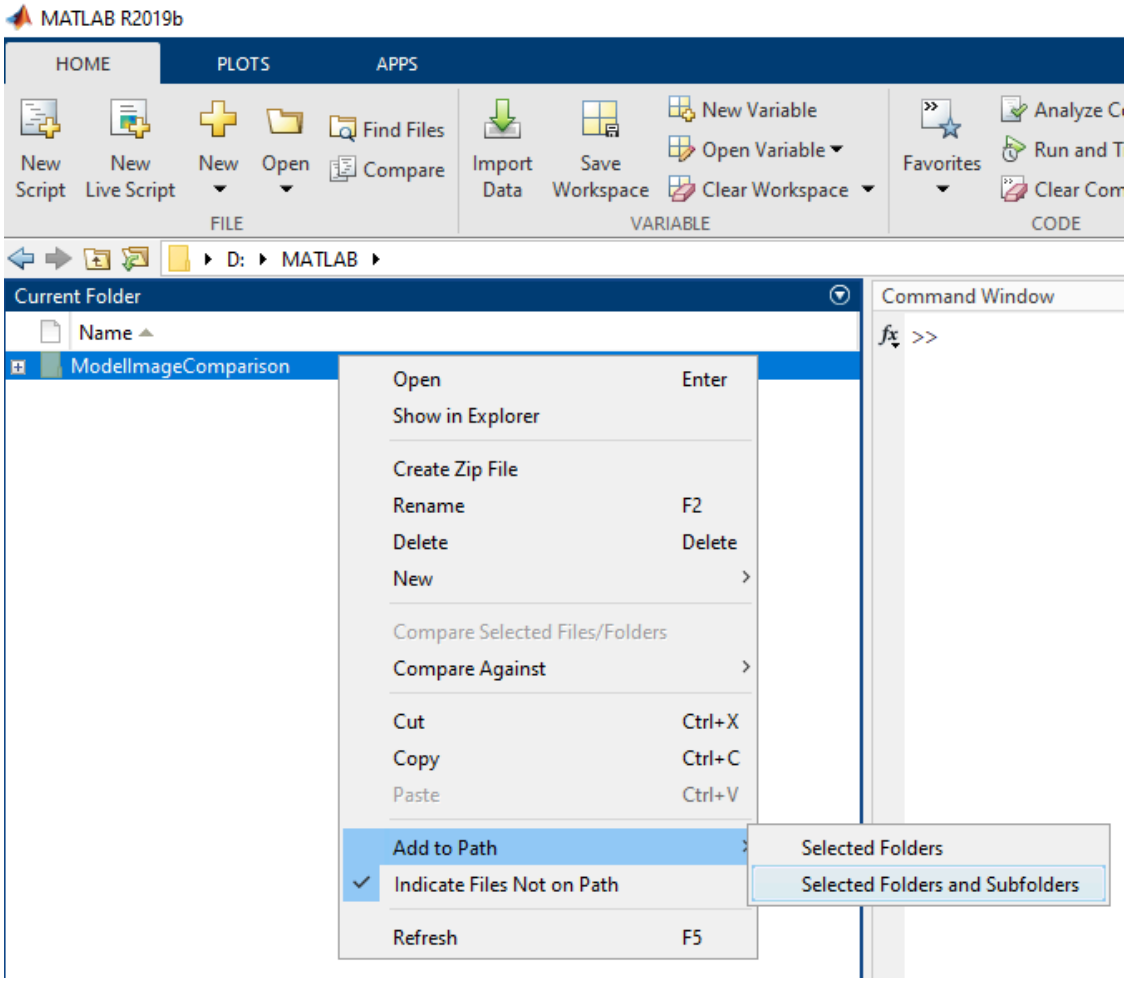
Contact: contactus@sysenso.com

Version:

- 1.0 - Initial Version.

Launching the tool

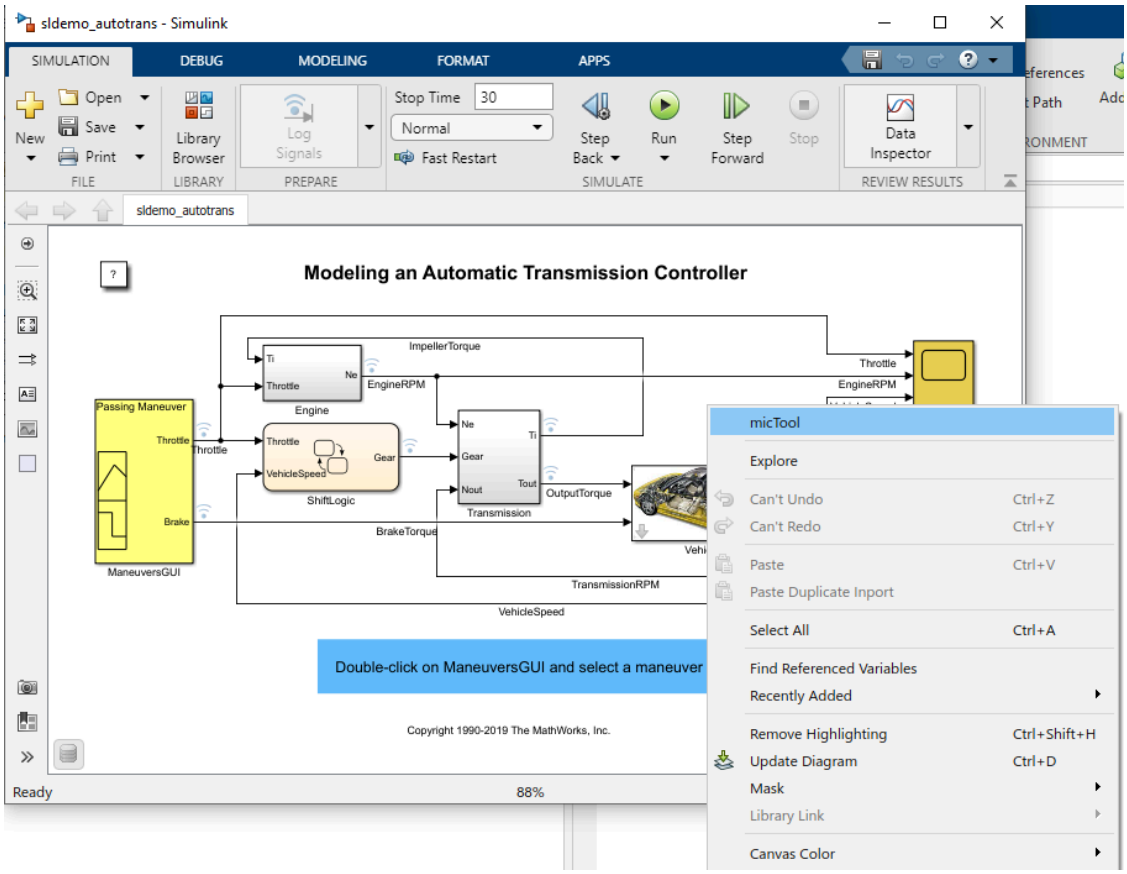
- Before launching the tool, add the ModelImageComparison folder to the MATLAB path.



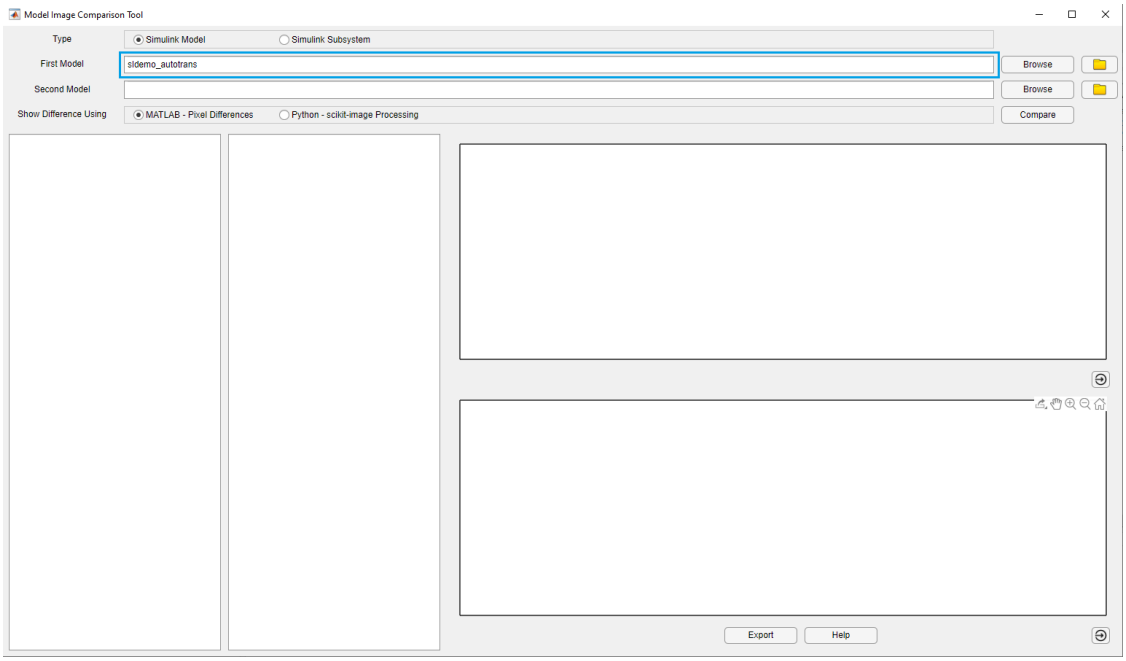
- The tool can be launched by typing following the command as below in the MATLAB command window.

- >> micTool

- Model Image Comparison Tool can be launched from the model context menu. If the menu is not available, run the following command in the MATLAB command window and then start using Simulink.
  >> sl_refresh_customizations



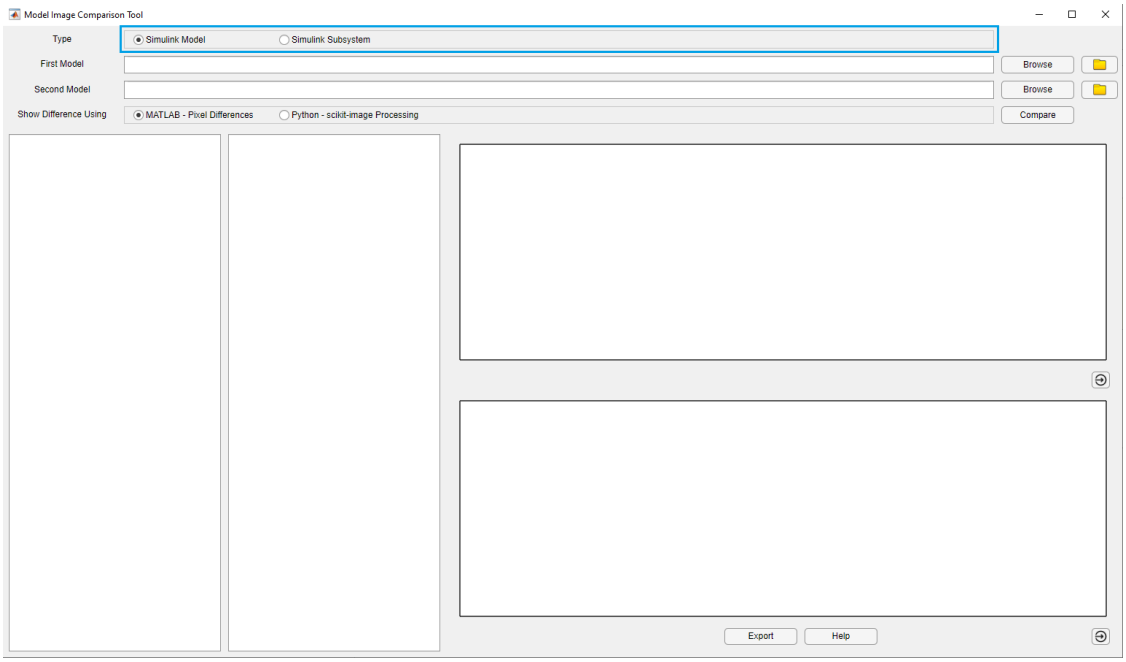
- Model Image Comparison Tool GUI launches with the current system name.



Type

"Type" option contains two radio buttons. Select anyone of the appropriate option.

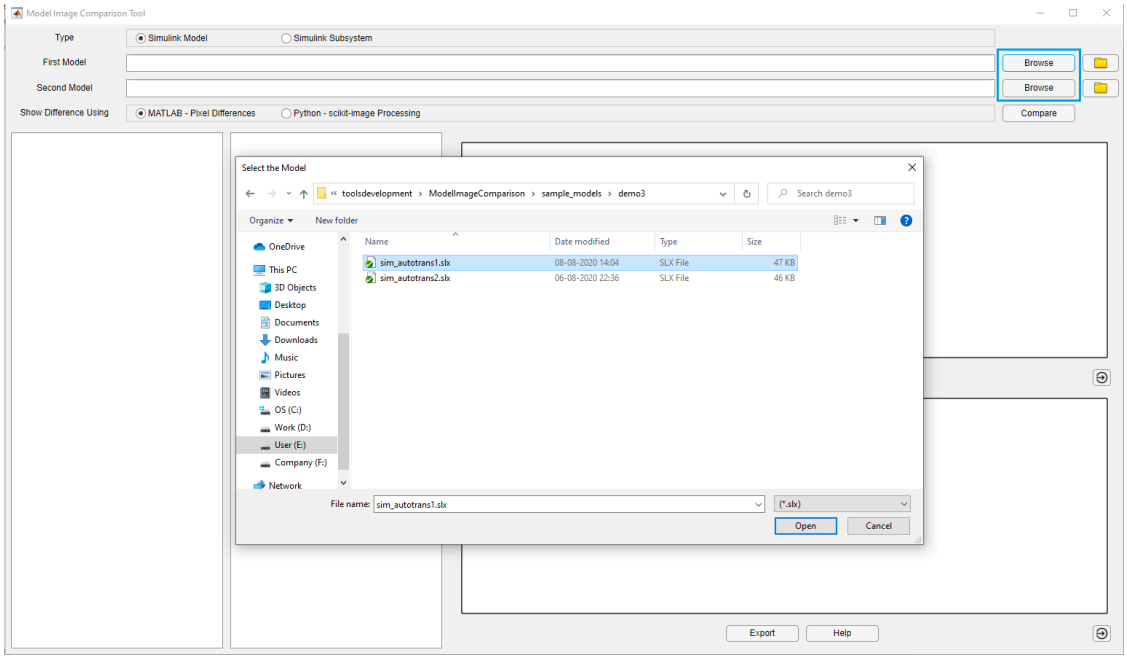
- Simulink Model(Default) - To compare two Simulink models and its Children.
- Simulink Subsystem - To compare two Simulink Subsystems and its Children.



Browse

- On clicking the Browse button on top of the GUI, a model dialog box opens, which enables the user to select the model to be compared.

- Selected Model name will be displayed on the corresponding edit field.



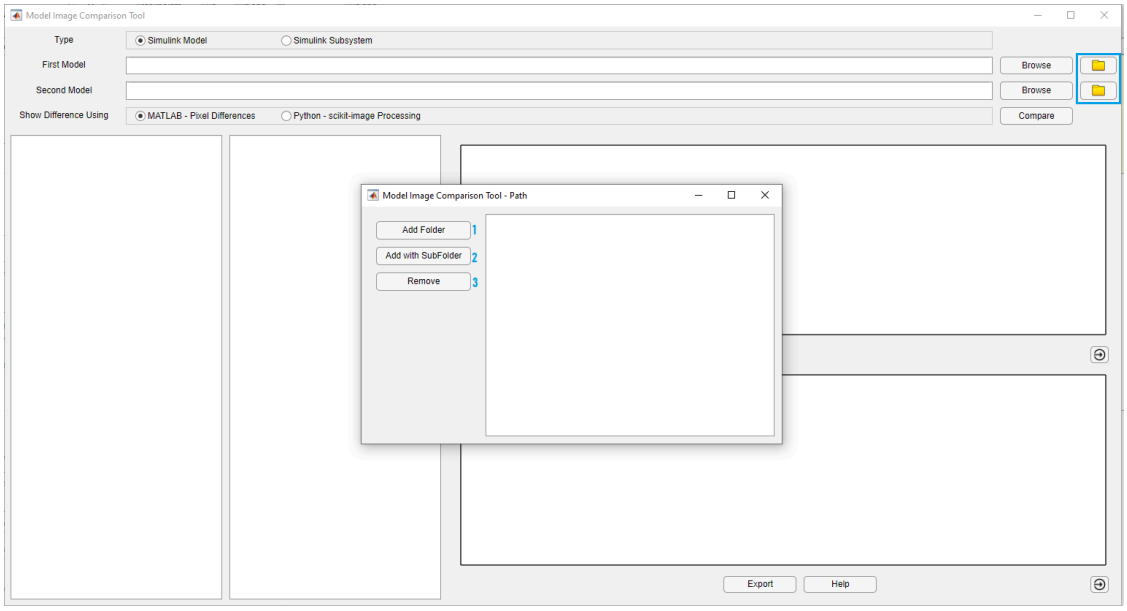
Folder Icon

- By selecting the button with folder icon, a GUI opens with the following actions.

1. **Add Folder** - A dialog box opens enabling the user to select a folder and the selected folder will be added to MATLAB path.

2. **Add with SubFolder** - A dialog box opens enabling the user to select a folder. The selected folder and its sub-folders will be added to MATLAB path.

3. **Remove** - On clicking the Remove Folder Button, the selected folder will be removed from the MATLAB path.



Show Difference Using

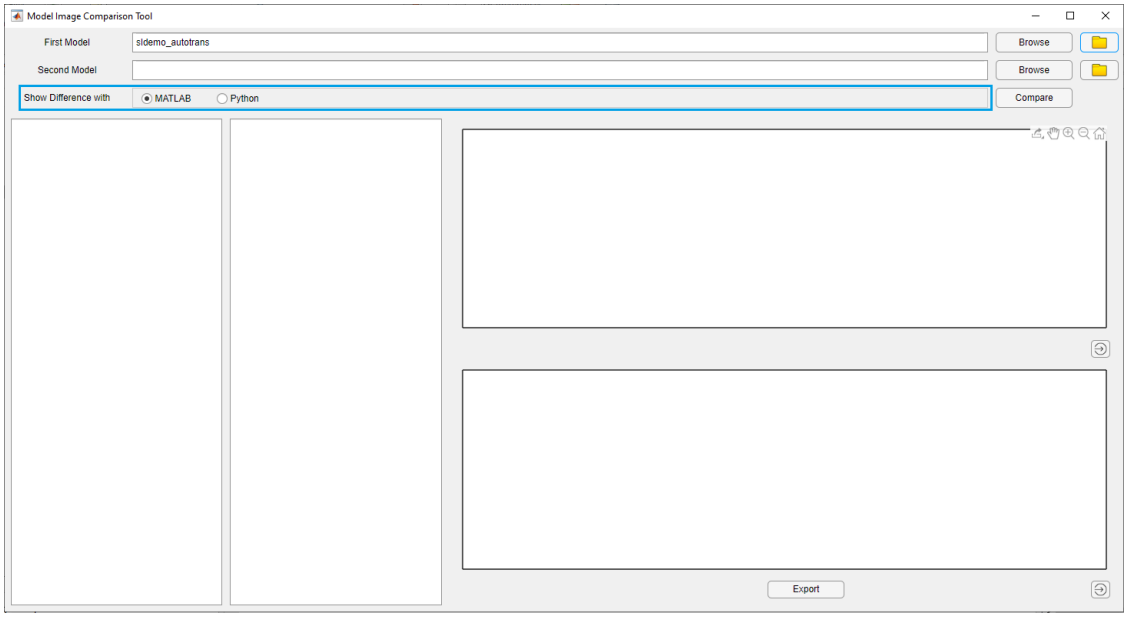
"Show Difference Using" panel contains two choices.

- MATLAB - Pixel Differences - Finds pixel-wise image differences using MATLAB code.
- Python - scikit-image Processing - Uses "scikit-image: Image processing in Python" package to find image differences.

Note: Python - scikit-image Processing radio button will be disabled if anyone of the following package is not installed within Python. Refer the links below for installing those packages.

- OpenCV - https://pypi.org/project/opencv-python/
- skimage - https://scikit-image.org/docs/stable/install.html

Select anyone of the options to highlight the difference between the images.



Compare Button

- Upon pressing the compare button, both the models are traversed simultaneously and then tree structure of the models are displayed with four different icons.
- Green icon on both the sides - No Significant difference on the current level
- Green icon and Red icon either sides - Significant difference on the current level
- Filled Blue circle and Empty Blue circle on either side - Represents the current block is present only in one of the models.

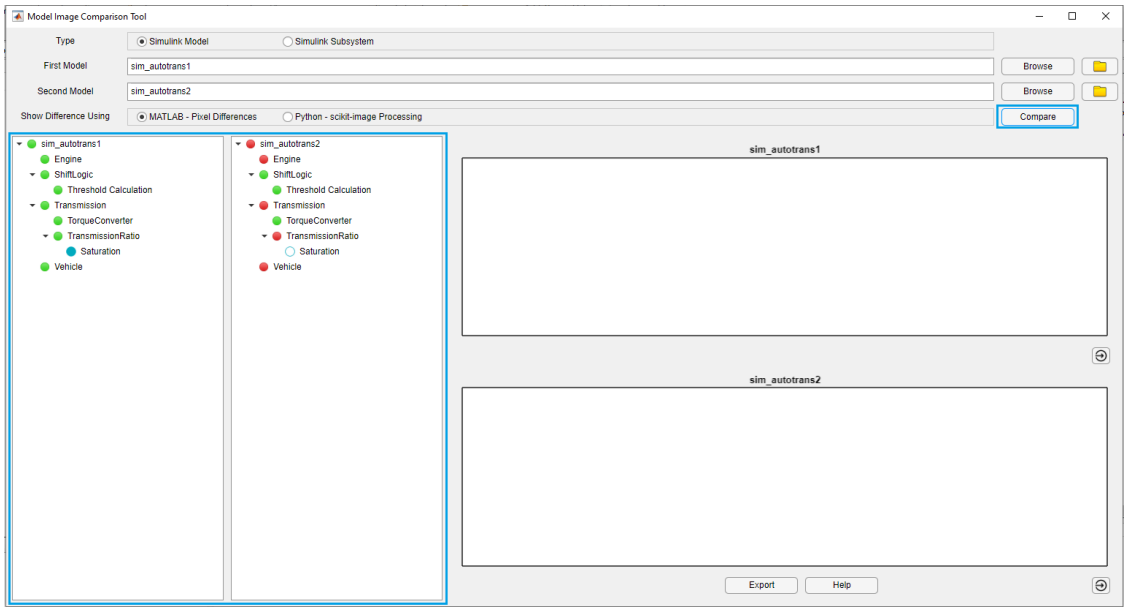
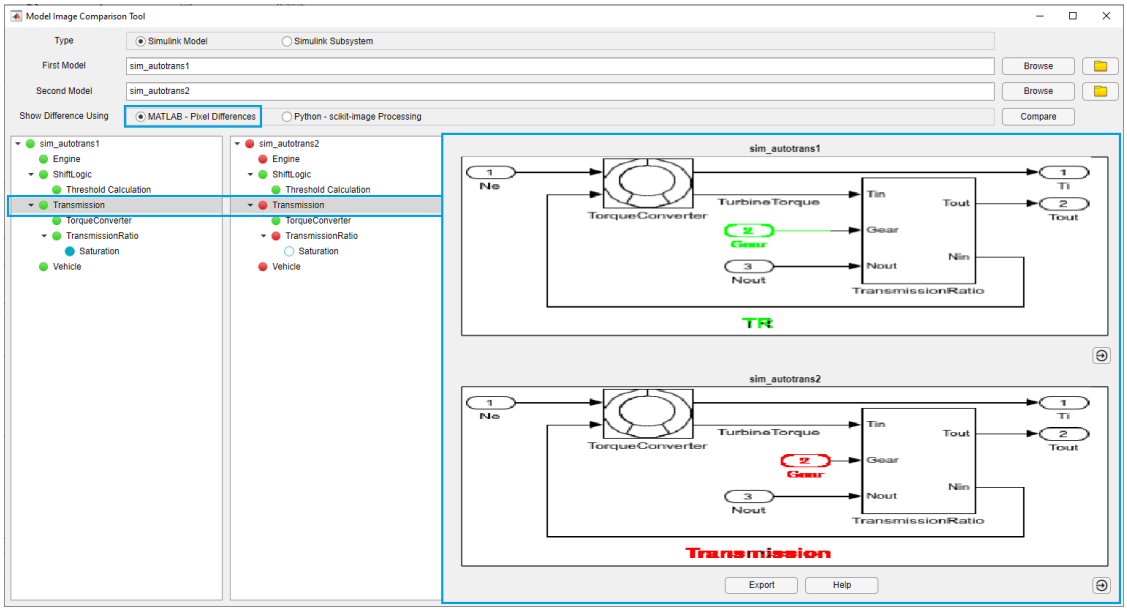


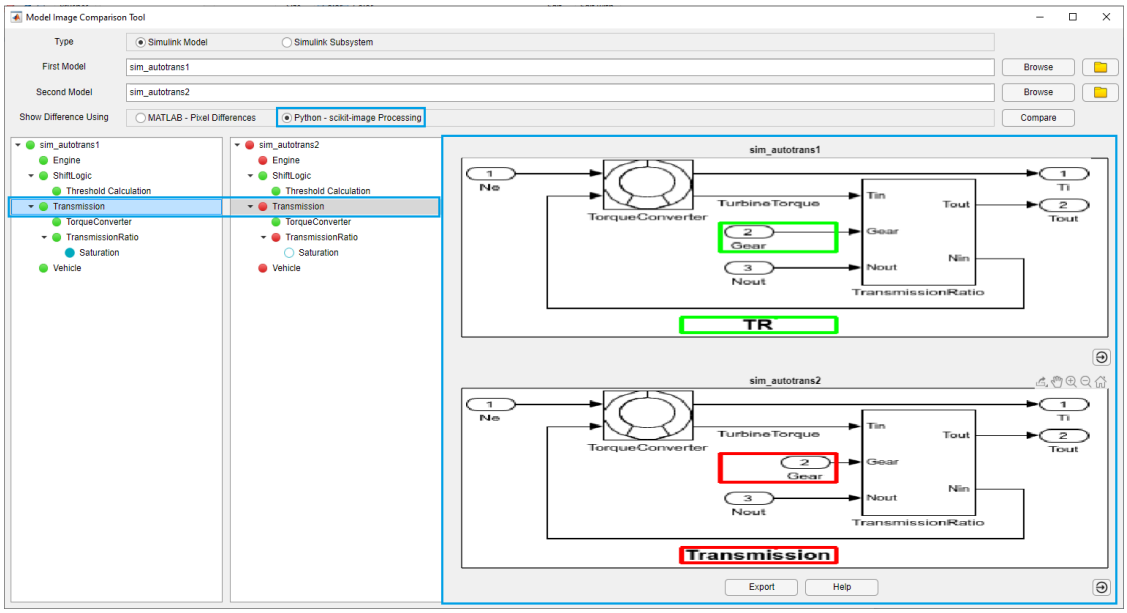
Image Difference

- When the Node from any one of the trees, it automatically selects the corresponding node on other tree and the image of the systems will be displayed on two separate axes.

- If MATLAB - Pixel Differences radio button is selected.

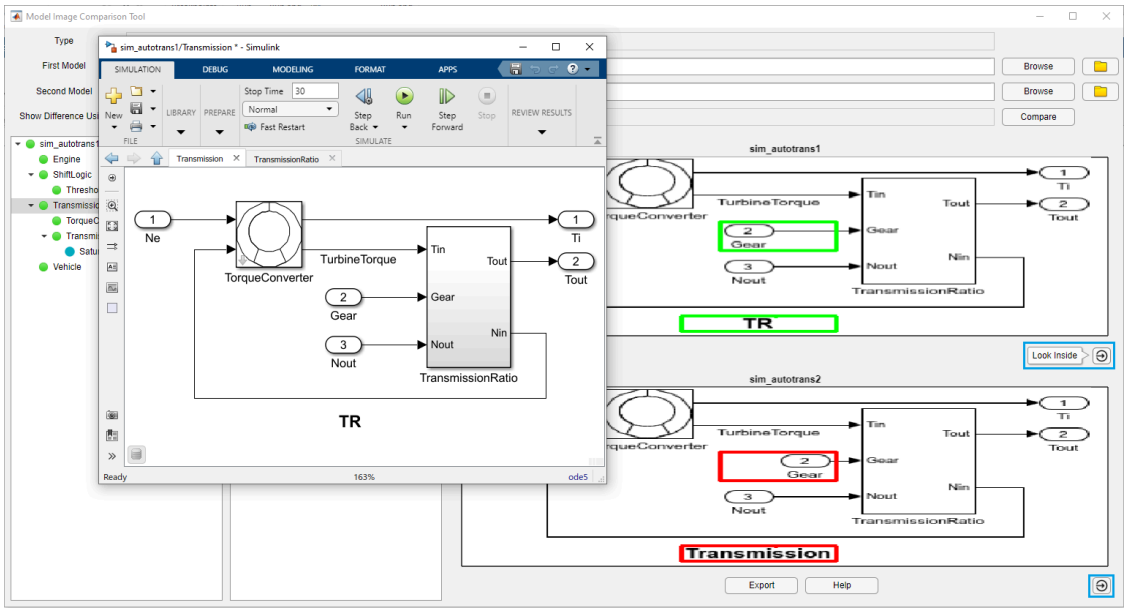


- If Python - scikit-image Processing radio button is selected.



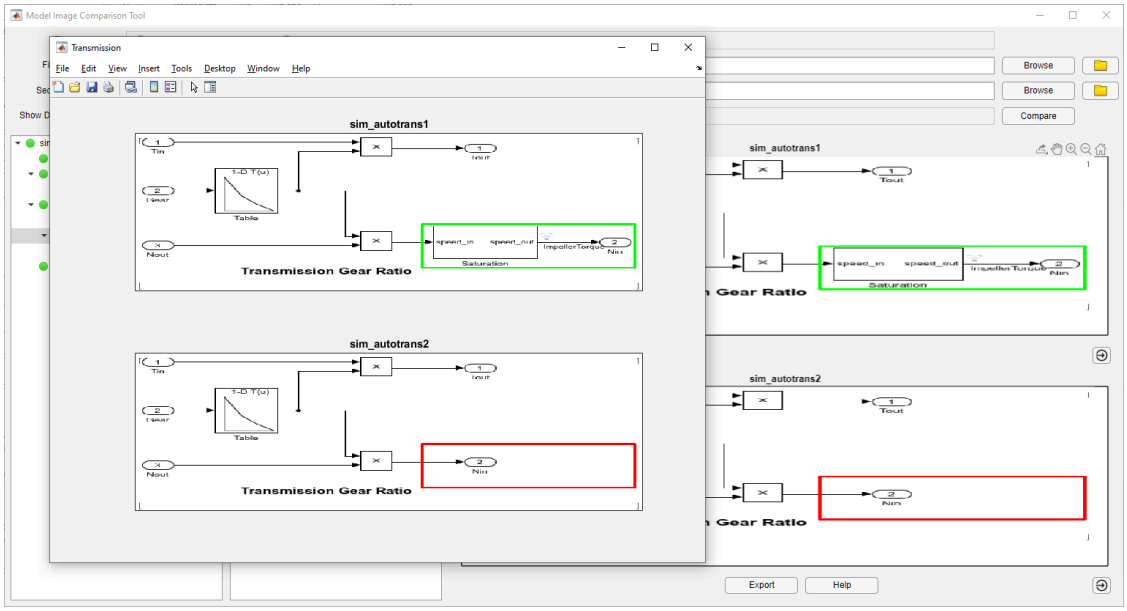
Look Inside Icon

- By using "Look Inside" button, the selected system will be opened in the corresponding model.

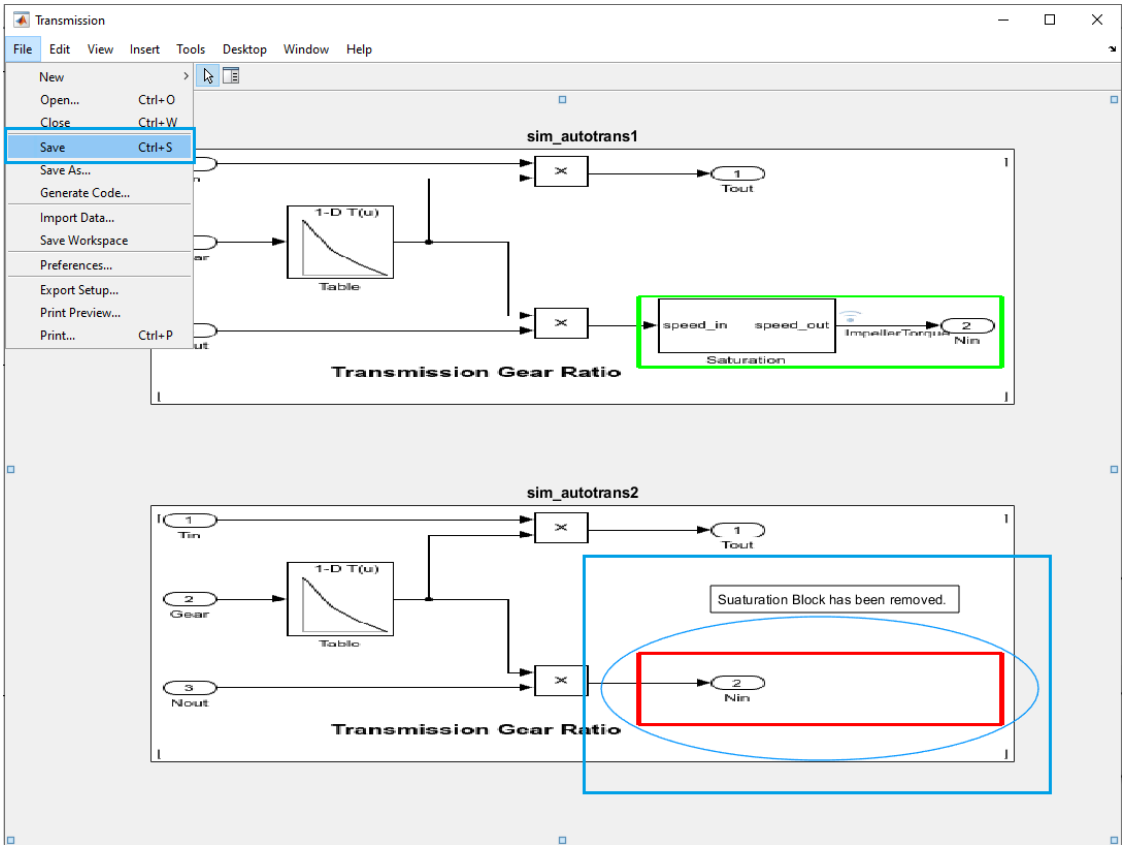


Export Button

- By using the Export button, the images of the selected system will be displayed in a separate figure.



- Now the images in the separate figure can also be edited and saved separately.



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