Czestochowa University of Technology

Faculty of Mechanical Engineering and Computer Science

Computer vision, pattern recognition and image retrieval

Laboratory 11

Topic: *Convolutional Neural Networks (CNN) - Understanding Results*

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Technical support for Matlab is available on the website: http://www.mathworks.com/

Exercise 1

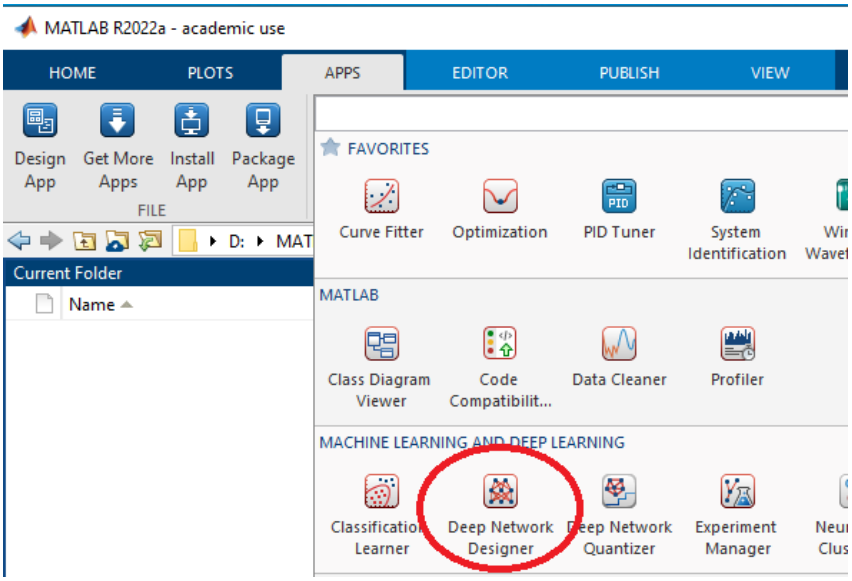
Use the 'Deep Network Designer' tool to analyze the architecture of the CNN model created in Lab 10. Then, click the 'Analyze' button. If there are no errors, save a screenshot and submit it as your response to the exercise.

As an answer, please send the screenshot of the analysis.

Additional materials

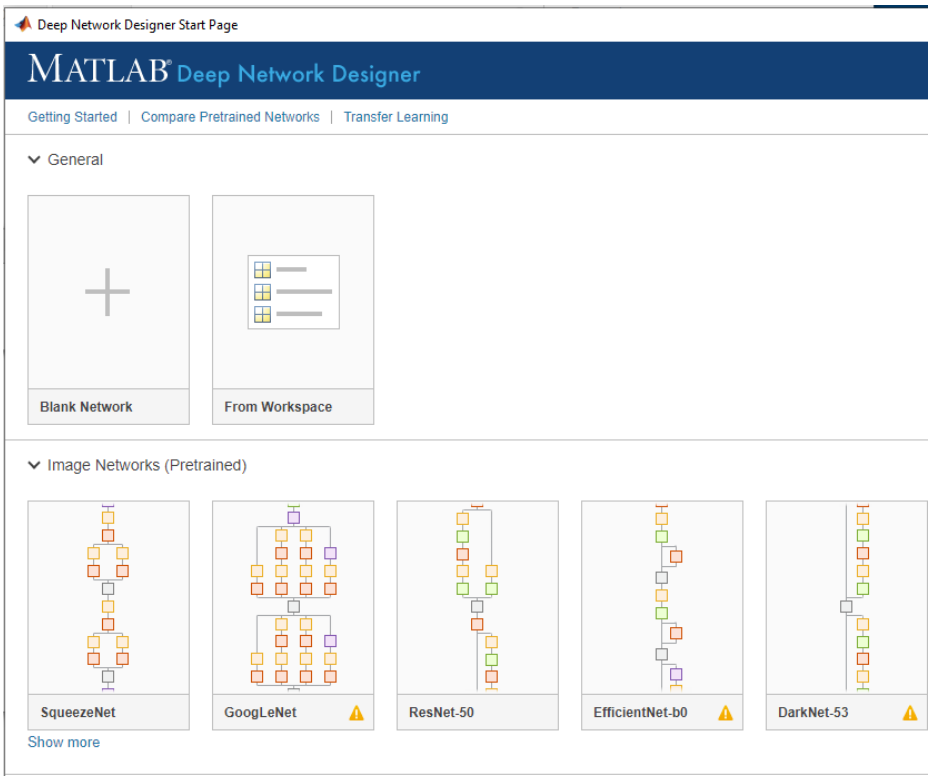
There is an application in the Matlab environment that facilitates the creation and modification of the architecture of various network models.

First, please open the wizard: "Deep Network Designer". It is available in "APPS".

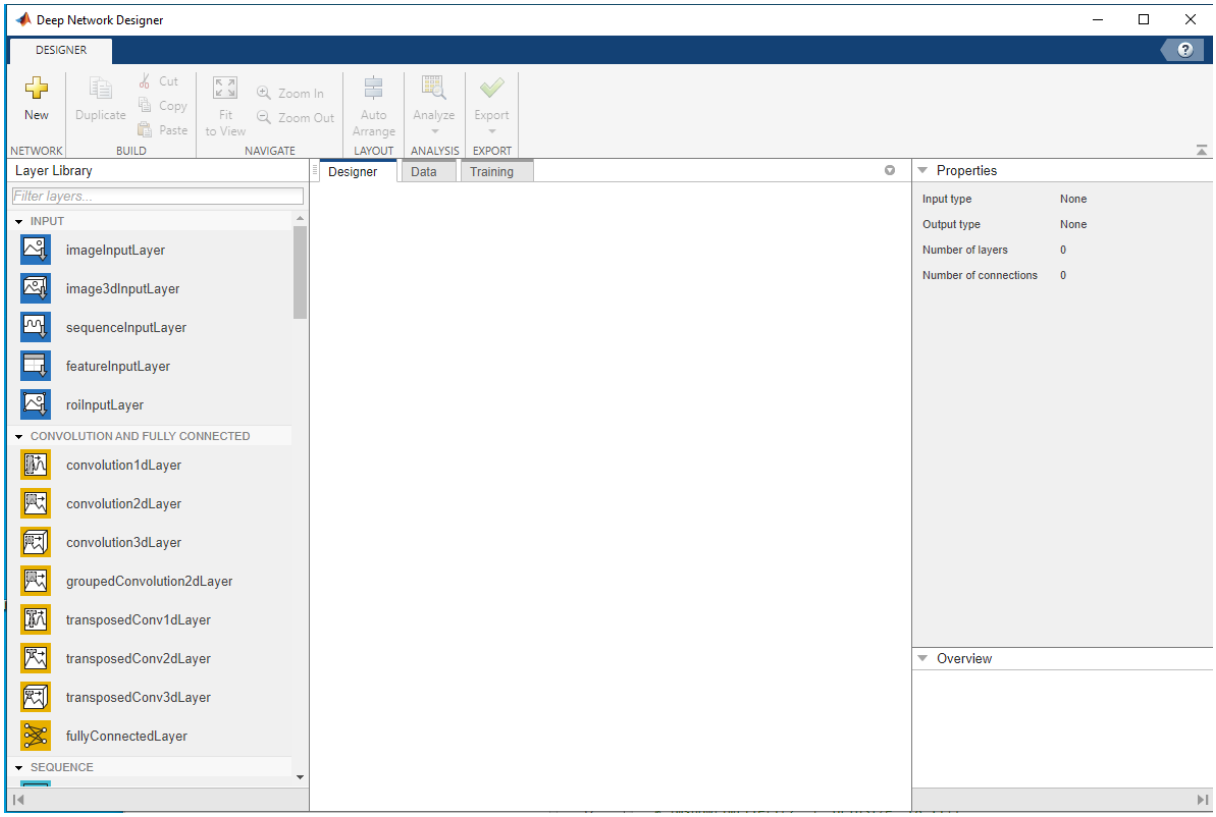


The "Deep Network Designer Start Page" window will appear, where you can select:

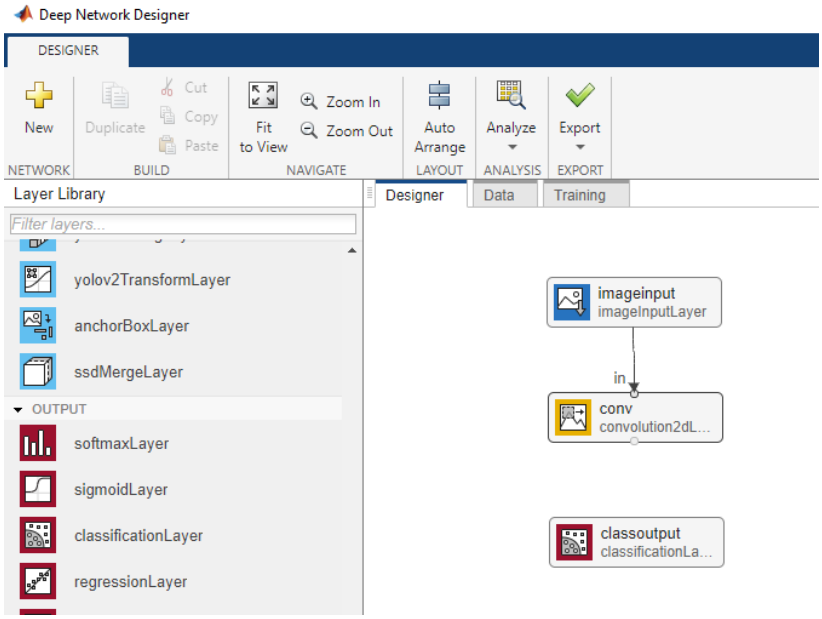
- "Blanc Network" if we want to create a new architecture;
- "From Workspace" if we want to open a previously created model architecture that is in the workspace;
- Or any of the pre-trained ones available in "Image Networks (Pretrained)". Please select "Blanc Network".



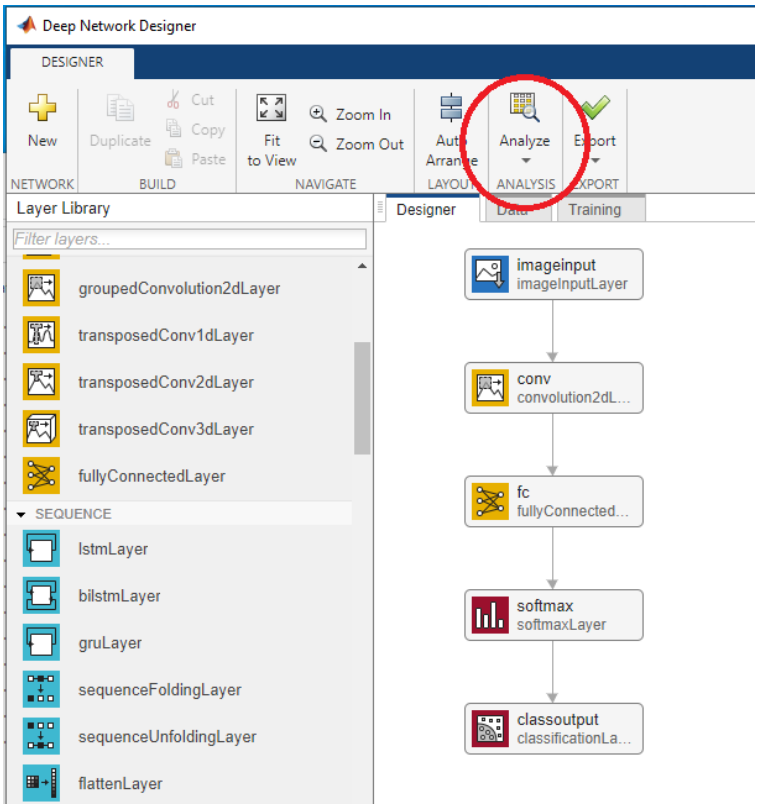
The target window for creating a new model opens.

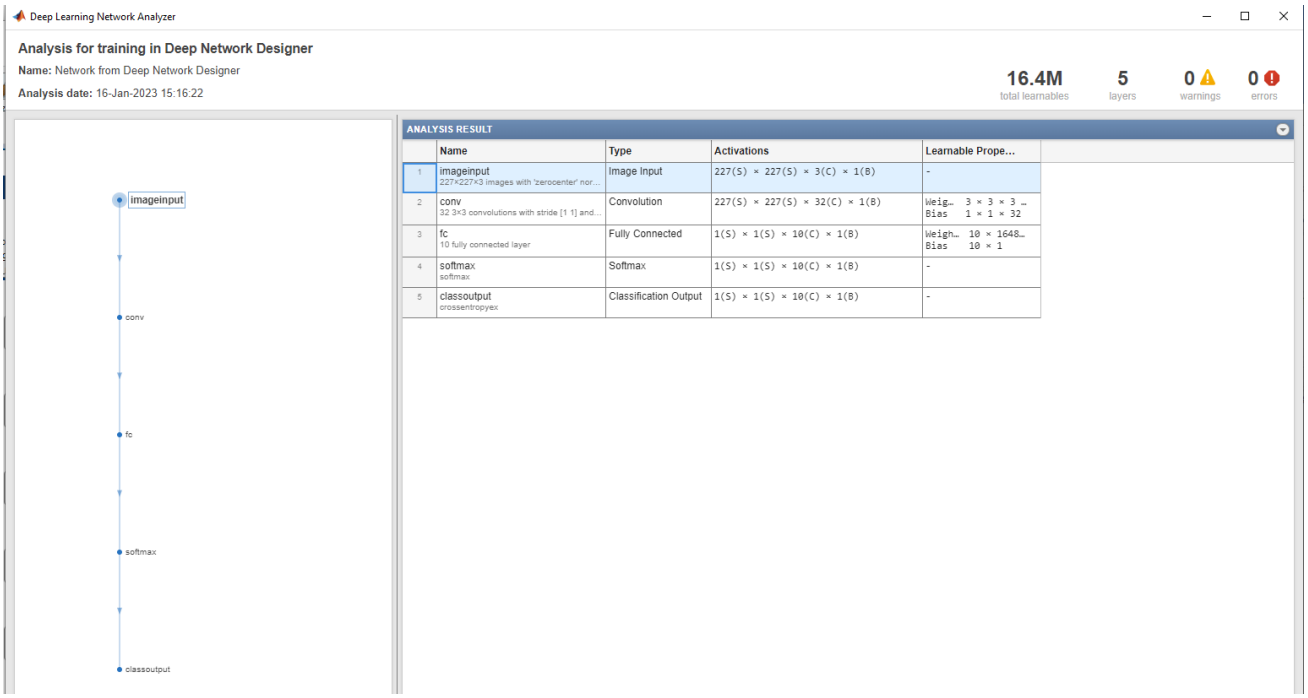


On the left are the available types of layers. Simply drag the desired layer into the 'Designer' field. Properties for the selected object are available on the right side, and they can be adjusted to our needs. Connect successive layers by dragging the arrow.



In the application "Deep Network Designer". it is possible to perform a preliminary analysis of the created/improved model architecture. To do this, select the "Analyze" button.





There are two more tabs, 'Data' and 'Training.' You can enter your own dataset to train the model and initiate the training process. If you are interested, more information can be found at the following link:

https://uk.mathworks.com/help/deeplearning/ref/deepnetworkdesigner-app.html?s_tid=srchtitle_Deep%20Network%20Designer_1