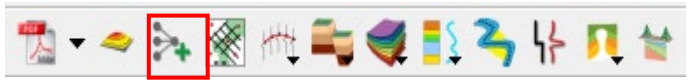
Exercise objective:

To condition data using the *Pre-trained models – Lundin GeoLab SimpleDenoise"* tool which is part of the machine learning plugin. In this exercise, we want to remove incoherent noise while trying to preserve amplitude ranges.

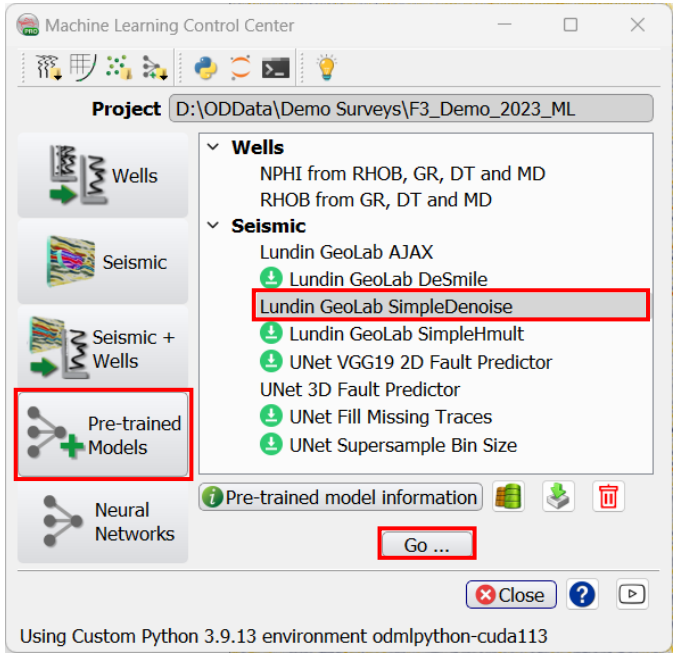
Seismic data Preparation

Seismic need to be available in the survey. If not, **import** seismic, preferably a volume not subject to any previous data conditioning or smoothing



Workflow:

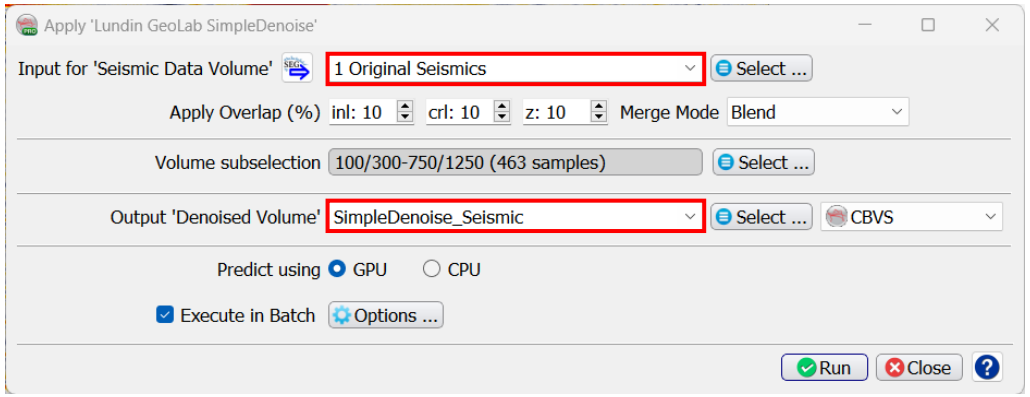
1. **Open** the Machine Learning Control Center with the  icon.
2. **Click** on "Pre-trained Models".
3. **Select** the 'Lunding GeoLab SimpleDenoise'' and **Press** Go.



Use the "Pre-trained Model Information" button to view parameters, datasets used and model types used in the training of the pre-trained model

Workflow cont'd:

4. The *"Apply* Lunding GeoLab SimpleDenoise*"* window pops up.

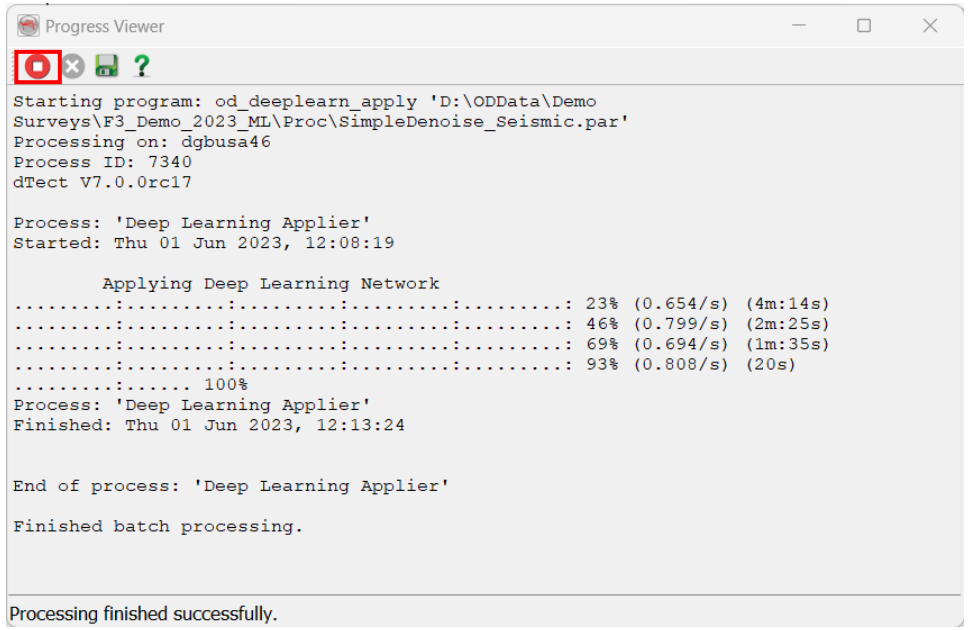


5. **Select** *Input Cube (e.g. 1 Original Seismic).*

6. ***Specify*** *a new name for the "Output Denoised Volume" (e.g. SimpleDenoise_Seismic).*

7. **Press** Run. If possible, predict using GPU as this is much faster

8. When the processing finish, **Press** button  to close the Progress Viewer window.



Workflow cont'd:

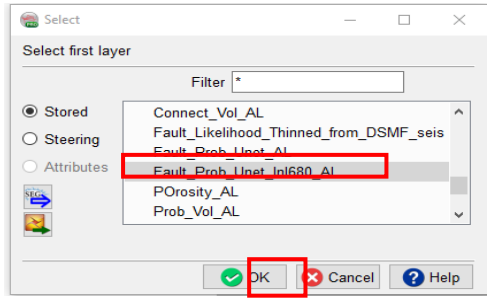
QC the output fault probability results on the In-line 680.

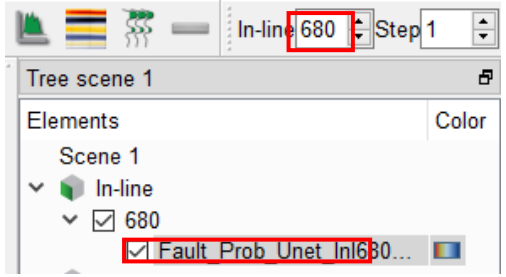
9. ***Right Mouse click*** *on In-line > Add and select Data > Store.* ***Select*** *the seismic that was used as input (1 Original Seismic), and then* **Press** OK.

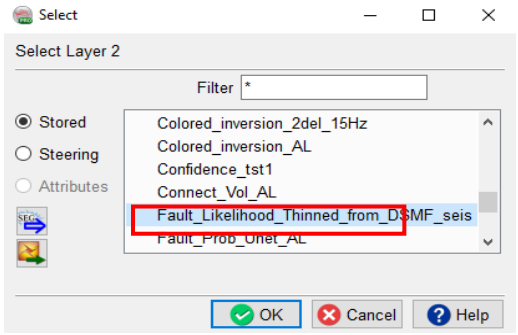
10. ***Type*** *in the Inline field: 680, and then* **Press** Enter.

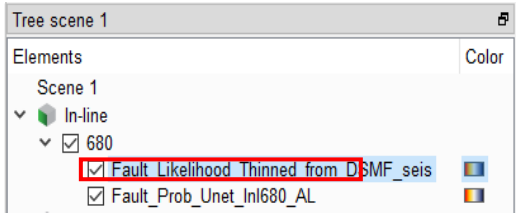
11. ***Right-Click*** *on Inline 680 > Add > Attribute >Stored.* ***Select*** *the smoothed volume (e.g. SimpleDenoise_Seismic), and* **Press OK**.

Tip: Additional seismic attributes can be added using checkboxes





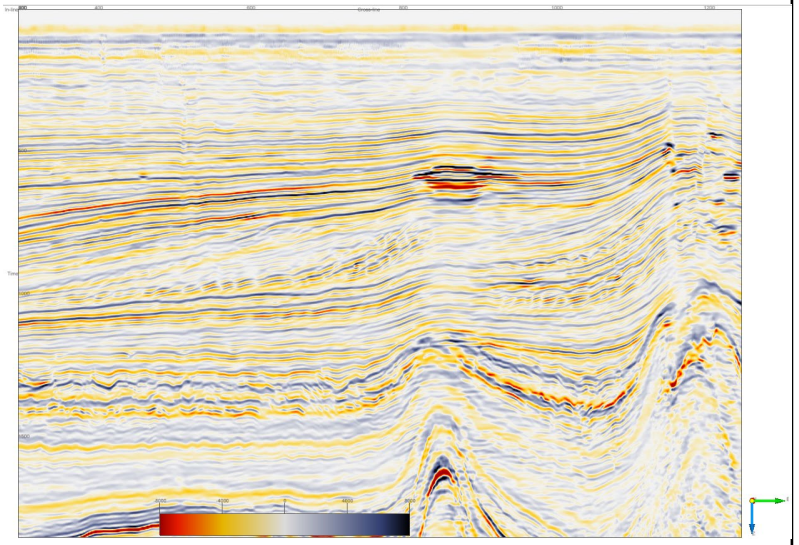




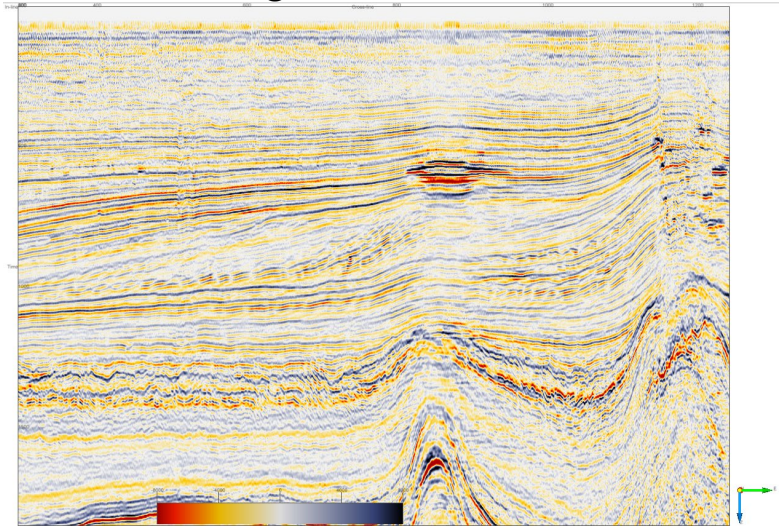
Workflow cont'd:

12. **Display** both and **Compare.** Note that the amplitude ranges *are preserved* in the smooth volume.

Smooth Volume



Original Seismic



Make a residual display by creating a Mathematics attribute: 'Smooth-Original'. Set the volumes respectively and add the attribute to the 3D scene. Note, that you will probably have to manually enter the amplitude ranges to scale