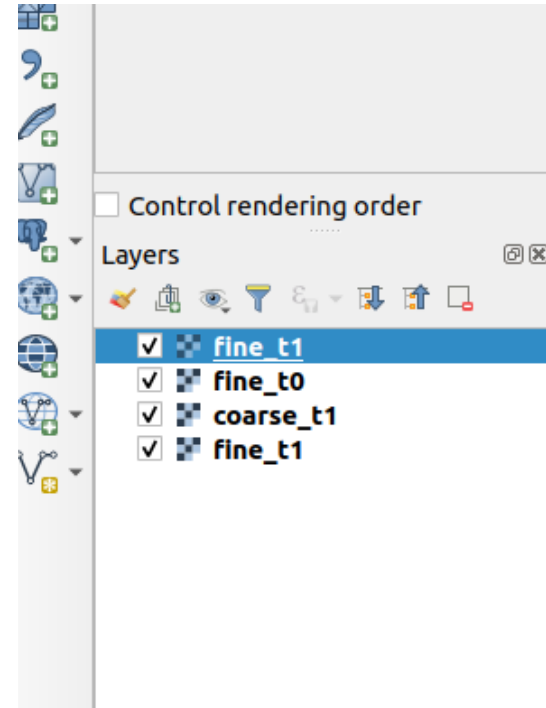


Manual for Image Fusion

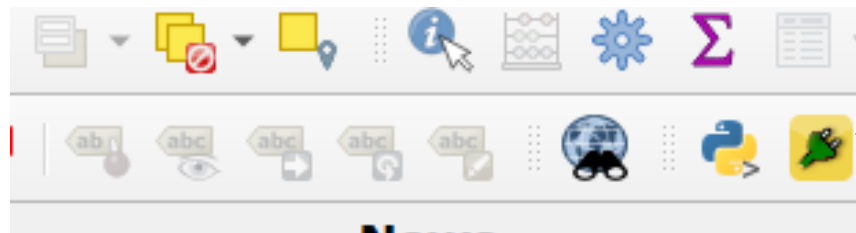
Required Libraries : geoAnalytics, pyswarms, numpy, scikit-learn, geotiff, gdal.

- Load raster files into QGIS.



Step 1: Load Raster Files

- Install Image Fusion plugin from zip file (Refer Installation manual).



Step 2 : Click on the icon

- Image Fusion GUI appears as shown below.

The screenshot shows a software window titled "Image Fusion" with a close button (X) in the top right corner. The window contains two tabs: "Predict" (selected) and "Evaluate".

Under the "Predict" tab, there are five rows of controls:

- Row 1: "Select coarse image at t0" with a dropdown menu and a "Get Layers" button.
- Row 2: "Select coarse image at t1" with a dropdown menu and a "Get Layers" button.
- Row 3: "Select fine image at t0" with a dropdown menu and a "Get Layers" button.
- Row 4: "Save File As:" with a text input field and a "Browse" button.
- Row 5: "Select Algorithm" with a dropdown menu showing "Standard-ESTDF".

Below these controls is a section titled "Parameters" containing several input fields:

- "Scale Factor" with a text input field containing "0".
- "Neighbours" with a text input field containing "0".
- "Iterations" with a text input field containing "0".
- A checkbox labeled "Use Recommended Values" which is currently unchecked.
- A series of five parameter ranges, each consisting of a text input field, a "to" label, and another text input field:
 - "Param_x" with inputs "0" and "0".
 - "Param_y" with inputs "0" and "0".
 - "shift_x" with inputs "0" and "0".
 - "shift_y" with inputs "0" and "0".
 - "Rotation Angle" with inputs "0" and "0".

At the bottom center of the window is a "Submit" button.

Image Fusion Prediction

- Step 1 : Click on Predict tab.
- Step 2 : Load missing pixels file into QGIS.
- Step 3 : Click on Get Layers button.
- Step 4 : Select layer from combo box.
- Step 5 : Click browse button, select output directory and enter output file name.
- Step 6: Select Algorithm from combo box.
- Step 7 : Enter parameters or use recommended values
- Step 8 : Click on submit button to run the program.

Step 1

Step 4

Step 3

Step 6

Step 5

Step 7

Step 8

Image Fusion

Predict Evaluate

Select coarse image at t0 coarse_t0 Get Layers

Select coarse image at t1 coarse_t1 Get Layers

Select fine image at t0 fine_t0 Get Layers

Save File As Browse

Select Algorithm Standard HISTIF

Parameters

Scale Factor 1 Neighbours 4

Iterations 200

☒ Use Recommended Values

FWHM_x 1 to 3

FWHM_y 1 to 3

Shift_x -1 to 1

Shift_y -1 to 1

Rotation Angle 35 to 65

Submit

Image Fusion Evaluation

- Step 1 : Click on Evaluate tab.
- Step 2 : Load predicted file into QGIS.
- Step 3 : Click on Get Layers button.
- Step 4 : Select ground truth and predicted layers from combo box.
- Step 5 : Click browse button, select output directory and enter output file name.
- Step 6 : Click on submit button.

The screenshot shows the 'Image Fusion' application window. It has two tabs: 'Predict' and 'Evaluate'. The 'Evaluate' tab is active, indicated by a yellow arrow labeled 'Step 1'. The interface contains three main sections: 'Select Ground Truth Layer', 'Select Predicted Layer', and 'Save File As'. Each section has a dropdown menu and a 'Get Layers' button. The 'Select Ground Truth Layer' dropdown is set to 'fine_t1', with a yellow arrow labeled 'Step 4' pointing to it. The 'Select Predicted Layer' dropdown is also set to 'fine_t1'. The 'Save File As' section has an empty text input field and a 'Browse' button, with a yellow arrow labeled 'Step 5' pointing to the 'Browse' button. A 'Submit' button is located at the bottom center, with a yellow arrow labeled 'Step 6' pointing to it. The 'Get Layers' button for the 'Select Ground Truth Layer' section is also highlighted with a yellow arrow labeled 'Step 3'.

