



3D Surface Alignment

Surface matching is fast and robust, even in the presence of image noise and incomplete overlap of the image volumes. Both volumes must contain common objects, which must be explicitly segmented from the grayscale image data and saved as a grayscale or binary image. A surface is extracted from both a base object and a match object that are preprocessed from the base volume and match volume, respectively. This exercise will demonstrate how to achieve an optimal registration of two 3D volumes based on corresponding surfaces.

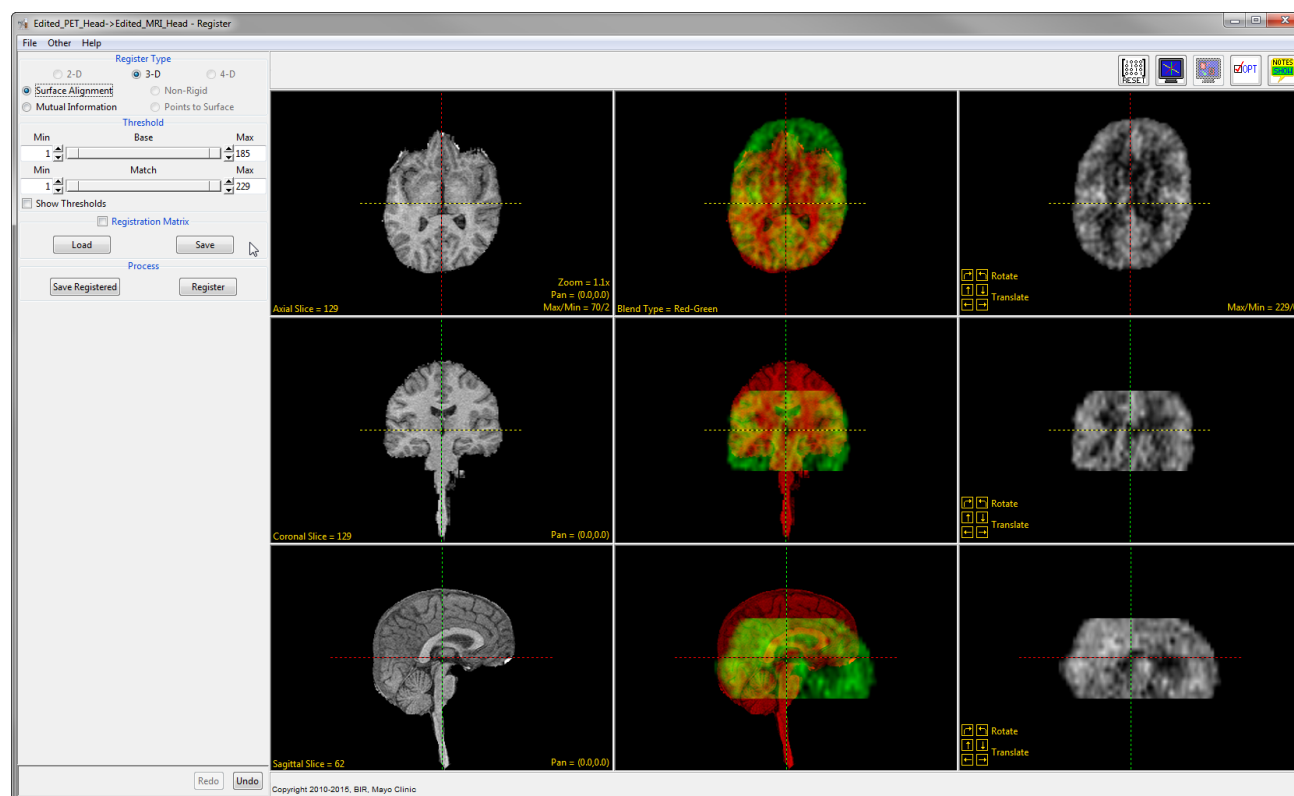
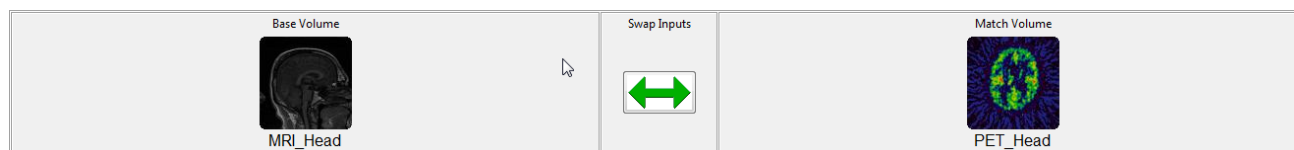
- Select the first data set (Edited_MRI_Head.avw), then while holding down the <Ctrl> key, select the second data set (Edited PET Head.avw).

Note that these data sets have been pre-segmented to common surfaces, in this case, the brain.

- Open Register.
- Select File > Input/Output Ports to view the input and output ports at the bottom of the main Register window. Make sure that Edited_ MRI_Head is the base volume, and Edited_PET_Head is the match volume.
- Select 3D and Surface Alignment from the Register Type options.



Download the Edited_MRI_Head
and Edited_PET_Head
data sets to follow along
<http://analyzedirect.com/data/>





- The interface contains nine image display panes.
 - First Column: Displays the Base volume.
 - Last Column: Displays the Match volume pre-scaled to the size of the base volume.
 - Middle Column: Displays the base and match volumes fused together.
 - Rows: Display the volumes in the axial, coronal and sagittal orientations.
- Examine the combined middle column to determine whether the volumes need to be registered.
- Click Register to register the two volumes.
- Click Save Registered to export the transformed PET data.
- Select the Transformed Save Type, Workspace, File and select Save Transformed.

