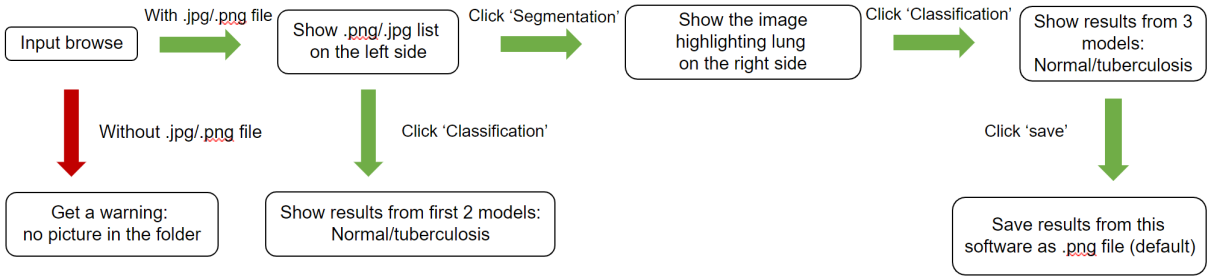
Documentation

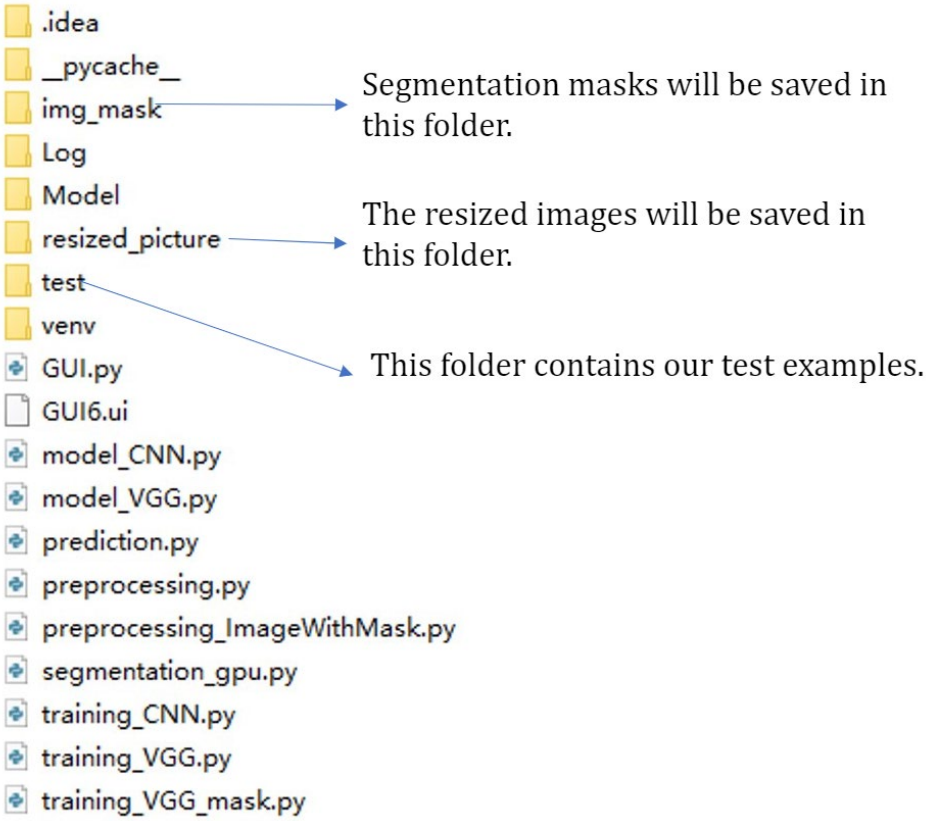
Welcome to use ***AIRadiologist***! Our software aims to segment the lung from a chest X-ray image and identify whether the patients suffer from tuberculosis. The figure below is the workflow of our software.



Instructions:

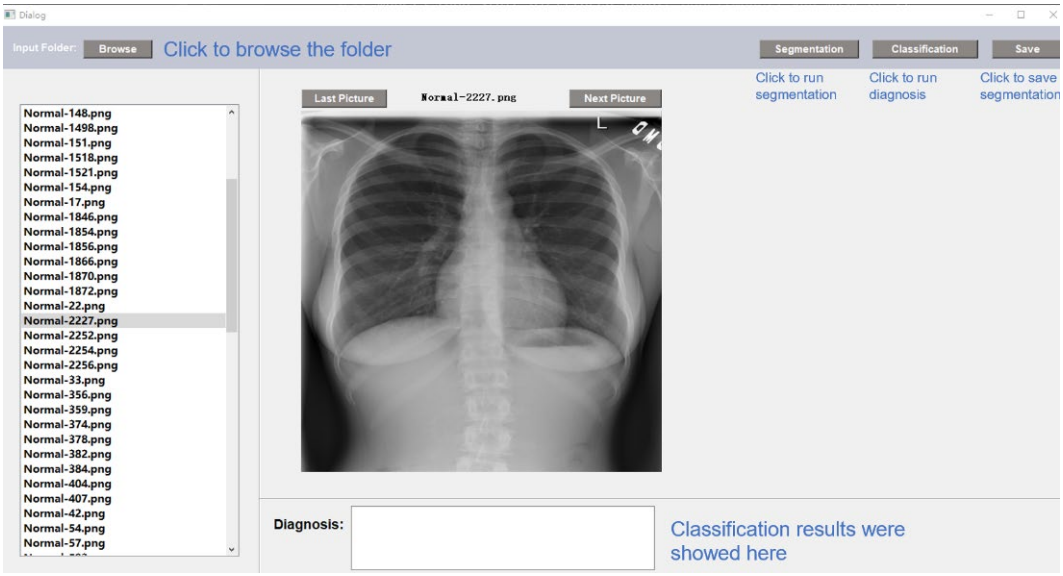
A. Open software

Run the Python code posted in GitHub to open ***AIRadiologist***.



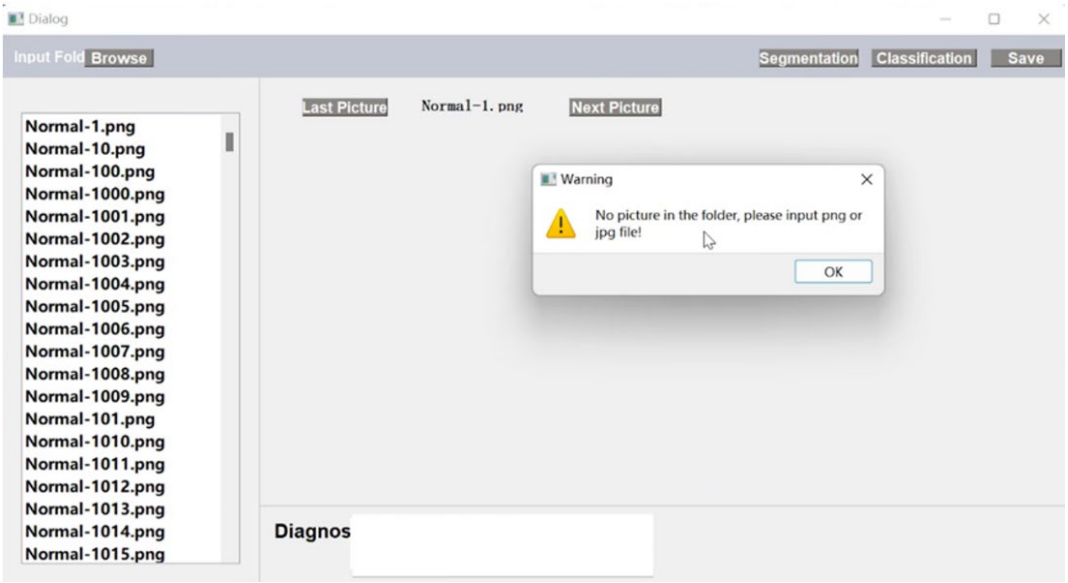
B. Description of the software interface

The figure below shows the screenshot of the software interface.



C. Input folder

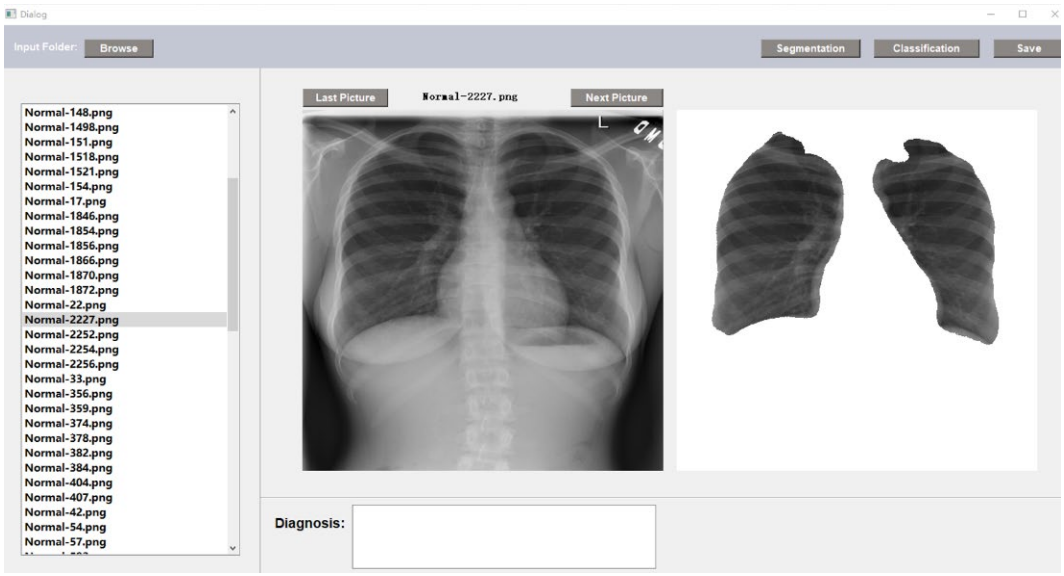
Click Browse to import PNG/JPG files of chest X-ray images. If the selected file folder does not contain PNG/JPG files, the software will give a warning message that no picture was found in the folder.



After you choose a correct folder, all the pictures will be imported into the software, and their file names will be listed on the left. The content and file name of the first picture are exhibited at the center. You can click any file name in the list to switch to a picture you want to see. Alternatively, you can click Last Picture and Next Picture to switch to adjacent pictures in the list

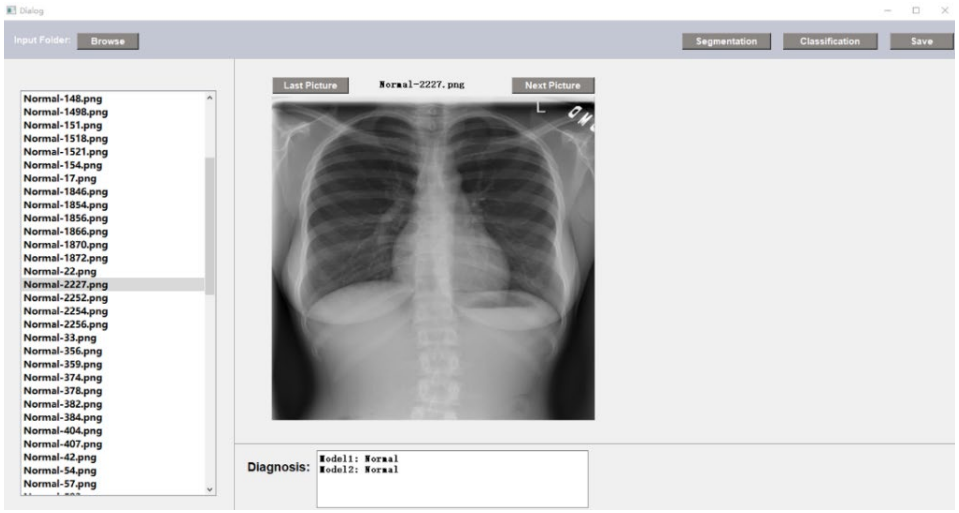
D. Segmentation

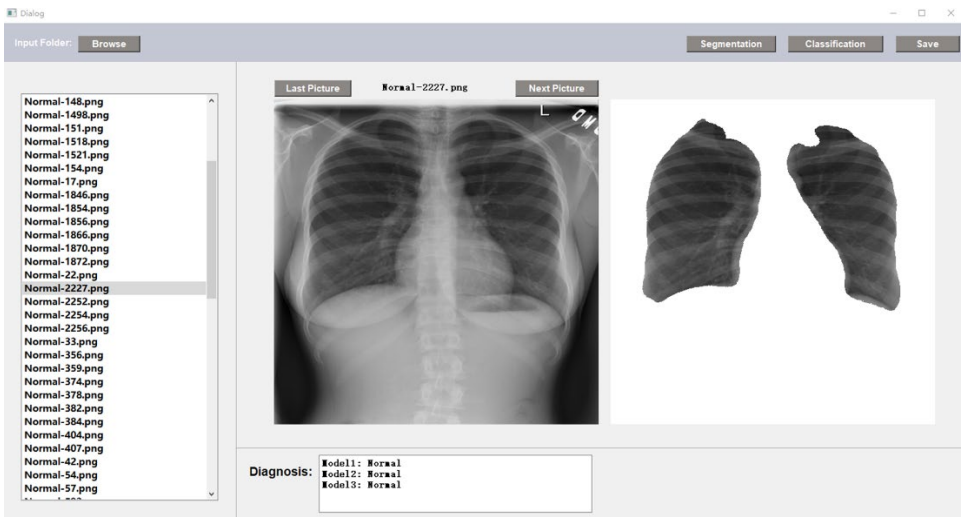
To segment the shape of lung structures, click Segmentation to perform the analysis. The segmented lung region will be displayed on the right



E. Diagnosis

Click Classification to obtain the diagnosis results in Diagnosis box, showed as ‘Normal’ or ‘Tuberculosis’. If segmentation was not performed, only the results of Model 1 and Model 2 will be included (Figure above). If segmentation was analyzed, the result of another classification model (Model 3) considering segmentation will be added to the box (Figure below).





F. Save the results

If you would like to save the segmentation results of X-ray images, click Save to save the segmentation image.