

SPECS OF WINDOWS-BASED MEDICAL IMAGE PROCESSING SOFTWARE

Scope of the Work:

We need coding, development, testing, and delivery of a customized Windows-based software to do image overlaying and processing on medical images.

The software should have following system & capabilities:

1. To select the path & open the MRI Image Disc (which is recorded using DICOM format) from a source selected by user (Local disk or Network drive). Then let user browse through various images on the disc shown in 2 directions (Front & Side view) and show them on the left side of software window (shown in Red box in attached PDF). The images could be read from source using any open-source/free DICOM viewer or in-app code.
2. Allow user to select & open two X-Ray images (Front & Side image) from local or network drive and show them in the middle section of software window (shown in Blue rectangle in attached PDF)
3. Have function for user to draw the Yellow and Green arrows on the 4 selected MRI & X-Ray images, which will be showing the matching points on images to be aligned for overlaying.
4. Overlay each X-Ray image on corresponding MRI image of same direction and resize & rotate the X-Ray image to match the drawn arrows on both images (i.e Yellow arrows to match each other to create proper overlay, and Green arrows match together). Then show the overlayed image in the left part of software window (shown in Green rectangle)
5. After overlay give various functions/buttons/menues to change the size, rotation, brightness, opacity, color, saturation, etc. on overlayed image. Also allow erasing parts of overlay to reveal the bottom image as shown in attached sample video., and finally have shortcut function to save or print all or selection of the images shown on screen at any time for records
6. Software to be compatible & running on Win10 & Win11 OS on laptop. In future stages we want to develop MacOS & Android versions of software. So better the code be in a format flexible for future OS versions.

7. Comprehensive testing of the Software by client will be done to ensure proper & matching quality and functionality. Couple of revisions might be needed until customer gets satisfactory results.
8. The first version of software to be delivered in 10days time, subsequent revisions to be applied within 1 week from each request.
9. We will need to receive full Source code of the Software & installation package to install software on multiple PCs & laptops as required.
10. Proper Documentation and user manuals will be required. Also may need to provide security/safety certificate & data of software to be approved by IT team of client and allow installation on their network PCs
11. The Client will own all rights, title, and interests, including any intellectual property rights, in the Software developed perpetually. Developer will not be allowed to use, share, resell, redistribute or modify the software under any circumstances and for any purpose without written approval from Client.
12. In **future versions** we would like to add AI image processing capability to software to learn and do following 2 things automatically:
 - Firstly, browse the various images on MRI disc and select best ones that will match the X-Ray image on its own and without user's help.
 - Secondly. using AI image processing techniques recognize the matching points/bones on X-Ray & MRI images (without need for user to draw Yellow & Green arrows) and overlay them automatically.

Developer to let us know if prior coding needs to be done from first to enable software do learning over time from user on how to do these 2 tasks automatically in future.