MI4WEB

Nowadays, the zero-footprint fully web-based visualization is making its way and gaining wider acceptance within the medical imaging community. Since the level of acceptance is growing up, the necessity of upgrading and building new functionalities and features is mandatory, so that it can continue to gain recognition and grow.

Fig1- Brain CT Scan

OHIF

One of these applications is OHIF, a zero-footprint, open source and web-based medical imaging viewer, that gives us the ability to add and configure extensions, which makes it very expandable. Therefore , this platform will be the starting point of our project.

Image Reformating

Here we can see Multiplanar Synchronization, this feature allows you to simultaneously analyse the three different views (Axial, Sagittal and Coronal) and when you interact with a view using either the colored lines or the circles all the other views change synchronously. In this feature is possible to use MIP and MinIP in order to see hyperdense and hypodense structures, respectively.

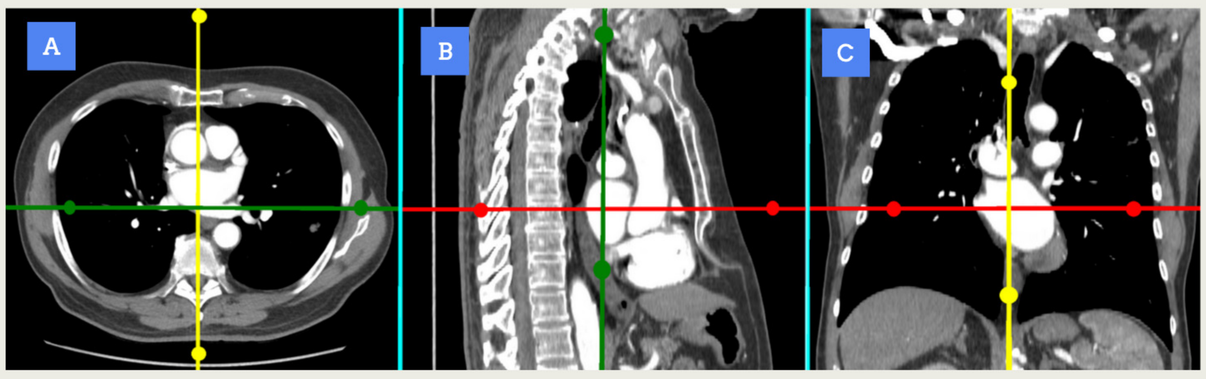

Fig2- Multiplaner Syncronization

A Axial View

B Sagittal View

C Coronal View

Reports

The Clinical Imaging Staff can write reports about the medical image studies.

The interface for this functionality has the fields for the user to fill, and using them it creates a structured medical report.

Afterwards the report is saved in a database linked to the id of the DICOM study, subsequently the reports can be viewed by the Referring Image Staff.

MI4WEB

10/6/2022 1:42

Patient : Johnny Sins

Proccess Number : 376251432

Anotations

The usual bone trabecular pattern is preserved. Regular alignment of the vertebral bodies, respecting the physiological curvature. Vertebral bodies maintain expected height. Disc spaces maintained the amplitude.

With the best wishes:

Dr. André Freixo

Fig3- Generated Report

Main Features

Even though OHIF already has a lot of functionalities, it would be helpful for the healthcare professionals to have some additional features such as:

1. **Basic transactions for medical image import and export;**
2. **DICOM import and export;**
3. **Multiplaner image display functionalities;**
4. **3D Display tools as VTK ;**
5. **Creation of Medical Reports;**
6. **Admin Interface to manage the application software and the user permissions;**

3D Views

Our application allows you to view 3D images where you can zoom and rotate. You can apply one of several transfer functions available, in order to see different types of organs and structures of the human body like: the lungs, the fat tissue, the bones . Furthermore, it's possible to edit the opacity function interactively through multiple Gaussian functions. It is possible to change the colors to find the best view.

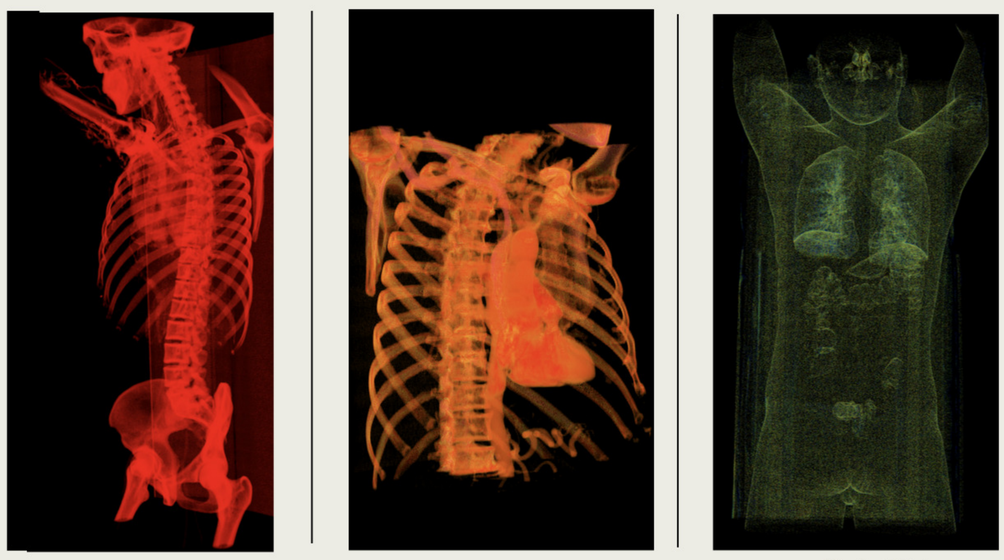

Fig4 - 3D Images

Admin Dashboard

In order to help the maintenance of the application we decided to create new interfaces for an Admin to manage the application software and user permissions.

Admin Features:

1. **Dashboard:** Analyse important information about the ORTHANC server;
2. **Manage Access:** Manage user access levels;
3. **DICOM Nodes:** Examine relevant information about the DICOM nodes;
4. **Extensions Management:** Check viewer extensions and see their status.

Informatics Project 2022
LEI

View our Website
https://thescorpoi.github.io

Team: Pedro Sobral
Marta Fradique, Eva Bartolomeu
André Freixo, Daniel Figueiredo

Coordinators:
Augusto SIlva
Joaquim Madeira

universidade de aveiro
deti
ieeta