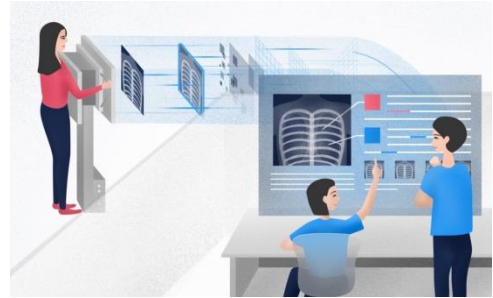PecPost MedScan

CSN302 Software Engineering

Project Write-up

Semester 21221

Team Members:

Harsh Kumar 19103016   Viraj Reathia 19103075

Samir Alam 19103092   Abhishek Kumar 19103103

Background

In order for a patient to undergo a medical checkup, he/she had to visit the Lab/Hospital to get the test done. Once the report was generated from there, it had to be processed in several stages to get the exact measurements only after which the real treatment could start.

Motivation

The motivation behind the making of this project was to build a web application interface which allows any medical expert to quickly access the required measurement values after processing the input image.

In sync to the above process we also thought of creating a post sharing platform specifically for the Hospital authorities wherein the expert calculating the values can directly share them as a post to the concerned doctors/experts , or to share any other important messages among themselves.

About/Preview

We have been provided with a famous Bio-medical image segmentation deep learning based model named U-Net by our mentor for the project and we were assigned the task of creating a web application for the same. The authorized user after logging in to our Automated Measurement System is given the option to select the input image to upload which is then fed to the image segmentation model followed by key-point detection and calculation of parameters including sulcus angle, facet asymmetry and lateral trochlear inclination.

A handy report can be saved by the user as a pdf and if required they can also store these measured values assigned to the patient with unique patient id into the database which can be used for analysis of improvement in the measured values.

We have also introduced facility to share the generated report with any Medical Expert/Doctor as a post on a communication platform which they could view and recommend further treatment. This platform can also be used by the Hospital authorities to convey any important messages among themselves by sharing the associated posts with the registered users of the platform.

Technology Overview

- Flask

- HTML, CSS, Bootstrap

- ReactJS