

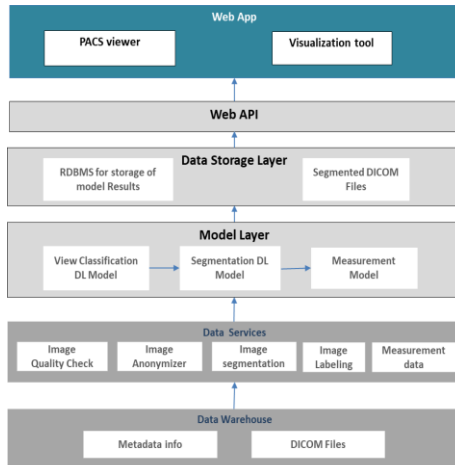
# Case Study: Automated Echo Interpretation

## Client Requirements

Client's current quality of echocardiogram analysis largely depends on the skills of the technician and cardiologist.

The measurements required for regulatory compliance in the reporting template consume about 30-45 minutes on an average of the cardiologist or the sonographer's time.

So, the client wanted to build a scalable automated pipeline for echocardiogram interpretation & Support clinical decision support system for primary care physicians and cardiologists



Solution Schematic

## CitiusTech Services:

- Deep learning models that classify, segment, and measure echocardiograms
- VGG16 used for image classification
- A CNN and U-Net models were trained for different commonly acquired echocardiographic views like PLAX, parasternal short axis, etc.
- The DICOM data/images are pre-processed to be fed into the models
- The pre-processed images enabled the models to interpret the Echo image according to their view, segmentation, measurements, and also disease classification
- Pipeline was scalable to handle typical loads observed in radiology practice.
- Extensible to realize a fully automated pipeline for echocardiogram analysis

## Value Delivered:

- 90% model accuracy for Segmentation of interest region
- DICOM Images and videos are pre-processed to train models
- CNN Based segmentation