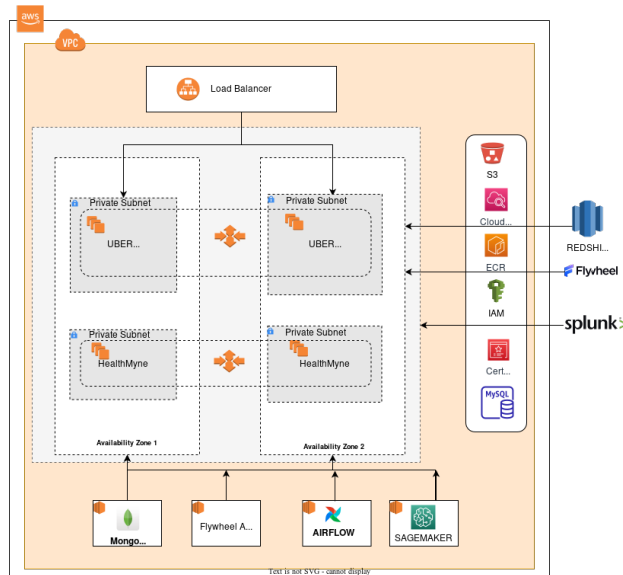# Crowd Sourcing Image Annotation Platform

Client Requirements

- Build a Platform to support **specialized projects** that require inputs from medical specialists in various fields:
  - Radiology Annotations
  - Algorithm annotation validations
  - Clinical Data Abstraction/Curation
  - Clinical Data Translation
- Build a platform that has ability to outsource the **annotation work to external experts** without formal onboarding.

Solution Schematic

CitiusTech Solution

- Implemented Micro service architecture in AWS EKS with Zero downtime to provide a durable environment for Radiologist workflow.
- Implemented data pipeline to provide pre validation of the Clinical images / data before annotation on open-source airflow.
- Provided a platform to launch pre-configured EC2 instances using AMI and Auto scaling groups for the Radiologists workflows. This is implemented using the AWS SDK configured application API.
- Instances are deployed in different Availability zones to make it highly available, an Auto scaling group has been set up to manage any unfortunate events happening with instances, it will make sure that desired instances are up and running.

Value Delivered

- Developed a scalable architecture with potential to support multiple third-party DICOM Viewers to support.
- Enabled business users to manage end to end configurable project workflows.
- VPN-Free infrastructure to enable external users to access the platform.
- Developed a responsive UI and a secured RESTful API environment representing business functionalities.
- Airflow pipeline to support auto quality check on annotation generated from the workflow.
- 7+ Complex business workflows.
- 10K+ DICOM images annotated.
- 50+ Medical experts on-boarded across globe.
- 2+ DICOM Viewers on boarded.