**Project Design Phase-I**
**Solution Architecture**

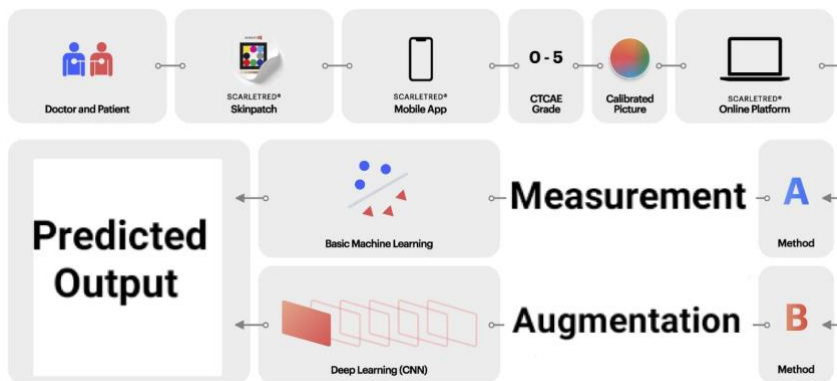| | |
|---|---|
| Date | 19 Septembar 2022 |
| Team ID | PNT2022TMID33185 |
| Project Name | AI- based localization and classification of skin disease with erythema |
| Maximum Marks | 4 Marks |

## Solution Architecture Diagram:



*Figure 1: Architecture and data flow to find the skin disease*

- Significant advancements in computer -aided diagnostics using artificial intelligence(AI).
- No viable method for radiation- induced skin reaction(RISR) analysis and classification is available.
- The objective of this single-center study was to develop machine learning and deep learning approaches using deep convolutional neural networks(CNNs) for automatic classification of RISRs.
- According to the Common Terminology Criteria for Adverse Events(CTCAE) grading system.
- Scarletred Vision , novel and state-of-the-art digital skin imaging method capable of remote monitoring and objective assessment of acute RISRs was used to convert 2D digital skin images using the CIELAB color space and conduct measurements.
- A set of different machine learning and deep convolutional neural network-based algorithms has been explored for the automatic classification of RISRs.
- This study is the first to focus on erythema in radiation-dermatitis and produces benchmark results using machine learning models.
- The outcome of this study validates that the proposed system can act as a pre-screening and decision support tool for oncologists or patients to provide fast , reliable , and efficient assessment of erythema grading.