Software Requirements Specification (SRS) Document

Team 9
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Brief problem statement

Malnutrition is a major issue in rural India affecting young children. Severe malnutrition can cause stunted growth and early death. The current method of tracking malnutrition is laborious. A new method involves using a camera to measure height and weight. The data is used to monitor malnutrition and longitudinal growth.

Users profile

We have identified two user groups that the program will be used by:

1. Ground personnel, in charge of capturing the photos and updating estimates as necessary. They will be on ground workers of the organizations.

2. System administrator, who will be in-charge of system upkeep and has access to data compiled by all ground workers. He will be keeping track of the data for further study.

Project Modules

1. Frontend / User Interface: Web application the end users and administration will have direct access to. This will contain all features and functionality of the project.

2. Backend / API: The processing, storage and study of the data provided will be done here, using sophisticated algorithms.

Feature requirements (described using use cases)

1. Frontend / User Interface:
    1.1. Regular Ground Personnel Application:
        1.1.1. Basic UI.
            Basic React based Application UI built for calibration, uploading data and viewing of results.
        1.1.2. User registration.
            User registration UI / form for registering new patients / persons. This registration will be used to keep track of person's malnutrition status over time.
        1.1.3. Device Calibration.
            Calibrating the device using images of the reference (checker pattern) with pictures from known heights.
        1.1.4. Uploading data.
            1.1.4.1. Form for identifying / choosing patient / person giving data.
                User form for filling details on who is giving the data. This will used to identify the person in each upload, after their initial registration.
            1.1.4.2. Uploading image.

Uploading the input image from device or taking a picture from within the web application.

1.1.5. Displaying results.

Displaying the malnutrition status received from the backend / API post processing. This result will be used to decide person's status at current period.

1.2. Administration Application:

1.2.1. All features and functionalities of the Regular Ground Personnel Application.

1.2.2. Admin Access.

1.2.2.1. Admin authentication.

Form / Login of the admin for authenticating admin to all uploaded data from the server.

1.2.2.2. Retrieving data.

UI for the admin to retrieve historical data of all people using the web application. This data will be used to track malnutrition status of the patients / users over time and provide feedback on their nutritional status.

2. Backend / API:

2.1. Getting input.

Get input image and other data from the web application to the server.

2.2. Processing input.

2.2.1.Estimating height.

Using sophisticated algorithms to estimate the height of the person using the image received.

2.2.2. Finding weight.

Using sophisticated character recognition algorithms/methods to find the weight of the person.

2.2.3. Processing data.

Generating malnutrition status of the person using the height and weight computed.

2.3. Storage and response.

Storing the calculated results in server and sending back the results as API response.

2.4. Admin access.

2.4.1. Admin authentication.

Authenticate the device based on the admin credentials given.

2.4.2. Retrieving data.

Retrieving all users data based on admin requests, and sending data as API response.