

# ALIMENTUM

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# OVERVIEW

- **App Name:** Alimentum
- **App Description:** A Machine Learning powered app for research into malnourishment. It detects malnourishment in infants, and recommends an educative diagnosis.
- **Track:** Youth Individual
- **Category:** Education & Research



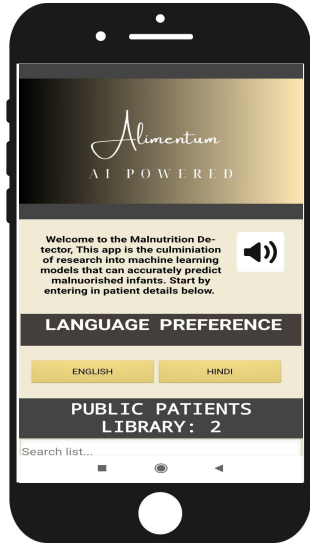
# THEME

**In 100 words or less, describe the problem that you chose to address, and why you were interested in solving it. Please note that this portion of your submission will be published if you are selected as a finalist or winner.**

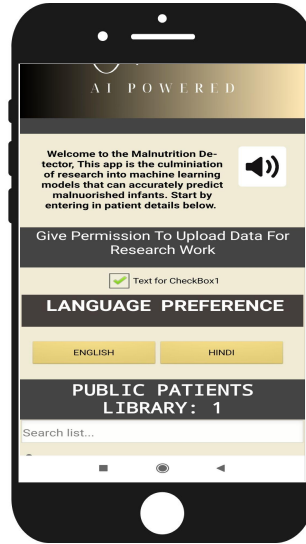
In developing countries 3.1 million children deaths are attributed to malnutrition. With limited access to medical knowledge, many cases go untreated due to a lack of education. In India, a lack of research into novel ways of solving the crisis, and poor healthcare access intensifies the problem. This motive propelled me to create an app that uses Machine Learning to detect and classify the respective types of malnourishment, and recommends a educative diagnosis to the patients. This data if permitted by the user is used for research.



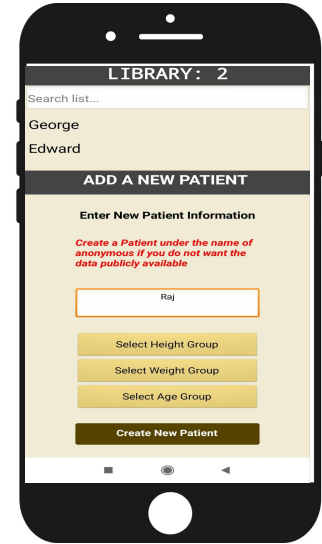
# INSTRUCTIONS



Step 1: Home Screen. Hindi as a language as well as text to speech options are available.



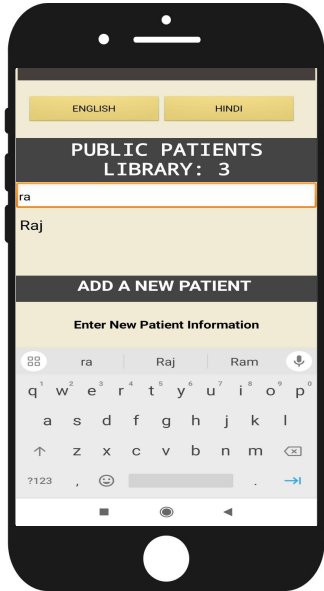
Step 2: Give permission to store images for research.



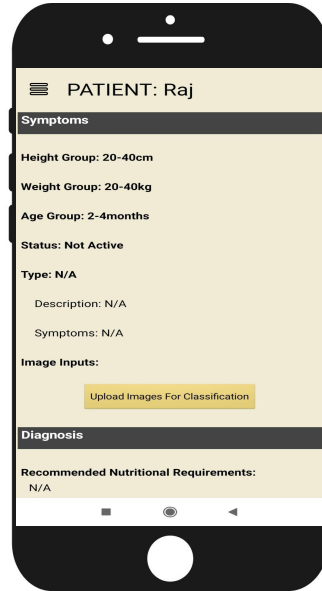
Step 3: Create new patient by filling in the required information.



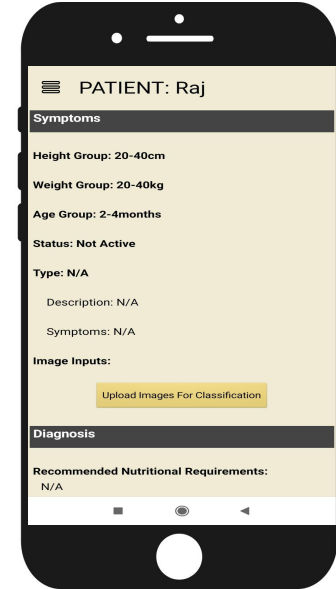
# INSTRUCTIONS



Step 4: On selecting a patient from the list, a new screen will open



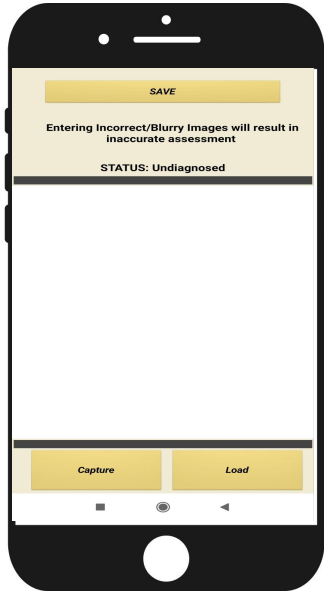
Step 5: This screen contains diagnosis, patient information, as well as nutritional recommendations



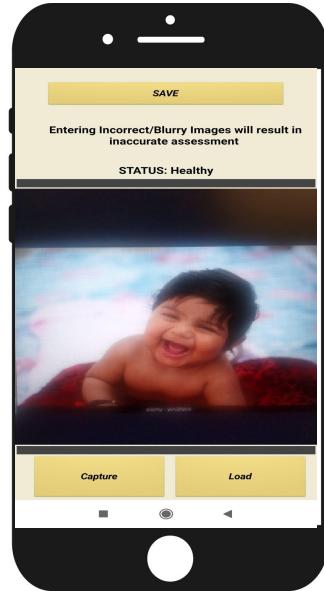
Step 6: Click on the upload images button



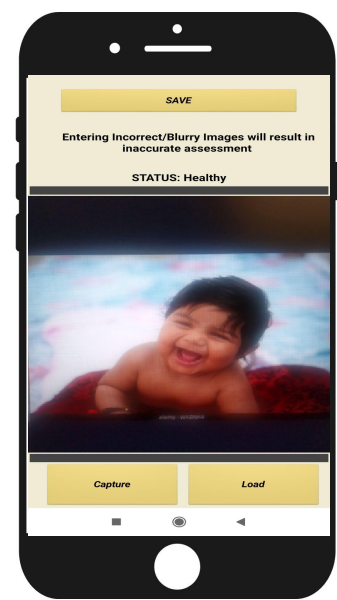
# INSTRUCTIONS



Step 7: Press capture and click an image of the patient



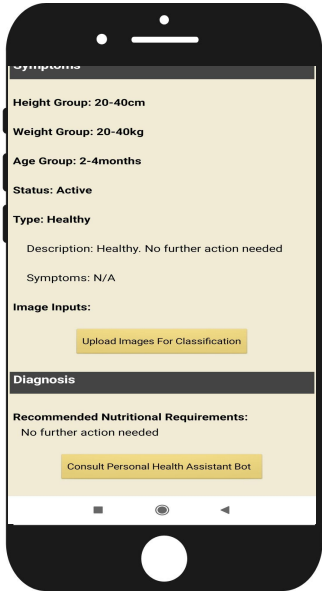
Step 8: The machine learning model will classify the patient



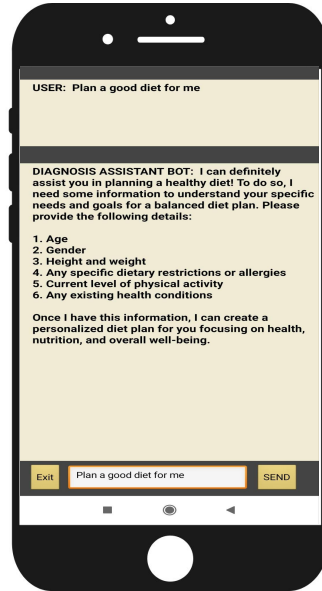
Step 9: Press Save. Images are not saved without permission.



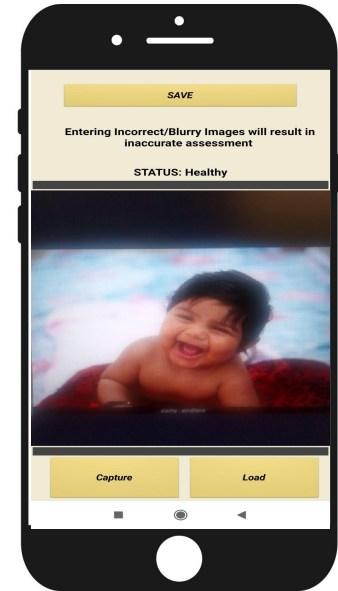
# INSTRUCTIONS



Step 10: A diagnosis will be displayed along with treatment recommendations.



Step 11: Additional information can be obtained from a ChatBot designed for the purpose.



Step 12: Images saved can be loaded.



# LIMITATIONS

**In 100 words or less, describe the limitations of your app and what people should carefully consider when using it.**

Using a Machine Learning approach is not as accurate as a certified doctor's diagnosis, and the app may give incorrect classifications especially when the images are not clear or the image is not of a child.

People who wish to use the app without sharing data publicly can do so with anonymous patient name.





# ACKNOWLEDGEMENTS

**Please list the names of anyone who helped you with developing your app, and describe what type of help they provided.**

- Reetu Shekhar Jain: Mentor, oversaw and helped me plan the project.



# APPENDIX

The data that the models were trained on is a set of 673 images of healthy or malnourished children, and was collected from various sources on the internet.