


Ideation Phase

Brainstorm & Idea Prioritization Template


Date	27 September 2022
Team ID	PNT2022TMID13086
Project Name	AI-Powered Nutrition Analyzer For Fitness Enthusiasts
Maximum Marks	4 Marks


Step-1: Team Gathering, Collaboration and Select the Problem Statement


Template



Brainstorm & idea prioritization

 **10 minutes** to prepare

 **1 hour** to collaborate


 **4 people**

19I215 Gowthaam G
19I229 Lakshana C R
19I262 Abishavarthana P
20I435 Raja Kumar I

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Define your problem statement

The main aim of the project is to building a model which is used for classifying the fruit depends on the different characteristics like colour, shape, texture etc. Here the user can capture the images of different fruits and then the image will be sent the trained model. The model analyses the image and detect the nutrition based on the fruits like (Sugar, Fibre, Protein, Calories, etc.).

 **5 minutes**


PROBLEM


AI-Powered Nutrition Analyzer For Fitness Enthusiasts





Key rules of brainstorming


To run an smooth and productive session


 Stay in topic.

 Encourage wild ideas.

 Defer judgment.

 Listen to others.

 Go for volume.

 If possible, be visual.

Step-2: Brainstorm, Idea Listing and Grouping

2

Brainstorm

Write down any ideas that come to mind that address your problem statement.

10 minutes

TIP

You can select a sticky note and hit the pencil icon to switch to sketch mode to start drawing!

Gowthaam G

A Progressive Spinal Net, progressive computational network for FC layers of deep networks can be used

A chordate nervous system, which has a special way of connecting a lot of sensing data and making local decisions, is mimicked in the construction of SpinalNet.

Three datasets with different sizes and levels of complexity can be used to test the model

To use various pretrained models provided in the PyTorch library's Torchvision package. And look into how well they can classify fine grained photos.

Lakshana C R

Based on the nutrients available in the fruits classify them

Three well-known classification models—Random Forest, K-Nearest Neighbors (KNN), and Support Vector Machine can be used to classify images to categorise fruits.

Convolutional Neural Networks (ConNN)* deep learning model for classification

Keras platform was used to construct the suggested model.

Abishavarthana P

Interdisciplinary approaches should be used to address food and recipe research in order to address health and sustainability issues.

These approaches should combine NLP and other AI techniques with historical food research, food science, nutrition, and sustainability expertise.

A technique breaks down a visual image of a date into its component colours.

The local texture descriptor, such as a Weber local descriptor (WLD) histogram or a local binary pattern (LBP), is then applied to each component in order to encode the texture pattern of the date.

Raja Kumar I

Brand-new fruit classification method called HPA-SLFN can be implemented for classification as it gives better results when compared to other techniques

To characterise the image, the texture patterns from each component are combined.

The accuracy and loss curves were created using various combinations of hidden layers.

A computer vision-based approaches and algorithms for fruit recognition and classification.

3

Group Ideas

Take turns sharing your ideas while clustering similar or related notes as you go. In the last 10 minutes, give each cluster a sentence-like label. If a cluster is bigger than six sticky notes, try and see if you and break it up into smaller sub-groups.

20 minutes

Features & Extraction

Based on the nutrients available in the fruits classify them

To characterise the image, the texture patterns from each component are combined.

Three datasets with different sizes and levels of complexity can be used to test the model

The local texture descriptor, such as a Weber local descriptor (WLD) histogram or a local binary pattern (LBP), is then applied to each component in order to encode the texture pattern of the date.

Model

To use various pretrained models provided in the PyTorch library's Torchvision package. And look into how well they can classify fine grained photos.

Three well-known classification models—Random Forest, K-Nearest Neighbors (KNN), and Support Vector Machine can be used to classify images to categorise fruits.

Brand-new fruit classification method called HPA-SLFN can be implemented for classification as it gives better results when compared to other techniques

Convolutional Neural Networks (ConNN)* deep learning model for classification

Classification

A Progressive Spinal Net, progressive computational network for FC layers of deep networks can be used

The accuracy and loss curves were created using various combinations of hidden layers.

Keras platform was used to construct the suggested model.

A chordate nervous system, which has a special way of connecting a lot of sensing data and making local decisions, is mimicked in the construction of SpinalNet.

Approach

These approaches should combine NLP and other AI techniques with historical food research, food science, nutrition, and sustainability expertise.

Interdisciplinary approaches should be used to address food and recipe research in order to address health and sustainability issues.

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Step-3: Idea Prioritization

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Prioritize

Your team should all be on the same page about what's important moving forward. Place your ideas on this grid to determine which ideas are important and which are feasible.

⌚ 20 minutes

