

Ideation Phase


Brainstorm & Idea Prioritization Template

Date	19 September 2022
Team ID	PNT2022TMID32374
Project Name	AI-powered Nutrition Analyzer for Fitness Enthusiasts
Maximum Marks	4 Marks

Reference: <https://app.mural.co/t/dhivyaaks8019/m/dhivyaaks8019/1663412410000/9d4c64cd990302fd1ee876c918a3049324c2103a?sender=u3477938a6202834d91f70568>




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


Template




Brainstorm & idea prioritization

Use this template in your own brainstorming sessions so your team can unleash their imagination and start shaping concepts even if you're not sitting in the same room.


 10 minutes to prepare
 1 hour to collaborate
 2-8 people recommended

 Share template feedback



Before you collaborate

A little bit of preparation goes a long way with this session. Here's what you need to do to get going.

 10 minutes

A

Team gathering

Define who should participate in the session and send an invite. Share relevant information or pre-work ahead.

B


Set the goal

Think about the problem you'll be focusing on solving in the brainstorming session.

C

Learn how to use the facilitation tools

Use the Facilitation Superpowers to run a happy and productive session.

[Open article](#) 


1

Define your problem statement

To build 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 to the trained model. The model analyses the image and detects the nutrition based on the fruits like (Sugar, Fibre, Protein, Calories, etc.).


PROBLEM


How might we [your problem statement]?





Key rules of brainstorming


To run a 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 button to write (or to start drawing)

Person 1

- Use webcam to image recognition on fruit
- Deep learning algorithm
- Compare with the database
- Data Processing and output

Person 2

- Group images to fruit
- Convolutional Neural Networks
- Train the neural network to detect fruit
- Analyzing the value for coconut and gives result

Person 3

- Using image classification
- Using Convolutional Neural Network Algorithm
- Classify supervised learning using pixel by pixel
- Matches with the dataset and gives result

Person 4

- Group 3-D fruit as image
- K-Nearest Neighbours Algorithm
- Analyze colour of separate portions and classifies fruits
- Compares and gives result

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 can break it up into smaller sub-groups.

20 minutes

Idea 1

An automated system is used for classification of fruits. A dataset containing five different fruits was constructed using an ordinary camera. GLCM is used to calculate texture features. Best accuracy was achieved by support vector machine. All the processing was carried out in Matlab. The main objective of these systems is to understand and perceive an image as done by humans i.e. understanding the symbolic meaning of images by the help of statistics, models, geometry. The main goal of it

Idea 2

Fruit classification is done by an algorithm based on convolution neural network has been applied for fruit detection. In this we use high-quality, fruit-containing image dataset for training a neural network to detect fruits. The efficiency of CNN can match human level perfection. Convolutional neural network algorithm in DNN which also performs efficiently for visual recognition including photo and video, face recognition, handwritten digit recognition. This model works efficiently with this architecture for fruit recognition.

Idea 3

Co-occurrence matrices are quite effective for discriminating different textures in the paper a fast algorithm for calculating parameters of co-occurrence matrices is presented. This classification, based on co-occurrence matrix parameters, is implemented pixel-by-pixel by using supervised learning and maximum likelihood estimates. The problem of texture boundary recognition has also been considered and a classification scheme based on more than one window for each pixel is presented.

Idea 4

A new Fruit recognition system which combines three features analysis methods: colour-based, shape based and size based in order to increase accuracy of recognition. Proposed method classifies and recognizes fruit images based on obtained features values by using nearest neighbours classification. Consequently, system shows the fruit name and a short description to user. Proposed fruit recognition system analyses, classifies and identifies fruits successfully up to 90% accuracy. The K-Nearest Neighbours algorithm as a classifier to classify fruit based on mean color values, shape, roundness value, area and perimeter values of the fruit.

Step-3: Idea Prioritization

4 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

TIP

Participants can use their markers to point at when sticky notes should go on the grid. The facilitator can confirm the spot by using the open corner taking the H key on the keyboard.

Importance

Rank of ideas based on their importance without any priority or cost, which would have the most positive impact?

Feasibility

Regardless of their importance, which ideas are more feasible (i.e. less risky, less difficult, less costly, etc.)?

IDEA 2

IDEA 1

IDEA 4