


# Ideation Phase

Date	19 May 2023
Team ID	NM2023TMID22485
Project Name	Automated Weather Classification using Transfer Learning
Maximum Marks	4 Marks

## Brainstorm & Idea Prioritization Template:

### 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

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➔

**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**

What problem are you trying to solve? Frame your problem as a How Might We statement. This will be the focus of your brainstorm.

⌚ 5 minutes

PROBLEM

The task is to develop an automated weather classification system using transfer learning on satellite imagery. The system should be able to accurately classify weather conditions based on satellite imagery and provide timely forecasts to users.

Key rules of brainstorming

To run a smooth and productive session

Stay in topic.

Defer judgment.

Go for volume.

Encourage wild ideas.

Listen to others.

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 select it to start drawing!

**Person 1**

Assign a team member to gather weather-related data from various sources (e.g., weather stations, satellite data, and historical records).

This involves tasks like data cleaning, normalization, and handling missing values.

Assign a group member to handle the data cleaning and normalization tasks.

**Person 2**

Focus on the weather data and the historical records. The team member responsible for gathering and cleaning the data should also handle the normalization and handling of missing values.

Assign a group member to handle the data cleaning and normalization tasks.

**Person 3**

Assign a group member to handle the data cleaning and normalization tasks. The team member responsible for gathering and cleaning the data should also handle the normalization and handling of missing values.

Assign a group member to handle the data cleaning and normalization tasks.

**Person 4**

Assign a group member to handle the data cleaning and normalization tasks. The team member responsible for gathering and cleaning the data should also handle the normalization and handling of missing values.

Assign a group member to handle the data cleaning and normalization tasks.

**Person 5**

Designate a team member to handle the data cleaning and normalization tasks. The team member responsible for gathering and cleaning the data should also handle the normalization and handling of missing values.

Assign a group member to handle the data cleaning and normalization tasks.

**Person 6**

Designate a team member to handle the data cleaning and normalization tasks. The team member responsible for gathering and cleaning the data should also handle the normalization and handling of missing values.

Assign a group member to handle the data cleaning and normalization tasks.

**Person 7**

Designate a team member to handle the data cleaning and normalization tasks. The team member responsible for gathering and cleaning the data should also handle the normalization and handling of missing values.

Assign a group member to handle the data cleaning and normalization tasks.

**Person 8**

Designate a team member to handle the data cleaning and normalization tasks. The team member responsible for gathering and cleaning the data should also handle the normalization and handling of missing values.

Assign a group member to handle the data cleaning and normalization tasks.

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## Group ideas

Take turns sharing your ideas while clustering similar or related notes as you go. Once all sticky notes have been grouped, 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

TIP  
Add subcategory tags to sticky notes to make it easier to find, browse, explore, and categorize important ideas as they're within your mind.

**Pre-trained models for weather classification:** Utilize pre-trained deep learning models such as VGG16, ResNet, or Inception, which have been trained on large-scale image datasets like ImageNet. Fine-tune these models on weather-related image datasets to classify weather conditions effectively.

**Multi-modal weather classification:** Combine visual images with other types of weather data such as radar, images, satellite data, or numerical weather predictions. Use transfer learning techniques to leverage pre-trained models on each data modality and create a multi-modal classification system.

**Domain adaptation for weather classification:** Develop methods to adapt pre-trained models from one weather domain to another. For example, transfer knowledge from a dataset collected in one geographical region to a different region where weather patterns might vary.

**Transfer learning across different scales:** Explore transfer learning techniques to classify weather conditions at different spatial and temporal scales. For instance, transfer knowledge from high-resolution satellite images to low-resolution images captured by ground-based cameras.

**Fine-grained weather classification:** Instead of classifying broad weather categories (e.g., sunny, rainy, cloudy), focus on fine-grained weather attributes such as cloud types, precipitation intensity, or wind speed. Transfer learning can help improve the accuracy of fine-grained weather classification tasks.

### Step-3: Idea Prioritization

4

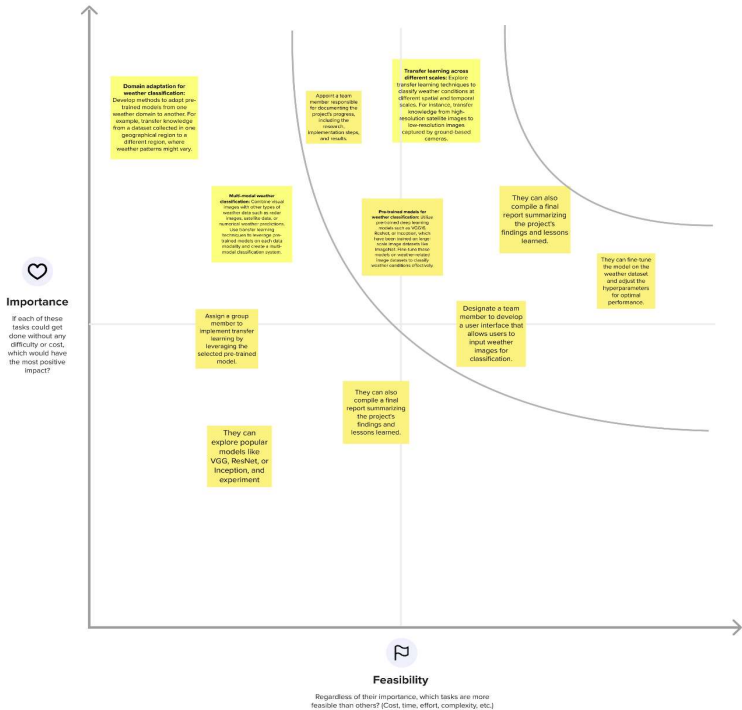
#### Prioritize

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 cursors to point at where sticky notes should go on the grid. The facilitator can confirm the spot by using the laser pointer holding the **H** key on the keyboard.



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#### After you collaborate

You can export the mural as an image or pdf to share with members of your company who might find it helpful.

#### Quick add-ons

- A Share the mural**  
Share a view link to the mural with stakeholders to keep them in the loop about the outcomes of the session.
- B Export the mural**  
Export a copy of the mural as a PNG or PDF to attach to emails, include in slides, or save in your drive.

#### Keep moving forward

- Strategy blueprint**  
Define the components of a new idea or strategy.  
[Open the template →](#)
- Customer experience journey map**  
Understand customer needs, motivations, and obstacles for an experience.  
[Open the template →](#)
- Strengths, weaknesses, opportunities & threats**  
Identify strengths, weaknesses, opportunities, and threats (SWOT) to develop a plan.  
[Open the template →](#)

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