Brainstorm & idea prioritization

Weather classification using deep learning

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

How might we improve the accuracy and user-friendliness of weather forecasts to empower individuals to plan their activities with confidence and ensure their safety during changing weather conditions?

2 Brainstorm

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

10 minutes

DINESH

- Use deep learning algorithms like Convolutional Neural Network(CNN) to classify the data.
- Use techniques like oversampling, undersampling, or synthetic data generation to address imbalance classees.
- Train a CNN on a diverse dataset of weather images to avoid underfitting and overfitting.
- Fine-tune hyperparameters like learning rate, batch size based on the model's performance on the validation set.

MEGHANA

- Use pre-trained Convolutional Neural Network (CNN) models such as VGG, ResNet to improve model performance.
- Gather images from different geographical locations to account for regional weather variations
- Image Preprocessing Techniques like rotation, scaling and brightness adjustments can improve the model performance.
- Ensure that the splitting process is random, meaning that the samples in each subset are selected randomly to avoid bias.

SUMANTH

- AI-Enhanced Forecasting
- Combine multiple pre-trained models to create an ensemble that leverages the strengths of different architectures.
- Split the dataset into training, validation, and testing sets to evaluate the model's performance accurately
- Creating web application using flask framework to integrate with the model and deploying onto the website.

SWAMY

- Take large and diverse dataset of different weather classes.
- Train a CNN on a large dataset of weather images for accuracy.
- It's essential to consider other metrics like precision, recall, and F1-score.
- Develop a user-friendly weather flask application that makes it easy for users to access and interpret weather data.

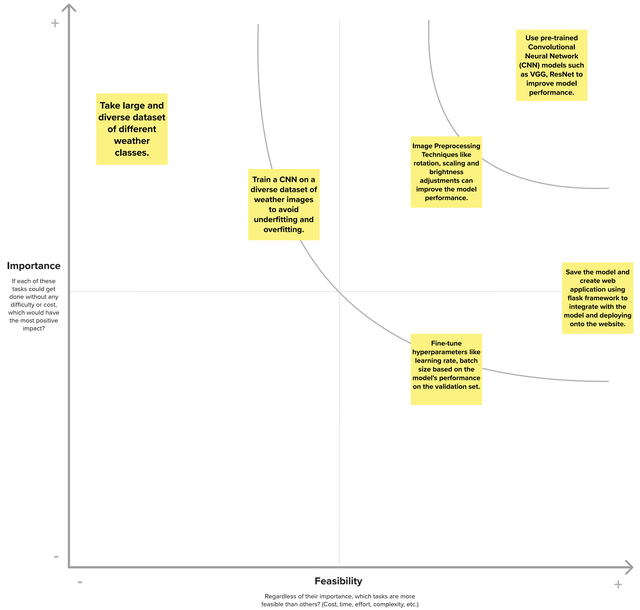
3 Group ideas

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 and break it up into smaller sub-groups.

20 minutes

- Take large and diverse dataset of different weather classes.
- Image Preprocessing Techniques like rotation, scaling and brightness adjustments can improve the model performance.
- Use pre-trained Convolutional Neural Network (CNN) models such as VGG, ResNet to improve model performance.
- Train a CNN on a diverse dataset of weather images to avoid underfitting and overfitting.
- Fine-tune hyperparameters like learning rate, batch size based on the model's performance on the validation set.
- Save the model and create web application using flask framework to integrate with the model and deploying onto the website.

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