



# Food Image Recognition (Project Planning)

Team11

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# Use Cases

## **Use Case 1 : Customers**

- ❖ Food customers use images to know the food category that they are eating at a restaurant

## **Use Case 2 : Restaurants**

- ❖ Chefs/owners can use the dataset to analyze the data, see the most frequently liked/visited images, and have a report of their most loved dishes.

## **Use Case 3 : Application Users**

- ❖ Food application users upload images to identify the category of their food



# Methodology

1. Processing images
  - ❖ Resizing
  - ❖ Rescaling
  - ❖ Standardizing
1. Algorithms of Artificial Intelligence for multiple food image classification
  - ❖ TensorFlow
  - ❖ Convolutional Neural Networks
  - ❖ Inception Model
1. Potential expansion for more food category classification
2. Visualization
  - ❖ Zeppelin



# Data Sources

ETH Food-101: [https://www.vision.ee.ethz.ch/datasets\\_extra/food-101](https://www.vision.ee.ethz.ch/datasets_extra/food-101)

- ❖ A dataset of 101 food categories with 101,000 colored images

Initial Plan: Subset 10 - 20 categories with a size of 500 MB - 1 GB

Dataset distribution:

- ❖ Training Dataset - 70%
- ❖ Test Dataset - 30%

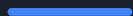


# Milestones



11/16

Data cleansing &  
Image Processing



11/28

Artificial Intelligence



12/3

Potential Expansion



12/7

Visualization  
& Wrap-up



# Scala Programming

- Image processing - Spark/Scala
- Neural network
- Zeppelin



# Acceptance Criteria

- ❖ Training data : Accuracy 80%
- ❖ Test data : Accuracy 50%
- ❖ The top probability for food classification :  $\geq 50\%$



# Goals

- ❖ With our classification mechanism we aim to help food customers, foodies, app users, and restaurants to classify foods better!
- ❖ It's important to know your food and eat like a boss!
- ❖ We'd like to give users the good experience about classifying certain types of food using cutting-edge AI technology, integrating with Scala knowledge!