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**Class Id: 32**

## **Lab Assignment-5**

### **Objective:**

- 1 To write a spark program for image classification.
- 2 To write client application using spark api
- 3 To design a simple application using Google conversation api.

### **Technologies Used:**

Scala, IntelliJ, Google Chrome, Git

### **Description:**

Here I took my own data set about food. It contains 8 categories. First I ran image classification program for my dataset. And I found confusion matrix and accuracy. After that I designed web application for image classification. For this I installed node.js. By using superstatic -p 8081 command I connected spark program to user interface. But this application is not much accurate.

By using api.ai I designed google conversation application. First I created agent and intents. Here I gave text summary of video in lab3

### **Output Screenshots:**

#### **Task1 Output:**

```
===== Confusion matrix =====
10.0  1.0  2.0  1.0  7.0  2.0  2.0  3.0  4.0
6.0   1.0  7.0  2.0  8.0  0.0  1.0  7.0  1.0
3.0   6.0  8.0  1.0 10.0  0.0  1.0  4.0  0.0
2.0   0.0  3.0  5.0  9.0  2.0  4.0  3.0  5.0
5.0   3.0  5.0  4.0  8.0  1.0  2.0  1.0  4.0
4.0   2.0  3.0  4.0  5.0  3.0  7.0  2.0  3.0
2.0   4.0  0.0  2.0  8.0  4.0  6.0  1.0  6.0
3.0   1.0  5.0  7.0  6.0  2.0  2.0  2.0  5.0
1.0   1.0  2.0  3.0  5.0  2.0 11.0  1.0  7.0
0.16891891891891891
```

Fig 1

## Task2 Outputs:

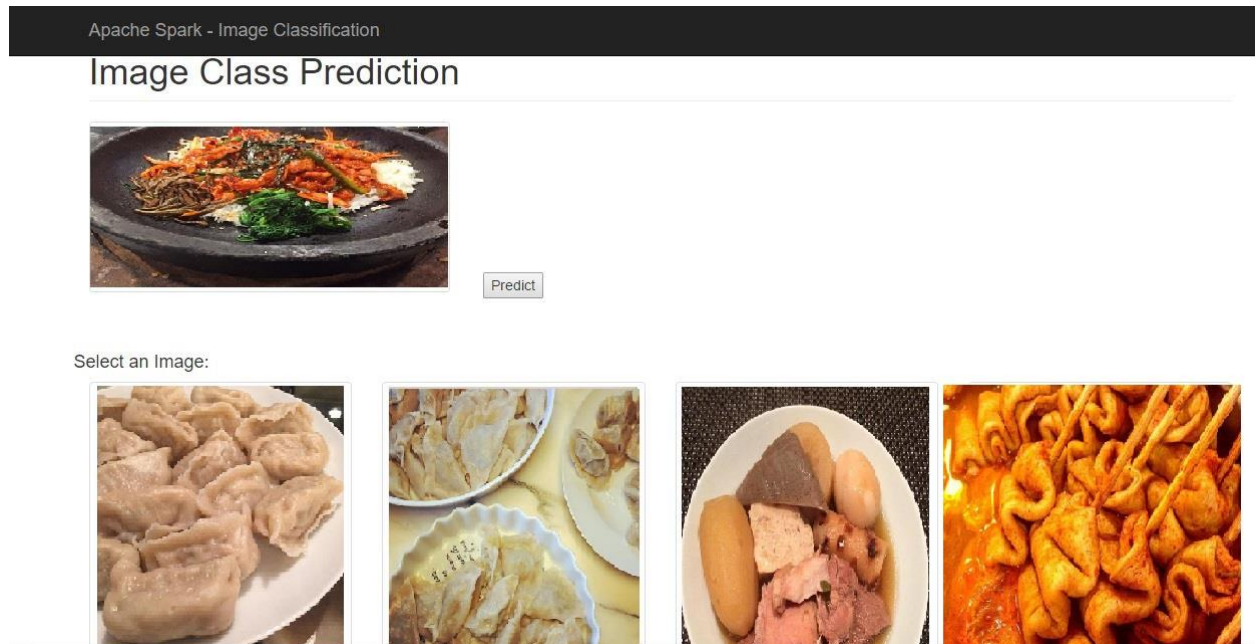


Fig 2 (Before click on prediction button)

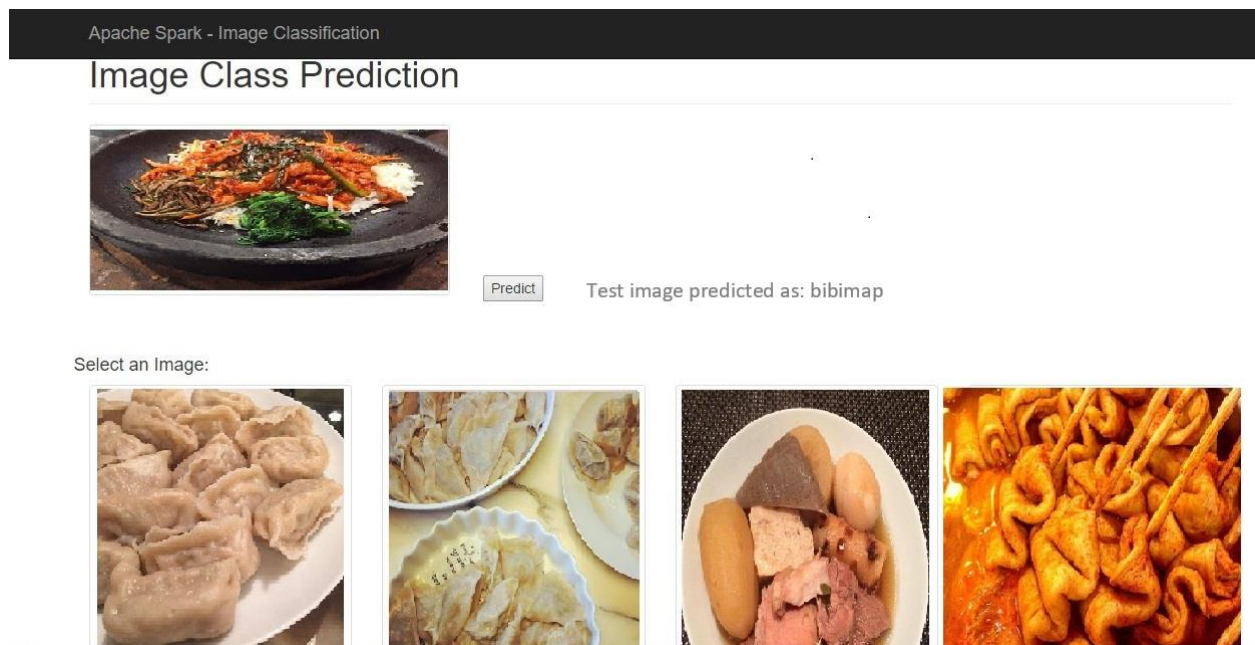




Fig 3 (After Click on Prediction button)

### Task3 Outputs:

summary U

 Sure, here's summary  
Hi, I am gopal. This is the summary of Lab-3 video. It is about one mammal animal. This video contains mammal animal, grass, sky, water.

Type something, or click the mic and speak



Request

```
{
  "query": "summary",
  "accessToken":
    "ya29.Glv7A7XZZqEiWUNpmbpTltYQfgxYuryWYtLw309q7FUFNx2GYndJPVzbnnm0sZphahQMIDkQ9hctvmD4TOY0Wm1DS1KLi89V3KgI99FcGMCqjseiMNGIKv8Whl0q",
  "debugInfo": {
    "assistantToAgentDebug": {
      "assistantToAgentJson": {
        "user": {
          "user_id": "vvnMeTFV3CANTmPsQaTsJelNhuQ8f0Rfa0FFXV4bCJL6E="
        },
        "conversation": {
          "conversation_id": "1487820291659",
          "type": 1
        },
        "inputs": [
          {
            "intent": "assistant.intent.action.MAIN",
            "raw_inputs": [
              {
                "input_type": 2,
                "query": "summary",
                "annotation_sets": []
              }
            ]
          },
          {
            "arguments": []
          }
        ],
        "surface": {
          "capabilities": [
            {

```

Fig 4

### Response

```
{
  "response": "Sure, here's summary\nHi, I am gopal. This is the summary of Lab-3 video. It is about one mammal animal. This video contains mammal animal, grass, sky, water.\n",
  "expectUserResponse": true,
  "conversationToken": "CiZDIzU4Y..." ,
  "audioResponse": "//NExAASa..." ,
  "debugInfo": {
    "agentToAssistantDebug": {
      "agentToAssistantJson": {
        "conversation_token": "[]",
        "expect_user_response": true,
        "expected_inputs": [
          {
            "input_prompt": {
              "initial_prompts": [
                {
                  "text_to_speech": "Hi, I am gopal. This is the summary of Lab-3 video. It is about one mammal animal. This video contains mammal animal, grass, sky, water."
                }
              ],
              "no_match_prompts": [],
              "no_input_prompts": []
            },
            "possible_intents": [
              {
                "intent": "assistant.intent.action.TEXT"
              }
            ],
            "speech_biasing_hints": [
              "$Tutorial"
            ]
          }
        ]
      }
    }
  }
}
```

Fig 5 (Response in JSON format)