

A Question and Answering system for sports domain using Image Classification.

Project Report 3

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Project Management:

- ☐ Plan & Project Timelines, Members, Task responsibility
- ☐ Implementation status report

Work completed:

1. Description

- ❖ Implemented the task of using Clarifai API for generating captions for the images/frames extracted from videos.
- ❖ Implemented SparkMlib/ Machine Learning algorithms. Decision Trees and random Forests (shallow learning)
- ❖ Implemented google conversation using api.ai and a web application for Spark API..
- ❖ Implemented 360 VR video Android App.
- ❖ Generated a convolutional Neural Net for Image Classification using Tensor Flow(Deep learning)..
- ❖ Retrained the final Layer of Google inception V4 for image classification into 3 classes.
- ❖ Implemented Show and Tell Model using Tensor Flow to generate image captioning.
- ❖ Created a Spark Client APP for image class detection using all the models generated(Decision trees, Random Forests and CNN using Tensor Flow.
- ❖ Implemented Android App for sport image recognition using Cognitive Service API.

2. Responsibility

- ❖ Ganesh Taduri :

Worked on:

1. Generating models using Shallow Learning(Decision Trees and Random Forests)
2. Implementing Google Inception V4 model for Image Classification.
3. Implementation of Show and Tell model for Image Captioning.
4. Collected the data for training and testing the models.

- ❖ Gulnoza Khakimava:

Worked on:

1. Implemented the task for recognizing sport game types using Clarifai API
2. Neural Net for image classification using TensorFlow
3. Trained and tested images related to sport games on Show and Tell model.
4. Implemented Android App using Cognitive Service API

- ❖ Raghava Kundavajjala:

Worked on:

1. Clarifai API.
2. SparkMLib model generation and 360 VR video APP
3. Tensor Flow CNN Web (Inception model), part of Google Conversation
4. Show and Tell Model .

3. Time Taken

- ❖ Clarifai API: 3 hr
- ❖ SparkMLib/Machine Learning: 3-4 hrs
- ❖ Google Conversation: 3 hrs
- ❖ Spark API with WEB UI: 4 hrs
- ❖ 360 VR Video Android App: 1 hr
- ❖ TensorFlow CNN Web application: 6 hrs
- ❖ Google Inception V4: 6 hours
- ❖ Show and Tell Model: 36 hours
- ❖ Android App using Cognitive Service API: 3 hours

4. Contributions

- ❖ Ganesh Taduri : 33%
- ❖ Gulnoza Khakimava : 33%
- ❖ Raghava Kundavajjala : 33%

Work to be completed

1. Description

- Create a mobile or desktop application which will give a description (text and speech) of the sport image/video using show and tell model.
- Update Conversation app with some questions and integrating with Heroku services.
- Spark Client App with integration of show and Tell model

2. Responsibility

- Ganesh Taduri:
 - Working on Conversation APP and Heroku services.
- Gulnoza Khakimava
 - Working on Mobile or Desktop APP
- Raghava Kundavajjala
 - Working on Spark Client app with integration of show and tell model.

3. Time to be Taken:

Approximate time expected for the remaining work is around 3 to 4 days.

Issues/ Concerns:

- The Hardware configuration of our machines is not capable of implementing a Neural Net with large number of cycles.
- Some difficulties in integrating Heroku Services with Google Conversation App..

- While training the models using Decision Trees and Random Forests we had some issues with size of the images in the collected data.