Sri Lanka Institute of Information Technology

PROJECT REGISTRATION FORM

(This form should be completed and submitted on or before 3.00 PM, Friday 3rd March, 2017)

The purpose of this form is to allow final year students of the B.Sc. (Hon) degree program to enlist in the final year project group. Enlisting in a project entails specifying the project title and the details of four members in the group, the internal supervisor (compulsory), external supervisor (may be from the industry) and indicating a brief description of the project. The description of the project entered on this form will not be considered as the formal project proposal. It should however indicate the scope of the project and provide the main potential outcome.

PROJECT TITLE	Landmark Recognition and Retrieval

RESEARCH GROUP	Machine learning

PROJECT NUMBER	18-107	(will be assigned by the lecture in charge)

PROJECT GROUP MEMBER DETAILS: (Please start with group leader's details)

	STUDENT NAME	STUDENT NO.	CONTACT NO.	EMAIL ADDRESS
1	M.M.R.L.K Marasinghe (GROUP LEADER)	IT14134104	0714796528	Rosh.m06@gmail.com
2	N.G.K.S Gamage	IT15131416	0717935367	keygamage@gmail. com
3	P.H.R.S Herath	IT14139604	0714073377	rajithasujana@gmail.com
4	D.A Masachchi	IT15033024	0717954858	damasachchi@gmail.com

SUPERVISOR

Mr. Yashas Maalawaarachchi		**01 – 03 – 2018**
Name	Signature	Date

CO-SUPERVISOR (will be assigned by the Supervisor, if necessary)

Name	Signature	Date

EXTERNAL SUPERVISOR (if any, may be from the industry)

Name	Affiliation	Contact Address	Contact Numbers	Signature/Date

ACCEPTANCE BY CDAP MEMBER

Name	Signature	Date

PROJECT DETAILS

Brief Description of your Research Problem:

As mentioned earlier, there are major problems with the current system. When we see some images of place that we are interest of visiting or go for some more images on that same landmark but the image retrieval is fundamental problem in computer vision make a barrier to retrieve the image with correct landmark from large databases.

Also if we have any collection of images where we visited while ago but no extract memory right now like what is the name of this temple I visited? Who created this monument I saw in there? And also we are curious of the more details on that monument or the temple. Build models that recognize the correct landmark (if any) in a dataset is challenging task. Then Consider several features from the survey that has to be filled by the user and predict the places according to that particular area.

Description of the Solution:

The proposed system consists of a mobile application mostly focused on tourists and it will be even helpful for the tour guides. Mobile application interacts with travelers who likes to find the details of the particular image details that contain landmarks.

This application is connected via cloud server to connect with inbuilt Restful server in our application. In addition to that it implements an image processing system to capture the landmarks to identify and gather the details of the landmark by using OpenCV library and python. Also the system is capable of customizing the user experience by using the profiling technique we implement with Twitter.

Main expected outcomes of the project:

WORKLOAD ALLOCATION (Please provide a brief description about the workload allocation)

MEMBER 1

This component is responsible for:

- Upload or Taking snapshot of the landmark from the mobile device camera while using the application.
- Analyze the upload/captured image by using image processing techniques to identify whether it contains a landmark or not.
- Storing and retrieving landmark information such as name, location, etc. from the captured image by using image processing and machine learning techniques.
- Upload the captured image to cloud server as a background process to identify the landmark using image processing and machine learning techniques.
- Build a machine learning algorithm that recognize the correct landmark (if any) in a dataset of challenging test images.

MEMBER 2

The image retrieval is a fundamental problem in computer vision. Considering the content based image recognition to find the same images captured in that landmark.

Once an image is uploaded, the system will use that image as an input to use under image processing technology. As a result, the system will check that result through the image database and the system itself will provide similar images or duplicate regarding that image which was uploaded as an input.

MEMBER 3

User profiling is used to personalize the online experience of the user while using the app. Twitter provides an API to access the publicly available information. The words, Hashtags, Retweets etc. can be accessed from the user profile and they can be used for the profiling. Twitter offers the data through two channels, the Stream API and the REST API. By using the python package called Twython we can connect the both APIs to collect data. Also we use GIS technology here to get the location of the captured image of the landmark and it will be further used to provide the user with Restaurants and dining places around that particular area. But, the results will be displayed according to the user preferences we obtained through Profiling. For example, user can go directly to the restaurant which offers his/her favorite food rather than going to every restaurant and check for their favorites.

MEMBER 4

Main Objective of this component is to deliver and process encrypted data that receives from the domains. When someone take image and upload concurrently then can show that image who use that mobile app. HTTPS will be used so that the web application will be more secure. Then user can see number of views that particular image. RMI Systems are used for that real time updates. Therefore, the security of distributed data would be safe and also the process time would be reduced.

In this component we can put the rating and identify what are places most people visited.

DECLARATION

"We declare that the project would involve material prepared by the Group members and that it would not fully or partially incorporate any material prepared by other persons for a fee or free of charge or that it would include material previously submitted by a candidate for a Degree or Diploma in any other University or Institute of Higher Learning and that, to the best of our knowledge and belief, it would not incorporate any material previously published or written by another person in relation to another project except with prior written approval from the supervisor and/or the coordinator of such project and that such unauthorized reproductions will construe offences punishable under the SLIIT Regulations.

We are aware, that if we are found guilty for the above mentioned offences or any project related plagiarism, the SLIIT has right to suspend the project at any time and or to suspend us from the examination and or from the Institution for minimum period of one year".