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|  | **Sri Lanka Institute of Information Technology** |



PROJECT REGISTRATION FORM

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(This form should be completed and uploaded to the Cloud space on or before XXXXXXXXX)

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.

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| PROJECT TITLE  (As per the accepted topic assessment form) | Artificial Intelligence Based Business Strategy For Optimized Advertising |

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| RESEARCH GROUP  **(as per the Topic assessment Form)** | Artificial Intelligence and Machine Learning |

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| PROJECT NUMBER |  | (will be assigned by the lecture in charge) |

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

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| --- | --- | --- | --- | --- |
|  | **STUDENT NAME** | **STUDENT NO.** | **CONTACT NO.** | **EMAIL ADDRESS** |
| Format | Perera C.D.D | ITxxxxxxxx | 0712345678 | itxxxxxxxx@my.sliit.lk |
| 1 | Kannangara K. K. A .L | IT18507652 | 0769070311 | [it18507652@my.sliit.lk](mailto:it18507652@my.sliit.lk) |
| 2 | Samaranath T. I | IT18085686 | 0770369602 | [it18085686@my.sliit.lk](mailto:it18085686@my.sliit.lk) |
| 3 | Kumara G. D. S .H | IT18041408 | 0765271729 | [it18041408@my.sliit.lk](mailto:it18041408@my.sliit.lk) |
| 4 | Thathsarani W. C | IT18158564 | 0711510623 | [it18158564@my.sliit.lk](mailto:it18158564@my.sliit.lk) |

**SUPERVISOR, CO\_ SUPERVISOR Details**

|  |  |
| --- | --- |
| **SUPERVISOR Name** | **CO-SUPERVISOR Name** |
| **Ms. Dinuka Wijendra** | **Ms. Jenny Kishara** |
| **Signature** | **Signature** |
| **Attach the email as Appendix 1** | **Attach the email as Appendix 2** |
| **01/22/2021** | **01/22/2021** |
| **Date** | **Date** |

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| EXTERNAL SUPERVISOR Details (if any, may be from the industry) | | | | | |
| **Mr. Anju Nissanka Seneviratne** | Head of Customer Success – Apium Innovations | nissanka@apium.io | 077 662 8538 | **Attach the email as Appendix 3** |
| Name | Affiliation | Contact Address | Contact Numbers | Signature/Date |

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| ACCEPTANCE BY CDAP MEMBER (This part will be filled by the RP team) | | |
|  |  |  |
| Name | Signature | Date |

PROJECT DETAILS

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| Brief Description of your Research Problem: (extract from the topic assessment form) |
| Considering the swiftly changing technological development, marketability and advertising of products have been evolved over the period, but significant changes in advertising have been implemented on specific areas like Social media and E-commerce platforms. But in television, the traditional methods of advertising are still in present, which is carried out in a way that does not follow users’ engagement, which directly affect in reducing sales conversions. The satisfaction rate of users with respective to the targeted advertisements, which are telecasted in each time duration tends to be low with the lack of understandability between the users’ intention and the aspects of each advertisement. Due to the unavailability of technologies to investigate the target audience emotions and to ensure the privacy of users’ data , the target-oriented advertising has become a difficult process to be addressed. Therefore, a methodology of overcoming the traditional advertising by using a user centric mechanism have to be developed to overcome the problems related with advertising marketability and the user satisfaction ratio. |
| Description of the Solution: (extract from the topic assessment form)  To adhere the above problem, it is proposed to implement a system using Image Processing and Machine Learning techniques to capture user data, which directly involved in advertising. The solution can be divided into the following sub parts:   1. Use of an object detection algorithm to capture user demographic data such as age gender and related peer group.  * Identification of the users and their demographic data. (age and gender) * Categorize the users depending on their peers (Ex: Family, Friends, Kids, Teen groups)  1. The advertisements placed by the advertising firms are classified using related tags and by considering the demographic data captured in the first phase.  * Identification of the tags of the advertisements and recommending 5 best advertisements * Classification of advertisements by considering the age, gender and peer group of the audience * Selecting the most suitable advertisement out of 5 recommended advertisements by considering demographic data collected in stage 1 (age, gender and peer group)  1. Identifying user impressions with regard to the advertisement placed using emotion detection, which will benefit in forecasting future advertisements.  * Identification and verification of the user emotions * Analyze and report statistic to the advertising firm  1. Ensure privacy issues by securing sensitive user data and advertisements with the use of blockchain integration(smart contract).  * Secure the advertisements that are given by the advertising firm and the users video clips that are collected by the smart device |

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| Main expected outcomes of the project: (extract from the topic assessment form) |
| **Main Objective:**  Hosting of advertisements is done through the variation of time scheduling. The aim is to categorize and classify user preferred, user relevant and peer relevant advertisements on the television, which will benefit both the targeted audience and the advertising firms.  **Sub Objective 1:** Advertising firms will have the facility to only pay for the audience the advertisement is placed. This will be an advantage, since the advertisement is placed according to the status of the audience. The current advertising mechanism is not user centric such that the expected profit of telecasting a particular advertisement may not end up with the targeted profit.  **Sub Objective 2:** Recommended advertisements are considered based on the demographic data of the user and the tags generated for each advertisement. This feature is important to give the optimized advertisement for the audience according to their preference.  **Sub Objective 3:** Generate feedback report considering users emotions and impressions regarding advertisements to forecast future advertisements. This feature will be important for advertising firms to decide which advertisements gives the best user engagement.  **Sub Objective 4:** Ensure privacy issues and secure user data. The video data transferring through the API should be more secured so that the privacy of the users is protected. |

WORKLOAD ALLOCATION (**extract from the topic assessment form after correcting the suggestions given by the topic assessment panel.**)

(Please provide a brief description about the workload allocation)

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| MEMBER 1 | ………………………………………………………………………………………………………………………………………………………… |
| * A current snapshot of the audience infront of the television will be taken into account for live detection, which will be captured through a camera embedded to the Smart TV. * Gather data using an online data set to train the algorithm to detect lively present human and their age, gender and the peer group. * Once the snapshot is taken, it will go through an algorithm to detect the audience and predict the age and gender(Output 1). * Depending on the head count and the previous output of the algorithm(Output 1) , the audience will be further classified into individuals or peers associated with each other. | |

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| MEMBER 2 | ………………………………………………………………………………………………………………………………………………………… |
| * Building an API to send and receive data throughout the process. * The data sorted and classified in stage 1 will be merged with the advertisements containing tags which will be provided by the advertising firm. * Once the tags of the advertisements are matched with the classified data of the audience, with the aid of a recommendation algorithm the audience will be able to view the preferred and recommended advertisements with the classifications done in stage 1. | |

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| MEMBER 3 | ………………………………………………………………………………………………………………………………………………………… |
| * Training a data set related to human emotions using an online data set. * Capture snapshots of the video to obtain the emotion and compare it with the trained data set and classify the emotion that suits the advertisement. * The emotions are detected by considering several factors which appear in the face such as curves and wrinkles. * Eye with curved shape (happy/good) * squeezed eyebrows, slender and stretched eyelids(anger/bad) | |

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| MEMBER 4 | ………………………………………………………………………………………………………………………………………………………… |
| * Ensure privacy issues by securing sensitive user data and advertisements with the use of blockchain integration(smart contract). * Smart contracts use software code to automate tasks, thereby shaving hours off a range of business processes. Smart contracts save money since they knock out the presence of an intermediary. * Secure the advertisements that are given by the advertising firm and the users video clips that are collected by the smart device | |

DECLARATION (Students should add the Digital Signature)

“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”.

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|  | **STUDENT NAME** | **STUDENT NO.** | **Signature** |
| 1 | Kannangara K K A L | IT18507652 | A spider on a white surface  Description automatically generated with low confidence |
| 2 | Samaranath T I | IT18085686 | A drawing on a white surface  Description automatically generated with low confidence |
| 3 | Kumara G D S H | IT18041408 | A black bug on a white surface  Description automatically generated with low confidence |
| 4 | Thathsarani W C | IT18158564 | A picture containing text, whiteboard  Description automatically generated |

Appendix 01 – Endorsement by Supervisor : Mrs Dinuka Wijendra

Text

Description automatically generated

Appendix 02 – Endorsement by Co-Supervisor : Ms Jenny Kishara

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Appendix 03 – Endorsement by External-Supervisor : Mr. Anju Nissanka Seneviratne

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