ISRO Video Classifier

A Major Project Synopsis Submitted to

Rajiv Gandhi Proudyogiki Vishwavidyalaya, Bhopal

Towards Partial Fulfillment for the Award of

Bachelor of Technology

(Computer Science and Information Technology)

Under the Supervision of:

Dr Shilpa Bhalerao

Submitted By

Aayush Panchal(0827EC191001)
Rahul Kumawat(0827CI191048)
Yash Rane(0827CI191069)

Department of Computer Science and Information Technology

Acropolis Institute of Technology & Research, Indore

July-Dec 2022

Project Proposal: ISRO Video Classifier

Project Category:
AI/ML/DL based

Problem Statement:

Video documentaries of various ISRO missions and programs are available. To categorize the all-video programs, generation & verification of huge amount of metadata generation need to be done. With current Deep learning methods-based development in field of Computer vision and Natural Language Processing this task of video metadata generation is now days automated.

Scope (100 words):

All the object should be detected for the certain operations in ISRO missions. Operations may include verification of any object or any obstacles in the missions can also be detected for the successful accomplishment of task related to mission.

Specific Objectives:

Video programs and process for objects, text, speech recognition, Named Entity recognition etc has been made available by ISRO. This project will classify the videos in different categories like launch programs, interviews, educational programs, outdoor shots, public shots, traffic etc.

Stake Holders of Project

Anybody who wants to know about ISRO missions or any mission related information.

Background:

The video content needs to be analyzed for prediction its class in different purpose for the users. Many machines learning approach has been developed for the classification of video to save people time and energy. Video can also be classified using Object detecting mechanism which can me implemented using Machine Learning algorithms. In this project we are also going to use deep learning approach for this video classification. The video data will be based on ISRO's(Indian Space Research Organization) missions. Our task is to classify those videos into different categories such as whether they are related to education or any space missions etc. After the successful completion of this

project any user who want to know what the different video is about, can easily understand the purpose of the video because it has been classified to its category.

Review of Literature:

Title	Reference	Date and year of publication/release of project	Features
Video Violence detection	https://www.cs.cmu.edu/~rahuls/pub/caip2020-rahuls.pdf	2020	A simple deep learning method find violence in video sequences .
Emotion analysis from video	https://arxiv.org/pdf/1808.03137	2019	Can classify video sentiment and opinions.
Video analysis of Infant.	https://pubmed.ncbi.nlm.nih.gov/28745715/	2017	Classify Infant expressions and also states detection, object detection .

Whether the Implementation and deployment of the project idea (yes/no)

a) Has Social benefits.---------- YES

b) Has Environmental Benefits---------- YES

c) Considers health, safety, legal and cultural issues -------- YES

d) Considers sustainable development (economic development that is conducted without depletion of natural resources)---------- YES

e) Applies ethical principles while selecting project (not to steal other's project idea, code and documents)---------- YES

f)Commits to professional ethics and responsibilities and norms of the engineering practice.-------- YES

g) Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools----------YES

h) Identify, formulate, review research literature, and analyze engineering problems reaching substantiated conclusions.----------YES

Technological know-how required for proposed project idea:

Software : - Visual Studio Code , Pycharm

Hardware : - Updated System

Key Personnel and their expertise

Student Name and Enrollment No.	Technical Expertise
Aayush Panchal(0827EC191001)	*Python*
Rahul Kumawat(0827CI191048)	*Python*
Yash Rane(0827CI191069)	*Python*

Proposed Timetable

	Description of Work	Expected no. of weeks to complete the module
Module One	Object Detection	4 weeks
Module Two	Video Classification	5 weeks
Module Three	Deployment	4 weeks

Project Benefits:

1.It is user friendly which will give information about ISRO missions at one place.

References

Google , Mentors Guide and suggestion.
