Statement of Work

Version 3.0

Date: 19th Mar 2021

1. Overview

1.1 Introduction about our client

Cinefly is a media-tech company which aims to develop the most advanced patented storytelling and file platform. Cinefly formed a team of professional directors to design storyboards which can be directly used by users. Storyboards are patterns that help creators to determine the frame and split of the video, serving as guidance for those creators. Cinefly believe that they can help users become extraordinary storytellers, with students, researchers, volunteers, business, government, and other industries engaging together to share ideas, stories, and experiences. Cinefly share these videos to have positive effects on the society, with the goals of tackling global issues such as Climate Change, Food and Plastic Waste and Poverty.

1.2 Project Goal

Cinefly is working on developing a new mobile client. This project team is responsible for developing and implementing a machine learning algorithm with python, which can be used to estimate whether a person is living a healthy life style. The algorithm accepts inputs of the video sources provided by the client according to the given label list. After analyzing, the algorithm would be able to extract demographic information of people, food information and being able to estimate several features' based on the extracted information, the accuracy of the estimation should be higher than 70%.

As for application, the algorithm can be used to help extract information from those videos

to accomplish users' profile. Also we can extract the food information in the videos and estimate whether is a person living a healthy life style.

1.3 Stakeholders

Our project stakeholders consist of 4 groups: client, customers of Cinefly, sponsors of Cinefly, directors.

The client is Kai Eris, who is also the product manager and the sponsor of the company Cinefly.

Sponsors are the investors of the Cinefly company, our output can help improve the performance of the product of Cinefly, so sponsors can make more profits from it.

Customer is the user of the website, who can use the app Cinefly to create videos based on storyboards.

Directors are employees working together to create storyboards for users.

1.4 Business Analysis of the Client

2. Project Details

2.1 Project Scope

This semester we will focus on extracting demographic information from the first scene of the storyboard. We use cv and machine learning technology to extract human's age, gender, face expression and body movements for later use. We should be able to estimate humans' age, gender, face expression, activities by the end of this semester. And we are not responsible for integrating our algorithm with the Cinefly app.

2.2 Minimum Viable Product (MVP)

2.2.1 Designing an algorithm which can be used to extract demographic information from videos to help accomplish the user's profile.

a. Decide the scope of demographic information.

Deliverables: Narrowing down the scope to several features: human's age, gender, face expression.

b. Do some research about recognizing related demographic information and decide which algorithms can be used.

Deliverables: Reviewing of key messages of the papers we read and decide to use the combination of YOLO and mediapipe for extracting human from videos

c. Search for dataset of related demographic information.

Deliverables: Several datasets of related demographic information.

d. Using datasets to train our machine learning algorithm to improve the performance.

Deliverables: Increasing the accuracy of recognition of demographic objects above 70%.

The above a and b are the minimum deliverables of our project, we would try our best to improve our performance if possible.

2.3 Period of Performance

The scope of the project Cinefly will span the first and the second semester of 2021.

2.4 Location

There will be both on-campus meetings in Canberra and online meetings because 2 of our members are based in China.

2.5 Technical and other constraints

Programming language will be limited to python, because this algorithm will be integrated

to the Cinefly application which use python as machine learning programming language.

2.6 Risk management and potential costs

2.6.1 Risk management

Major risk: missing the deadline of delivering the product due to several reasons such as:

(1) Wrongly estimating the workload of developing the algorithm.

(2) Team members not working hard to complete the project.

(3) Failure of communication with the client.

(4) Failure of getting source videos from client.

How to mitigate this risk:

(1) Ensure that weekly meetings are held as scheduled, decisions, reflections and plans are well created and documented as the Team Charter requires.

(2) Apply punishments and reporting procedures according to the Team Charter.

(3) Using as many communication channels as possible to ensure that regular meetings with clients are held every week. Tring to do some research some based on the information we got.

(4) Using suitable online source videos for training and testing.

2.6.2 Costs:

Cost of using other companies' APIs, using great deal of images and video sets for training. Plenty of time of training models.

2.7 Project resources and tools

Resources: The resources available for this project include videos in the database provided by Client (Cinefly). The materials in the ANU library and the tutor resources provided by the Techlaunch project.

Tools: The tools used in this project include: IDEs used to develop software, such as PyCharm, communication tools within the team or between the team and the client, such as WeChat, Zoom, etc.

2.8 Client's responsibility

Offering the label list of types so that the videos can be classified.

Supply of data (videos).

Access to the Cinefly platform.

Attending meetings regularly with members of the group.

Attending audit meeting if possible, giving comments about the audit and repository.

3. Team Charter

This part can be retrieved at:

https://github.com/ch4ser/21-S1-2-C-Cinema/blob/main/01_Team_Charter/Team%20Charter.pdf

Signatures

Client

Kai Eris

Team

Jiawei Fan

Yuchen Wang

Yuliang Ma

XiaoXiang Kong

Yimin Xu