Project Proposal

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project repository

Motivation

With video games being in abundance and game console technology getting better and better, video game journalists are constantly writing game reviews about the latest video games at any given moment. Sometimes, readers may just want a quick opinion on whether or not to buy a video game. They may want to see related video game reviews or maybe even the genre which they belong to. Additionally, some readers may be visually impaired or have some other form of disability that requires some audio component when browsing the web. As such, we choose to focus on text summarization, text classification in terms of video game genres, and speech synthesis in order to help facilitate video selection for buyers as well as to elevate market penetration for sellers.

A transparent and automatic analyzing and classifying system is needed, yet few seriously consider it in academia. For future market analysis research and for more people to accurately pick the right video games, we propose a system which performs video game review text collection from IGN review website, text summarization and classification on the review, and finally performs text-to-speech. The result will be displayed on a specific website showing a game's summary, visualized recommendation, and speech synthesis.

Significance

Video games have become more and more influential in every endeavor. From school educational platforms to museum programs, video games ignite interest in many. An interesting and appropriate video game can be utilized in various ways ranging from relaxation(and de-stressing), making new friends, and even advanced topics such as reinforcement learning. As a result, a functional system that can be used to quickly assess a user's decision on whether or not to buy a video game can be very helpful. In this design, we especially add speech synthesis as an additional component to visualization elements in order to better assist those who suffer from any visually-impairing disability.

Objectives:

Before we begin tackling any of the three main tasks, we will be performing data analysis on each dataset. The objectives are based on each individual dataset.

Text Summarization Component

Dataset 1: WikiHow

This dataset contains articles taken from WikiHow paired with summaries of said articles. This will be used to train our model for summarizing text. The object here will be to perform extractive summarization.

Text Classification Component

Dataset 2 : Steam Reviews

This dataset contains user reviews on video games in the steam gaming platform. Along with the reviews column is another column that determines whether a game is recommended or not. This will be our classification task.

Text-to-Speech Component

Dataset 3 : CSS10

This dataset is a collection of Single Speaker Speech Datasets for 10 Languages. It is composed of short audio clips from LibriVox audiobooks and their aligned texts.

Ultimately, we wish to create a website that can integrate all three tasks such that when a user inputs the link of a certain video game review (from IGN.com), an output from all three tasks is performed. From this, we would like to additionally perform web scraping; the process would like so:

→ Web Scrape text
→ Perform text summarization
→ Classify as recommended or not based on summarization
→ Perform Text-to-Speech on previous two outputs
→ Display on website

Features

Dataset 1:

1. Articles of how to perform certain tasks

2. Content summary

Dataset 2:

1. User reviews of a given video game. Note: these reviews vary in length
2. Binary classification: Recommended vs. Not Recommended.

Dataset 3:

1. Audio clips read by a single speaker extracted from LibriVox for ten languages.
2. Text-based script on audio clips.

References

- Resource for Text Classification
- Resource for Text Summarization
- Paper describing WikiHow dataset
- Speech synthesis resource / CSS10 / Dataset paper
- Resource guide for speech synthesis model
- IGN Review website for user integration