Emotion in Media

Developing an *Emotive Track* to accompany media broadcast

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ABSTRACT

The main focus is on ways in which the emotive experience for people who are deaf, hearing-impaired or for those who may struggle to detect certain emotions being conveyed when watching a show or film can be improved on. Primarily, deaf and hearing-impaired have the widely available option of subtitles to use to help aid them whilst watching something and although they do a great job of relaying what is being spoken, they miss out on the emotional side of things. They fail to cover how something is being said, was it shouted or whispered? These are key points that alter the way in which you experience what you are watching and there is a lack of it in subtitles.

Currently, some subtitles include the manner in how something is being said. This is usually either included next to the text in brackets or asterisks. However, it is not as cohesive when the feeling is included as text. There needs to be something more done to help elevate the experience as music is a big technique used to help enhance the delivery of emotion to the viewers and only people who are able to hear can enjoy this.

This work aims to bridge that gap by bringing an interactive approach to displaying emotion and that is through coloured lights that are linked to a feeling and change depending on that.

1 INTRODUCTION

In media broadcast, the main option available for the deaf and hearing-impaired is what is most commonly known as subtitles. Subtitles are a transcript of conversations happening in what is being watched, whether that be the news, a film or your favourite TV show. Although subtitles do a good job of relaying information of what is being said when watching without audio or not being able to hear, a huge factor is missed out with subtitles and that is emotion.

This project aims to discover and construct a way in which the emotion lost through subtitles can be delivered to the viewer. In order to achieve this, an emotive track needs to be produced which will be the base used to allow for emotion to be presented in various ways. The emotive track will focus on the eight primary emotions: anger, sadness, fear, joy, interest, surprise, disgust and shame.

2 RELATED WORK

The most common solution found was to alter the text itself in an attempt to incorporate emotion into a subtitle track. Establishing a direct link between text attributes (such as font, colour [8] and size of text[13]) and an emotional state.[6]

Facial expressions [7], visual, auditory, and physical cues from onscreen activity [12] are analysed in order to extract the emotion being shown which is then assigned to a subtitle block. Alongside subtitles, moving image captions were implemented to display emotion. [11]

Words from the dictionary were mapped out to emotion labels by making a distinction between denotative and connotative words as the emotion would differ. [4] In addition to this a classifier counter was produced to keep count of the most frequent emotion to assign an overall emotion for that subtitle block. [5] Similarly, to simplify the emotion presented in a subtitle block, emotions detected in movie scenes are sectioned out into the seven basic emotions. A second screen application integrates vibrations, emoticons, environmental lights and background music to represent these emotions to the viewer in real-time while the movie is playing.[1]

Knowing that music is one of the key elements used in films to deliver emotion, user testing on music scenes with three types of subtitles were performed on a group of people. One version didn't give any information or description of the music used, another included the title and artist name of the music used and the last version of the subtitles only included the description of the music. There was a significant difference in feedback regarding the intensity of emotion experienced throughout the clip. [9]

2.1 Challenges with understanding emotion

Autism Spectrum Disorder can play a part in not being able to recognise emotion displayed by a facial expression and this happens more so with negative emotions such as sadness or anger compared to positive ones.[10] This is why systems need to be implemented to help convey feelings shown visually via facial expressions as not everyone is able to understand what is being expressed.

For people who are able to understand facial emotion, another issue is missing out on seeing all the facial expressions as most of their attention is on the subtitles. It has been proposed that subtitles can consume up to 37 percent of a user's visual attention when they are present.[2]

3 SYSTEM CONCEPT

The objective is to create an emotive track, which will link to the subtitle track filtering through keywords that signify any type of emotion. The emotive track will consist of eight primary emotions these being: anger, sadness, fear, joy, interest, surprise, disgust and shame.[3] The keywords flagged up from the subtitle track will be put into one of the eight different categories. These categories help simplify the overall emotion being delivered at that particular point in the scene. Hopefully, once an emotive track has been established, future implementations will include the attachment of an led light device which will link to the emotive track displaying and changing colours according to the emotion. The idea is that it would be

more of a soft glow and smooth change over to keep in mind any other disabilities such as epilepsy and others that are prone to light sensitivity.

3.1 Future work

The first steps of the implementation process will consist of choosing an excerpted clip to work on, creating a subtitle track from a transcript. Once the subtitle track has been built, an emotive track needs to be done. A system needs to allow for the keywords from the subtitle track that allude to emotion to be filtered through and put under a category it belongs to according to the eight primary emotions. Once the emotive track is complete, the next step is to test it and that would be with led lighting with a positive outcome being that it can change colours according to the emotion.

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A FIRST APPENDIX SECTION