a Comparative Approach to AI Based Automated Video Editing

In today's age, social media takes an important place in our lives. As time passes audio-visuals put into media have become more and more high-quality and well-processed. But for a video to become a consumer-oriented piece it requires a huge part of working hours, especially for nonprofessional users.

In our project, we will be focusing on the classification of non-essential filler sounds and natural speech that is accepted as appropriate for well-processed media. While creating an AI we will also search for the most optimized solution by comparing classical machine learning and quantum machine learning. We believe that the classification provided by our AI will allow us to build a plug-in feature for the DaVinci Resolve video editing program. In the plug-in, we will provide an automatic highlight feature for parts to be cut in their videos consisting of talks, speeches, podcasts, etc. that might contain human speech errors.

The DaVinci Resolve video editing program is a software used by many professional studios, streamers, YouTubers, and many individual users. With our plug-in, we hope to serve a fast-paced and user-friendly solution that will be used by many people. Our AI will automate the recognition and highlight process of unwanted audio and the commands we will give to our plug-in will apply all the commands prepared for a well-processed video enabling a beginner-friendly professional-looking video that can be readily used on youtube and other platforms.

Our future plans include academic and practical advances for our project. We will broaden our classification practices for other uses in analyses and pursue linguistics research. One example can be addressed as an "analysis of neurodivergent people vs neurotypical people speech and their usage of filler words". For the practical advances, we will consider more modules and serving options to users enabling further audio adjustments.

Our vision is to produce a complete product that will provide time efficiency and accessibility to users from all backgrounds. We are also eager to contribute to academics by comparing and analyzing the possibility of quantum machine learning and quantum Fourier transformations' advantage for faster calculations. We see and recognize the increasing demand for optimized video editing brought by new-age media, we believe that our plug-in will take place in common practices in DaVinci Resolve.

GOALS

1. To successfully build an AI that can differentiate between filler words and speech.
2. Build a secondary AI on a quantum computer and compare it to a classical one.
3. Build an API that can take information from AI and process it through DaVinci Resolve.
4. Finish and bring a complete product.

PROPERTIES

Our project will consist of audio recognition AI determining parts to be cut and kept for the video uploaded. In our project, we are considering adding a slider to determine the intensity of video editing and cutting for blank spaces and filler words giving the consumer the ability to decide the natural flow they desire in their video. Our interface will be user-friendly, giving choices to users to directly have a predesigned ready-to-import video or will only highlight the audio pieces that can be edited as wished by the user.

STEPS:

Data Collection and Database Creation

Pre Process of Data and AI Training

Precision Adjustments to AI and Testing

Pathway Creation in FUSION and Linkage to AI Processed Data

Creation of API and Interface for the Plug-In

Fine-Tuning

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