

Spatio-Temporal Processing of Editing Points-Research on Short Video Editing Theory and Paradigm

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Abstract. With the popularity of mobile Internet and the rise of social media, short video has become an indispensable part of people's daily life. As the core link of short video production, editing not only affects the narrative effect and appreciation of short video, but also directly affects its communication and influence through carefully designed editing points and space-time processing. The purpose of this paper is to deeply explore the theory and paradigm of editing points and their spatio-temporal processing in short video editing. Through theoretical elaboration, case analysis and other methods, it provides practical guidance and theoretical support for short video producers.

Keywords: Short Video Editing, Spatio-Temporal Processing.

1. Introduction

With its short, concise, rich content and rapid dissemination, short video occupies an important position in today's era of information explosion. As one of the core technologies of short video production, editing can integrate scattered materials into coherent and attractive works by accurately selecting editing points and skillfully dealing with space-time relationships [1]. Therefore, it is of great significance to study the theory and paradigm of clip points and their spatio-temporal processing in short video clips to improve the quality and communication effect of short video.

2. Editing point theory and its function

2.1. Definition and classification of editing points

Clip point refers to the point where two or more different images or lenses are transitioned or adjacent during video editing. According to the needs and objectives of the clip [2]. Clip points can be divided into many types, such as skip clips, cross clips, dissolve clips, splicing clips and so on. Each clip point has its own unique functions and effects, which can meet the needs of short video production with different styles and themes.

(1) Jump clip refers to a sudden, non-transitional clip between two or more shots. It is often used to express the passage of time, scene switching or plot jumping. Through skipping, multiple scenes or plots can be quickly displayed, bringing freshness and visual impact to the audience.

(2) Cross-editing refers to the effect of alternating editing between two or more episodes. It is often used to express the correlation and contrast of different plots, and enhance the tension and conflict of the plot. Through cross-editing, it can attract the attention of the audience and improve the tension and interest of the viewing.

(3) The dissolving clip is to transition the two scenes in a gradual way to create a soft and smooth effect. It is often used to express the transition of time, emotion or scene, making the picture conversion more natural and smooth. Dissolution clips can create a fantastic atmosphere and enhance the audience's sense of immersion.

(4) Splicing clips are switched by similar or the same elements, so that more correlations and echoes are generated between the two scenes. It is often used to emphasize the internal relationship between

the two scenes, so that the audience can have a sense of coherence in visual and psychological. Clip clips can improve the logic and overall effect of short videos.

2.2. The role of editing points

The selection and application of editing points directly affect the dynamic, continuity, fluency and rhythm of short videos. Reasonable editing points can enhance the impact and expressiveness of the picture, so that the audience can obtain rich information and profound feelings in a short time[2]. At the same time, the editing point can also guide the audience 's attention, control the rhythm and emotional changes of the viewing, so as to achieve the narrative purpose and aesthetic pursuit of the short video.

3. Space-time processing paradigm

3.1. Timing control

Time and space processing is one of the key techniques in short video editing. It constructs a coherent and vivid narrative effect through the processing and integration of video timeline and space elements. Space-time processing includes two aspects : timing control and space processing. Temporal manipulation refers to the organic combination of different editing points by processing the timeline of the video to produce a coherent narrative effect. It involves the layout of the editing sequence, the mastery of the time period, and the creation of logical associations[3].

(1) Layout of editing order: According to the theme and plot of the short video, each clip point is arranged in an orderly manner to construct a complete story flow. The layout of the editing sequence should follow the narrative logic and the audience 's psychological expectations, so that the audience can clearly understand the story and the relationship between the characters.

(2) Mastery of time period: In the editing process, reasonably proficient in the length and rhythm of each video. By speeding up or slowing down the editing speed, increasing or reducing the retention time of the lens, the overall rhythm and emotional changes of the short video are adjusted. The mastery of time periods can make short videos more compact and powerful or soothing and melodious, and meet the production needs of different themes and styles.

(3) The Creation of Logical Connection: Through the rational design and use of clip points, the coherence between clips is generated, and the logic and overall effect of short videos are further enhanced. The creation of logical association requires the producer to have keen insight and rich imagination, and can accurately capture the internal relationship and potential significance between the materials.

3.2. Space processing

Spatial processing refers to the processing and integration of spatial elements in short videos by means of editing points and image processing [4]. It involves the use of picture segmentation, the innovation of image processing and the diversity of lens use.

(1) The use of picture segmentation. By dividing the picture, different details and scenes are presented from multiple angles. Image segmentation can enhance the viewing and impact of short video, so that the audience can obtain multiple information points at the same time and generate association and imagination.

(2) Innovations in image processing. By adjusting the color, brightness and contrast of the image, the texture and visual effect of the picture are improved. Image processing can enhance the artistic expression and appeal of short video, so that the audience can get better enjoyment and satisfaction in vision.

(3) The diversity of lens use. Reasonable use of different lens shooting angle and focal length to show different spatial scales and visual effects. The diversity of lens use can make the short video more layered and three-dimensional, and enhance the audience's sense of immersion and substitution.

3.3. Space processing

In addition to the above basic methods of temporal manipulation and spatial processing, there are some specific effect applications of spatio-temporal processing in short videos :

(1) Time compression and extension: By accelerating and slowing down the playback speed of the lens, the effect of time compression and extension can be achieved. Time compression can be used to express a sense of urgency and the rapid presentation of actions; And time extension can be used to emphasize slow, quiet, or important plot points.

(2) Quick editing: Increase the playback speed of the camera to make the transition of the image faster and more coherent. This technique is very effective in expressing tense and fast-paced plots.

(3) Slow motion: Slows down the playback speed of the camera to make the transition of the image slower and more delicate. Slow motion is often used to emphasize important plot points, present aesthetic beauty, or detail movements.

(4) Gradient: Processing gradient effects between consecutive shots to make the transition of the image smoother and more natural. Gradient can be used to express transitions in time, emotion, or scene.

(5) Picture in picture: The effect of inserting another image into a picture, used to express the display of multiple plots, perspectives, or psychological worlds.

In summary, the specific application of spatiotemporal processing in short videos involves various ways of processing and integrating video timelines and spatial elements. By cleverly utilizing these techniques, creators can create more vivid, interesting, and infectious short video works.

4. Analysis of Classic Cases

4.1. LEGO advertisement 'Build The World'

This short video showcases the creativity and infinite possibilities of LEGO bricks through skip cutting and image processing. By jumping and cutting editing points, LEGO works and scenes in different scenes are quickly displayed, bringing a refreshing viewing experience to the audience. At the same time, image processing technology is used in the advertisement to organically combine the real world with LEGO works, increasing the visual impact and viewing experience of the audience.

4.2. Samsung mobile phone advertisement

This advertisement was released by Samsung in April 2023, featuring characters unlocking their phones in different scenes to switch between them. The advertisement showcases the convenience and intelligence of the phone through editing and fast screen transitions. Moreover, by using a combination of "brain holes" and "brain holes" for editing and editing, the "brain holes" are visualized, creating a strong visual impact and successfully capturing the audience's visual focus, highlighting the core selling point of the phone.

5. Conclusion

Editing points and their spatiotemporal processing are the core theories and paradigms in short video editing. By accurately selecting editing points and cleverly handling temporal and spatial relationships, the narrative effect and viewing value of short videos can be enhanced, and their dissemination and influence can be strengthened. In the future, with the continuous advancement of technology and the continuous development of the market, short video editing will present a more

diversified and personalized trend. Producers need to constantly learn and master new editing techniques and theoretical knowledge to cope with increasingly fierce market competition and changes in audience demand.

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