

abstract

Opera and musicals are comprehensive art forms that fuse multiple creative disciplines. Trial and error is an essential part of the creative process to achieve better results, and in stage plays, dialogue, lyrics, and direction are sometimes changed during practice.

Computer software is indispensable in creative activities; novels, illustrations and music compose. The advantages of working on a computer include the function to redo a work many times and the function to easily prototype different forms of the same work.

The creative activities of stage plays also have the potential to produce better works by co-creating with computers. In this thesis, we explore the possibilities of co-creation where computers have not yet been introduced; focusing on lyric translations and eye makeup.

Large Language Models (LLMs) have made a creative activity easy to obtain answers to questions and output illustrations simply by entering prompts. While chat services and image generation using LLMs are versatile enough to serve as a consulting tool during the idea generation stage, they can be difficult to use in limited situations. Therefore, a dedicated interface that can present the generated content to the user with conditions and restrictions taken into account in advance was considered necessary.

When considering the provision of a dedicated interface to the creative environment in the musical, there are some issues that need to be addressed. In creation, there is a process of trial-and-error in which the work is refined and revised many times in order to create a better product. Therefore, an interface that facilitates trial-and-error and changes the editing status in real time is necessary for computer-based creation. The population involved in musical productions is more amateur than professional, and not all users of the proposed system have expert knowledge. Complex parameter settings and operations are difficult, and editing must be simple. This paper proposes an interface that allows users to create music with simple operations and that reflects the user's interaction in real time.

For lyric translations, the proposed interface allows the user to select a candidate lyric translation,

edit it with hiragana, and have the input lyric translation reflected in the score in real time. As a result, even if the user does not have expert knowledge of the original language or the music, the system can reflect the meaning of the lyrics while preserving the atmosphere of the original song.

For makeup, we provide an interface that allows user to easily generate makeup designs for the stage based on the role by selecting and editing eye shadow, eye line, and parts that reflect the characteristics of the motif from a list of candidates. In addition, the use of fake tattoo stickers makes it possible to apply makeup without differences in the finished product depending on the skill of the individual. As a result, it has been confirmed that the design is more similar to stage makeup than conventional makeup methods.

The introduction of computers into the field of theatrical performance facilitates trial and error and leads to the divergence of ideas and the prototyping of new techniques and expressions. This will lead to the development of the theatrical field, and the stage will become a more popular and accessible art form for the public.