

Artificial Intelligence with Live Sound and Stage Production

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Background:

The project aims to design an application to enable automatic live sound and stage production to reduce manpower. The application can be used in Drama performance, live band shows, and culture dance, etc. Significance: Most stage productions need to have a technical design, but more time is spent on producing the stage show. Also, if the invited performer is a student, choosing the rehearsal time may become difficult since the students may have a lot of homework to do. On the other hand, the people who need to go to work may find it hard to choose a rehearsal date. Therefore, the income of the drama production may be lost.

Why is it important?

Nowadays, AI is popular nowadays as a lot of companies and organizations would use AI for big data analysis and object detection to help them accomplish jobs. AI can be used for other purposes such as, in supermarkets, government departments, and canteens etc. It could reduce the manpower for staff. Moreover, AI can be used for creating things.

This project aims to build an application to reduce the manpower of mixing engineers.

This project requires many audio devices/interfaces to test the application.

The AI tools to be used are K-means and clustering, and the creation tools to be used are java and R language.



Research methodology

Estimating method: First, build a simple interface for a remote control and the java application for the main unit. Second, the sockets will be connected together and this part may need to spend more time. Then, more parameters for the audio adjustment needs to be identified. Next, is to conduct an audio analysis for the suitable attributes. After that, a built in IO will be used to test the audio connection and apps interactivity. If the test successful, an audio IO would be used to test the system.

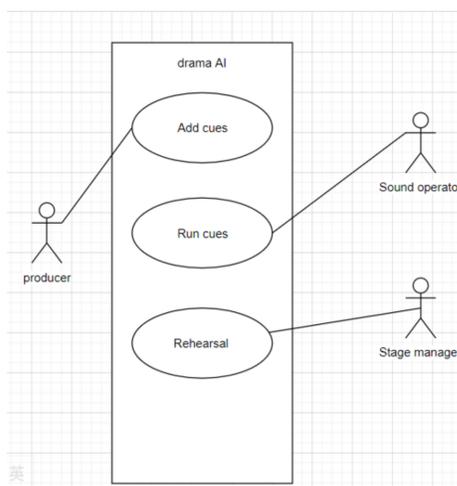


Figure 1. Drama performance sections

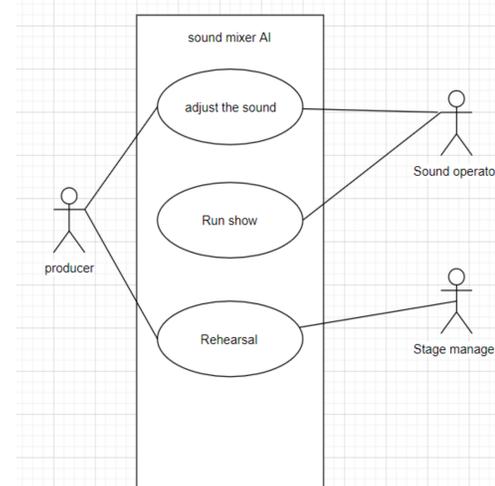


Figure 2. Live show sections

Findings:

This project hopes to accomplish an integrated stage production system. It will be used for drama, opera and live band shows. The action plan includes the interface design, code implementation, interface testing, socket programming, sound testing and cue testing.

Conclusion:

This project aims to create a live sound production with Artificial Intelligence. This project was difficult and a lot of time was spent achieve it. The audio and video component needed to be implemented and merged with the programme for socket programming. The last part concerns the Artificial Intelligence, however, due to the COVID-19 outbreak, there was limited resource to finish the product, so the product was reduced.

Figure 4. Proposed system diagram

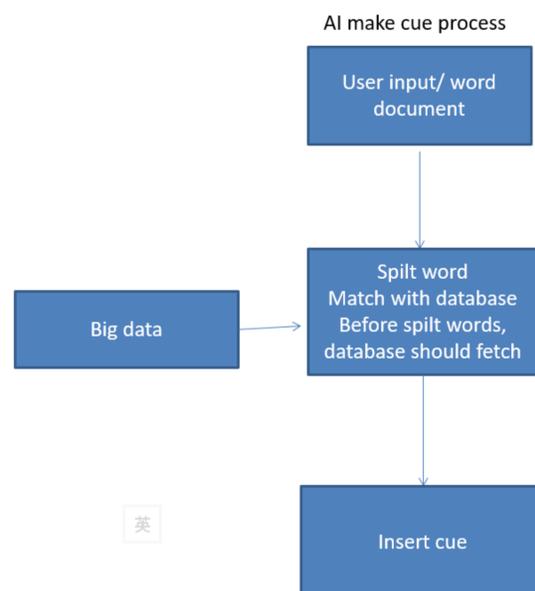
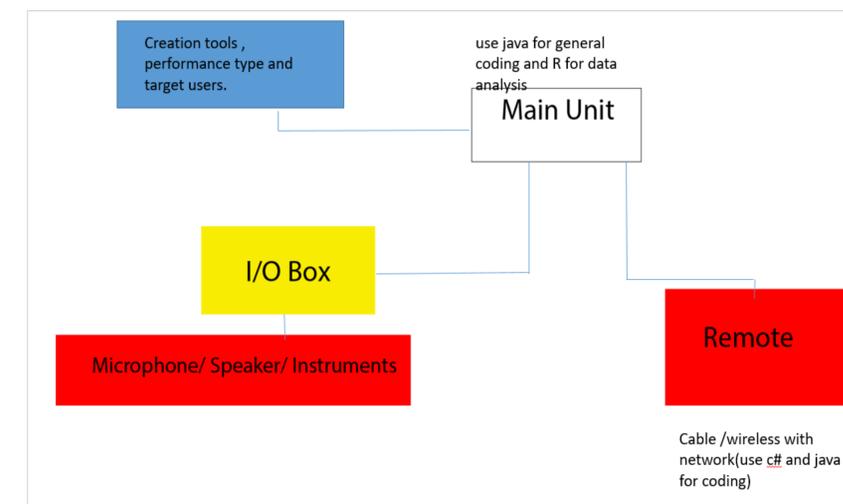


Figure 3. Make sue process