**Research Trends in Virtual Reality Music Concert Technology: A Systematic Literature Review**

* What is the research problem addressed by each paper?
* Why is the problem considered challenging in the research domain?
* Why is it important to address such problem?  
  • What is the proposed solution for each paper?  
  • How is mixed reality increasing immersion in the context?  
  • What concept or ideas did you gain from the papers to design your virtual world?  
  • What are the several dimensions of collaborative space?  
  • What are the key characteristics of previous designs with respect to your envisioned solution?  
  • What are the key elements of a good collaboration space concept?

This paper is looking at recent papers on VR music concerts and reviewing the different types of technologies and how they interact with the users.

The problem is considered a challenge because the use of VR in concerts is a very new field, rising in popularity particularly over lockdown.

It is important to address this problem as VR, and other mixed realities, are rising in popularity and usability for the public. Collecting and organizing existing research will help further research as patterns and technologies will be more readily available.

There was no direct proposed solution as this paper was a literature review however there are some interesting things to consider. Virtual Reality in the context of concerts tend to have a bigger focus on the artist, more so than the social elements within real-life concerts. Additionally, there is discussion about how music can be adjusted per person, so that it could either mimic what it would feel like in that spot within the audience or to tailor to preferences of the individual.

There were many metrics to evaluate user experience within mixed reality. When addressing flow/immersion itself, the study found that questionnaires that rated concepts were a great way to gather data. Additionally, they investigate the concept of Flow State Scale, which is when users are totally immersed in an activity. As well as diving into FSS, the paper explores many techniques, such as haptic feedback suits and real-time motion tracking to increase the immersion felt by the user.

There are some concepts that would prove beneficial to my virtual world. For example, user avatars are a great way to increase immersion as it allows users to have more expression of self within the simulation. Additionally, having multiple positions where the user can “stand” might be good to include as it may change people’s habits.

There are a few different types of collaborative space, including:

* Audience to Audience, where members of the audience interact with each other.
* Audience to Performer, where the performer may engage with the audience.
* Performer to Performer, where performers can interact with each other on stage.

Past designs are very simple, regarding avatars and motion capture. Additionally, newer technologies allow for better sound per user as how music and voices sound can change depending on the location.

For good collaboration space, it is vital that it is in as real-time as possible. This is so that the delay between actions isn’t off-throwing for users interacting with each other and that they can simulate in-person gatherings. Additionally, more stimulation to other senses, besides sight and sound would make interactions more immersive and could further increase quality of collaborative spaces; However this is more to do with hardware integration than what could be performed in this project.