

# SYNTHSPACE: A MIXED REALITY APP FOR MUSICIANS AND PERFORMERS

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## ABSTRACT:

*Unquestionably, the future is getting more inclusive, and technology is about to take a huge step forward in harmony. These developments are already altering how we interact and live our lives, from virtual and augmented reality glasses to blockchain technology and digital payments. This project report investigates an idea intended to leverage the enormous potential of mixed reality. Although similar concepts and platforms may already exist in different stages of development, this project explores a future in which these technologies are more widely accessible. This paper investigates a mixed reality (MR) platform that serves as a conduit between street artists and consumers of MR glasses. It allows performers to earn a living through user contributions while providing audiences with an immersive and captivating experience.*

*The text outlines the objectives of the platform and the issues it aims to solve in an easy-to-read narrative format. It examines how the social landscape is changing and the challenges that street artists are currently facing in a world where MR eyewear and electronic payments are the norm. The idea for this platform is sparked by the need to strengthen the relationship between artists and users. The falling action highlights the features and advantages of the platform. It displays how performers can schedule performances, assign audience members to particular areas, and oversee their earnings and following. Furthermore, user personas such as the Classical Virtuoso, the Digital Artistic Innovator, the Community-Centered Artist, and the Emerging Talent demonstrate how artists can use the platform to interact with and maximize their audience.*

*It is also anticipated that users of this platform will benefit greatly. They'll be able to see street acts from a new angle and give the artists they like cash aid. Locating and going to local street performances will become easier. The project team is optimistic about this platform's ability to completely transform how street artists earn a living and engage with their audience in a future greatly impacted by mixed reality, even though it is still in the conceptual stage.*

**Keywords:** Future - Mixed Reality - potential - Design - Virtual Reality - Human-computer interaction - emotion/estimated donation algorithm - popularity index

## 1. INTRODUCTION

Remember CDs? Do you have the memory of using those CDs and floppy disks? Well, most of the new generations don't know what CDs and floppy disks are. They do not know how to use them and solve a minor problem. 'That one memory that is deep in my head is when I got caught by my principal for bringing gaming CDs to exchange for another game CD'.

We crave attention, we used to care and crave for people, and we crave love. With that included, we also crave technology, we crave simple cheap solutions, we crave, we adopt, and we forget. That's true, it happens to a human unconsciously, we are bio-engineered to forget things. These cheap thrills and cheap pleasures are just some of the ways that make it happen. This will be the beginning of the future of advanced technologies. This is where we see potential towards MR glasses

it happens to a human unconsciously, we are bio-engineered to forget things. These cheap thrills and cheap pleasures are just some of the ways that make it happen. This will be the beginning of the future of advanced technologies. This is where we see potential towards MR glasses.

This theory paper is based on the probability of a future where people walk around with Mixed Reality glasses and interact with people with a tweet or an Instagram post. The reason why we choose to say mixed reality glasses is the possibility that Mixed Reality technology will be the horse that has the highest bet. In the next 10 years, people will upgrade to new technologies. We want to create a possible opportunity, to create a proof of concept for the future. Every beginning has an end, likewise, the beginning of the future of advanced technology starts to take shape. This is where we see a potential towards Mixed Reality glasses. Mixed Reality glasses have the

potential to be the successor for Phones, tablets, laptops, cameras and much more. It will be able to merge the best of both worlds; the Digital and physical world.

### 1.1 The 'WHAT'

Unlike traditional interfaces, which have flat, two-dimensional canvases, AR and VR presents a new playing field—volumetric and three-dimensional. Designers are no longer limited to merely placing buttons, graphics, or text on a static screen. Instead, they create immersive experiences for people, arranging interactive scenarios that emerge around them. This transition from 2D to 3D is more than simply an aesthetic change; it represents a fundamental rethinking of how people engage with digital material.

Far from being just features of game pleasure, AR (Augmented Reality) and VR (Virtual Reality) stand as leads, propelling enormous change in UI/UX design. They disrupt traditional design's long-standing ideas and standards, ushering the industry into a new era defined by depth, dimension, and dynamism.

The key is to prioritise new types of immersive design and smart consumer content that can readily integrate into the virtual environment and drive users to connect and communicate with it.

For corporations seeking visibility, the benefits swiftly exceed the expenses, especially for Gen Z demographics, where 87% of young users are already interacting with current metaverse platforms such as Fortnite from the convenience of their smartphones. Indeed, creating an immersive experience within the metaverse that allows a player to engage and interact with a virtual version of a product or service will result in greater real-world conversion rates.

### 1.2 The Plus.

Life has taken on a whole new dimension in a world where Mixed Reality glasses, digital payments, UPI payments, blockchain, and digital currencies, are commonly used technologies and ways of interaction.

Every individual adopted AR/VR glasses or a gadget that connected them to the digital and physical worlds simultaneously. Interactions between individuals and the world around them are altered dramatically as a result of this technological shift.

Bridging the gap between artists and MR glass users: The gap between the real world and the virtual world can be merged with the help of technologies as such. Mixed reality glasses enable users to see real-world performance while enjoying an improved, immersive experience via digital overlays. Users may find the performance more interesting and memorable as a result of this. Mixed reality glasses can be paired with digital payment technologies such as UPI payments and blockchain that enable consumers to contribute economically to support artists and their professions. This can help artists sustain their source of income

### 1.3 The Idea.

This project intends to use an innovative interface to change audience interaction with street artists. Performers may now reserve specific viewing spaces within the MR experience, collect crowd statistics for upcoming events and fan development, and sell content live. The magic arises when users wear Mixed Reality glasses, which allow them to effortlessly engage with artists and record memories, buy items, access performance information, give directly, and even purchase promotional offers.

The performance is the focal point of this project. We put customers first by creating an interface that is based on emotional affinity. Rather than dictating emotions to users, this "emotional design" method makes conscious decisions to arouse pleasant sensations in them. Think about the difference between being overwhelmed by a busy website and feeling supported by progress updates. An interface can establish a stronger emotional connection between a performer and an audience if it is explicit about its purpose and functionality.

## 2. Literature Review

User-centred design (UCD) is a design approach that places users at the centre of the development process. It is the only practical way to create interactive products that are effective, usable, engaging, and humane. Even if interactive products work well from an engineering standpoint, it is often unclear how humans will use them

through certain user interfaces. UCD aims to address this concern by incorporating usability, user experience, and ease of learning into the design and development process. [1]

Extended reality (XR), which combines virtual reality (VR) and augmented reality (AR), is poised to become the next dominant computing platform, shaping human interaction with the digital world for the next half-century, much as personal computing did in the previous half-century. People will use XR to work, play, and connect with others. [2]

This study provides a comprehensive analysis of UX design using machine learning (ML), drawing on the perspectives of UX designers and specialists. The majority of UX designers who participated in the study lacked experience using ML as a design tool. This suggests that some of the challenges identified in the study may be attributed to the novelty of using ML in UX design. Expanding the number of models used in ML for UX design would not only increase the quantity and quality of input, but would also have significant implications for ML development, testing, and feedback collection. Additionally, the creation of rougher models in the early stages of app development (when user feedback is critical) could free up a significant amount of time, delaying the refinement of the user interface. This suggests that further research may be warranted to explore the impact of this approach on the overall outcome of UX design.[3]

### 3. OBJECTIVES AND THE STORY

The year is 2045. Mixed Reality glasses are now ubiquitous, and people use them for everything from work to entertainment to communication. In this world, street performers have found a new way to connect with their audiences and make a living. They use Mixed Reality glasses to create immersive and interactive performances that transport viewers to another time and place. It's a bustling city street on a warm summer day. People are rushing from place to place, their heads down, their thoughts on whatever they need to get done. But there's one thing that stops everyone in their tracks. A street performance of a very popular song. A performer is standing in the middle of the sidewalk, their body surrounded by a swirling vortex of light and sound. One such performer is a guitarist named Sumedh. Sumedh has been playing the guitar since he was a child, and he has always dreamed of making a living from his music. A few years ago, Sumedh discovered Mixed Reality glasses and saw the potential they had for street performance. He started experimenting with different ways to use Mixed Reality glasses to create immersive and engaging experiences for his audience. Sumedh, a classically trained guitarist, dreams of making a living from his music. In a world where Mixed Reality glasses are ubiquitous, he sees an opportunity to create a new kind of street performance. Sumedh creates a virtual world where he performs in iconic settings, from a field of wildflowers in springtime to a snowy forest in wintertime. He also creates a virtual museum where he plays his violin while viewers explore exhibits about the history of the violin. Sumedh's mixed Reality glasses performances are a huge success. He performs for audiences all over the world, and he earns a loyal following of fans.

Mixed reality glasses have the potential to revolutionise the way we experience music. They can transport us to other worlds and allow us to interact with music in new and exciting ways. Yeaup. I know the story is too detailed. That's the thing. The more detailed the story is, the more easy it will be for people to get a clear picture of the concept.

Mixed Reality glasses will be so common that they will be used by everyone, The reason behind this idea is to solve and connect the bridge between the artists and the users. Leading the artists to earn money and sustain. So, the process starts with the artist dedicating a unique space/area in the physical world and in the digital world.

#### 3.1The Algorithm.

1. Identify the performance
2. Wait for some time to identify if the user likes the performance and make sure the user stays there for more than 8 seconds.
3. If the user likes the performance, then start the payment process.
4. The payment process goes by,
  - for every second they are watching the performance, a particular amount of points will be earned by the performer, which leads to a trigger action that leads to deducting money from the user's wallet.
  - per se; for 15 seconds, 25 cents will be ready to be transferred to the performer.

- If the user is standing there for a minute, the performer will be earning up to 1 dollar from the user.
5. when the user finally moves from the place, a pop-up will let the user know that this amount of money/ points were deducted for the performance.
  6. Then the money will be added to the performer's wallet or the app that they will be using.

### 3.2 The User (Perspective)

when the user comes and stands in that particular area, the artist will start earning. Of course, there are some steps and rules, and safety and security are involved.

1. First, the user has to be standing in the dedicated semi-circle, which will trigger a countdown where the user and the artist will be notified. The user's MR glasses will automatically start recording a memory or the whole time while he sees the performance.
2. The performer/artist will be notified about the count, minutes and number of people standing there.
3. Then the next trigger for the scenario will be triggered by the user standing there for more than 8 seconds. After the 8s mark, the first transaction for the performance will be moved to a digital wallet. Which will store the entire amount till the session with the individual user is over. In other terms, the cloud wallet will hold the money till the performance is over to avoid transaction chaos every 15 seconds.
4. Yes, for every 15 seconds, the user will be charged an amount.
5. The minimum a user can give is 0. The maximum the user can give is 100 USD per 15 seconds.
6. The 15s mark is calculated by the user's total concentration per minute by the user's interest data map. Leading us to set a time frame of 15 seconds
7. For every 15 seconds, the user will release 25 cents to the cloud wallet automatically. For one minute the performer will earn 1 dollar from every user. Taking into consideration the economy, the deduction amount changes.
8. If 100 people are standing inside the semi-circle, a performer can earn up to 100 USD a minute. But that probability is a gamble and dangerously optimistic.
9. Take in mention that not all users have money in their wallets or are not interested in giving money and some users do not use this app. The total amount earned in a minute can change and drop from 55 to 70%.
10. This puts us in the sweet spot of 55%; of the people having the money and will be giving out money
11. This 25 cents per 15 seconds is calculated by the economy as said. as well as, the transaction statements of the user and, EDA (emotion/estimated donation algorithm).
12. The people are separated into 4 sets. People earning below 1,000 USD, people earning below 10,000 USD, people earning below 100,000 USD and people earning above 100,000
13. The money will be deducted only from people who are above the 1000 USD mark. users below 1000 USD will also be able to give money, but there will be no timers and the user cannot save the performance as a memory or a video. They can if they pay.
14. Users above 1000 USD will have the option to increase the 25 cents up to 5 dollars and donate how much ever they want.
15. The money that is saved in the cloud wallet will reach the performer after the show ends, or after that user session ends. The extra donations will also be saved in the cloud wallet.
16. The built-in wallet plays a vital role—also the location and the credit score of the user.
17. Though the wallet has a hierarchy, the app, location and the artist follower base play a vital role too.

### 3.3 The Performer (Perspective)

Performers are the heroes here. They are the sailors of the project. The performers will earn through the app. There will be some % that will be deducted from both the users and the performers. Depending on their score levels. The performer has to have the app installed in their MR headsets or on their phone. Which will be used to monitor the user's feed and seconds played, collect money and hold a database of the user's transaction history to their account. (for security and ads reasons.)

This app and platform will help the artists and performers control and use what they want the most as a feature. They will be able to do as follows,

1. Organise a performance in any public place, with prior approval. (which will be a one-time subscription plan for performers.)

2. Set audiences dedicated standing area. setting up areas with high income and having a good view of the performance, and setting up spaces with less income.
3. Users can create a dedicated space by using the app. It will set a unique space by calculating artist interactions with the audience. That will help create spaces with more income spaces
4. The users will be able to choose between if they wanna get paid by the minute or pay on time. Like, if they want 3\$ at the beginning of the show, they can. They will also be able to control how the money has to be flown for them.
5. Another thing that's gonna be easy for artists is, that it will be easy for the users to get connected whenever they want. Which will be a big boost for the artist who has less fan-score.

To be performer-friendly, there is nothing much the performer has to do. All they have to do is chill and entertain the audience, cuz that's how it works bruh... its sleek and performer-friendly.

Artists will set up in a location where there is a good crowd. The artist will begin to set up the place for the performance and will also be setting up the app. Which happens in three steps.

- Open the app or activate your Mixed-reality glasses. Which has the app in it.
- Set the dedicated areas for people to stand and enjoy the show.
- Collect money automatically through the app. The app will take care of everything that's needed.

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