

## **Research Aim:**

To explore and create novel sound design strategies that significantly improve player immersion in video games, with a special emphasis on dynamic audio environments that respond to player actions and emotional states.

## **Research Hypothesis:**

Adaptive and context-sensitive sound design that responds dynamically to player activity and game status will considerably boost observed immersion levels when compared to typical static audio implementations in video games.

## **Research Questions:**

1. How do various audio design parameters (spatial location, frequency range, and loudness variation) affect players' sense of presence and emotional engagement in gaming environments?
2. What sound design strategies are most effective for achieving psychological immersion in various gaming genres (horror, adventure, simulation, etc.)?
3. To what extent may real-time audio adaptation based on player behavior measurements improve perceived immersion over pre-determined sound environments?

## **Inspirational Sources:**

- **Zhang, J., & Fu, X. (2023).** "Adaptive sound design frameworks in contemporary gaming: A systematic review." *IEEE Transactions on Games*, 15(2), 148-162.
- **Ribeiro, A., & Serra, X. (2023).** "Procedural audio generation using deep learning for enhanced game immersion." *IEEE Transactions on Games*, 15(3), 201-214.
- **Westner, P., & Hauff, C. (2023).** "Sonification of player biometrics: Impact on immersion in competitive gaming." *Proceedings of the ACM on Human-Computer Interaction*, 7(CHI PLAY), 1-24.
- **Parker, J. R., & Heerema, J. (2022).** "Audio augmented reality for enhanced game immersion." *Entertainment Computing*, 40, 100453.
- **Tóth, V., & Fahlenbrach, K. (2022).** "Emotional design of dynamic sound in modern survival horror games." *Journal of Game Studies*, 22(1), 78-96.

