

Title: Development of a Virtual Assistant for Video Game in game menu navigator Accessibility for Visually Impaired and Blind Users (computer vision)

Context

Video games are currently the world's leading entertainment industry, yet they remain largely inaccessible to people with visual disabilities. Among recent titles, *Harry Potter: Hogwarts Legacy* presents a unique opportunity to rethink accessibility. This rich and immersive universe is particularly celebrated for its detailed visuals and varied gameplay mechanics. However, these very features pose significant challenges for visually impaired and blind players, who are unable to enjoy the experience fully.

This project focuses on bridging the accessibility gap in modern fighting games by addressing the paradox of Street Fighter 6. While this title is a pioneer in gameplay accessibility thanks to its innovative sound design, its highly stylized menus remain a major barrier for visually impaired players. Ironically, the menus required to activate these accessibility options are themselves inaccessible. The goal is to develop a virtual assistant capable of navigating these complex interfaces. This requires a hybrid approach combining Optical Character Recognition and advanced image analysis to interpret unconventional fonts and dynamic backgrounds. The quantifiable objective is to enable a user to navigate from the launch screen to the activation of accessibility settings without any visual assistance.

Source : <https://youtu.be/rvlccqG0txM>

Methodology: Collaboration with Mehdi Smael Berahal, co-founder of the LudAccess association. Opportunity to test the solution with visually impaired individuals to identify possible audio feedback options and precise user needs.

Technological Development: Utilize computer vision to interpret the game's visual navigation elements (see illustrations on the next page). Create audio feedback mechanisms to guide the user effectively.

Project Supervisor: Fabien Vérité

Partner: LudAccess

BlindWarrior-PC
CHALLENGER --- LP

FIGHTING GROUND

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Ⓐ Confirm Ⓑ Back ≡ Multi Menu ✕ Battle Settings

Options

LB Game Controls Camera Display **Audio** Language Graphics RB

- Basic Sound Settings
- Detailed Sound Effects Volume Settings
- In-Battle Accessibility Settings**
- Other Settings

- Distance To Opponent Sound < Off >
- Cross-up Attack Hit Symbol Sound < Off >
- High/Mid/Low Attack Hit Symbol Sound < Off >
- Vitality/SA Gauge Amount Notification Sound < Off >
- Drive Gauge Status Notification Sound < Off >
- Super Art Gauge Usage Indicator Effect < Off >
- Stage/Character Select Narration Timing < Upon Selecting With Cursor >
- Restore Default Settings

Enable or disable the sound effect that plays to notify the player of their distance from their opponent.

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