AUGMENTED REALITY THEATER

Don’t just watch the movie...experience it.

Our design creates an immersive movie theater experience by leveraging the emerging technologies of augmented reality, perceptual computing cameras, REVEL and Aireal.

Interviews with theater patrons, a theater manager, an experience design professor, and a former story editor at Universal Pictures contributed to the development of this design.

THE EXPERIENCE

CHRISTINA

To describe the experience, we follow a single patron through a typical scenario. Her name is Christina, and this is her first time visiting the Augmented Reality Theater.

PHASE 1 - PREPARATION

Christina enters the lobby (1) and approaches the counter. She selects her movie and uses a touchscreen to select her seat.

Christina is then handed a pair of special smart glasses and is instructed to put them on to begin the experience.

PHASE 2 - BUILDUP

Christina walks through the lobby and finds herself in a long hallway (2). As she walks down the hallway, she notices it slowly starting to change into a snow-covered forest with trees all around her.

Christina reaches out to touch the wall and realizes that it feels like tree bark. She runs her hands along the walls and slowly continues down the hallway.

PHASE 3 - INITIATION

Christina walks the hallway and finds herself in the Experience Room (3). As she walks, she sees other patrons. The space is covered in snow, and has a cave entrance on one side.

All of the patrons move around the space, kicking snow, touching the walls, and exploring the environment.

PHASE 4 - CLIMAX

Christina enters the theater (4) and sees a cave scene filled with movie characters. She sees the cave she selected earlier is highlighted and sits down.

The theater is domed, and the screen curves into her periphery, completely immersing her in the experience. As the scene continues, Christina notices the environment around her changing to match the environment of the film.

PHASE 5 - WIND-DOWN

When the film ends, Christina sees her cave highlighted and leaves. She walks outside to go through a tunnel that feels like a warm beach.

When she exits the theater, she feels warm and relaxed.

[1] LOBBY
• Patrons can choose their own seats
• Patrons put on their glasses
• A virtual character leads them to their theater

[2] SLOW CHANGE HALLWAY
• Leads patrons to their theater
• Allows patrons to acclimate slowly to the experience
• Floor and walls are themed in relation to the film
• Participants can feel textures on the walls via REVEL technology

[3] EXPERIENCE ROOM
• Visuals based on a setting from the film
• Patrons can interact with other patrons and virtual characters from the film
• Perceptual computing cameras track body position of the patrons to make interactions more immersive
• Tactile experience via REVEL and Aireal technology
• Centralized system ensures each patron experiences the same scene in real time

[4] THEATER
• Theater entrance is themed as part of the film
• Patrons can feel objects passing them by
• Patrons can interact with virtual characters from the film
• Patrons can feel objects brush past them via Aireal
• Patients can play and interact with the virtual snow within the experience

TECHNOLOGIES

AUGMENTED REALITY GLASSES

The glasses used in this scenario are our own design, however, there are several current iterations of augmented reality glasses that show our technology will be possible within 5-10 years, including the Epson Moverio linked below.


REVEL

Reverse Electrovibration technology is used to allow patrons to touch smooth walls but feel the texture of whatever surface is visible.

http://www.disneyresearch.com/project/revel-programming-the-sense-of-touch/

AIREAL

Aireal technology uses air vortexes to give patrons the sensation of objects passing them in the air. This allows patrons to feel objects moving past them without needing any objects or props in the space.

http://www.disneyresearch.com/project/aireal/