

Immersive Panoramic Video: An Alternative VR Environment

Sarah D. Miyahira, Ph.D.
Pacific Telehealth & Technology Hui
Raymond A. Folen, Ph.D.
Tripler Army Medical Center
Stanley M. Saiki, Jr., M.D.
John A. Burns School of Medicine
Clyde Hladky
Pacific Telehealth and Technology Hui

VRBH Program



CG-Based VR Applications

- Cost to create
- Time to create
- Cost to modify
- Platform incompatibility
- Distribution



Might There Be Another Way?

- Use existing gaming engines
 - Speed up programming time
 - Complex, detailed environment
 - Distribution costs could be high
- Modify existing programs
 - Permission required
 - Programming required
- VR environment designer tools
- 360° Immersive Panoramic Video

Immersive Panoramic Video

- 360° view
- 'Real World' environment
- Works with HMDs and trackers
- Requires little programming
- Distribution costs low
- May be useful with lower complexity VR scenarios
- Fast production!

Immersive Panoramic Video

- Integrated Media Systems Center, USC



Anger Study

- 360 Panoramic Video vs Flat Screen
 - Pre-post measures
 - Self-report
 - Anger
 - Presence (post-test only)
 - Self-esteem (pre-test only)
 - Physiologic
 - Heart rate
 - Blood Pressure
 - Skin Conductance
 - Peripheral Skin Temperature
 - Respiration
 - 8 Different videos
- Future Applications

Immersive Panoramic Video

- Incited Media, Inc.



Immersive Panoramic Video

- Nicotine Craving Video

Nicotine Craving Study

- 360 Panoramic Video vs Flat Screen
 - Measures taken at baseline and pre-post waiting room, bar, and at table
 - Self-report
 - Craving
 - Presence
 - Physiologic
 - Heart rate
 - Blood Pressure
 - Skin Conductance
 - Peripheral Skin Temperature
 - Respiration
 - Future Applications

Immersive Panoramic Video

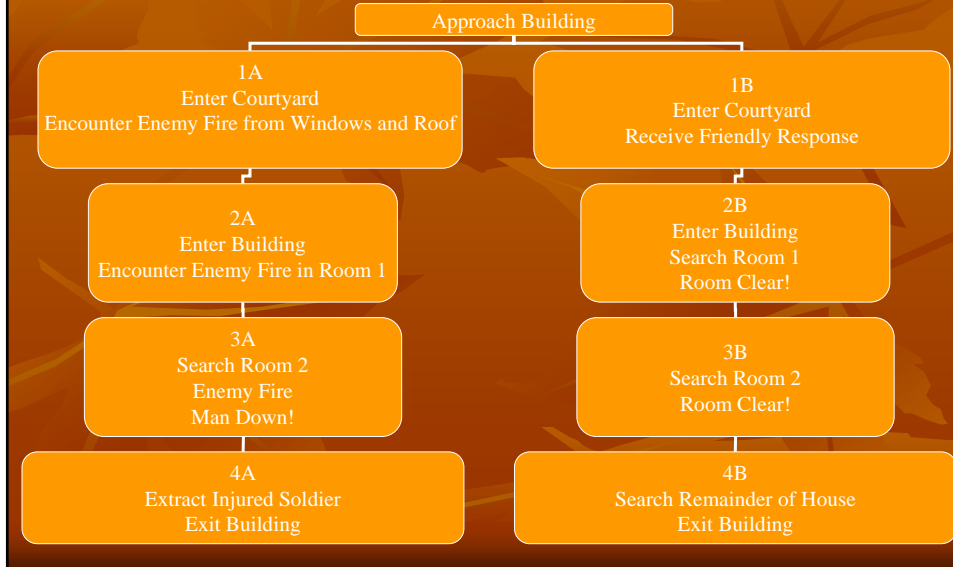
- Immersive Media Corporation



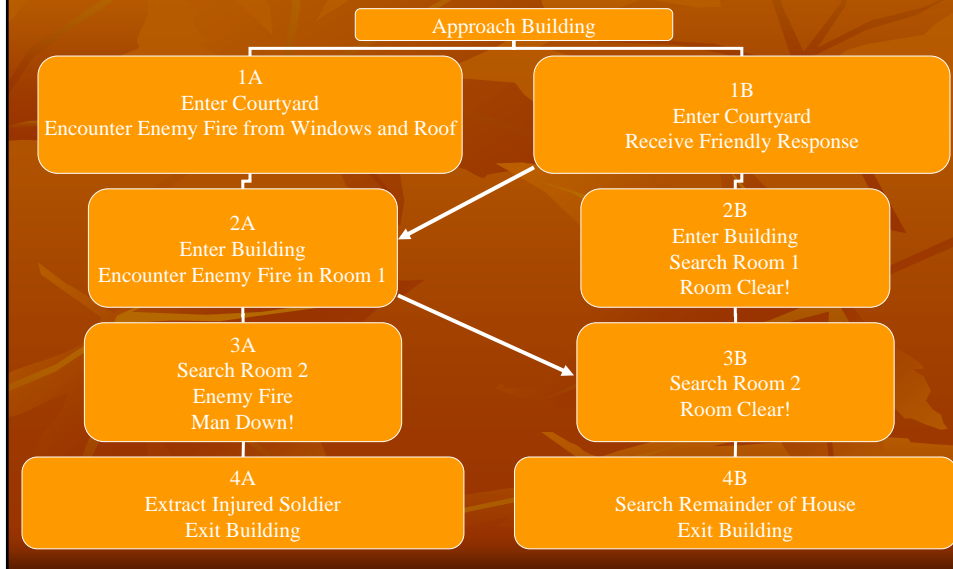
Immersive Panoramic Video



Hierarchical Treatment Approach



Hierarchical Treatment Approach



Iraq World Comparison Study

- House Search
 - Immersive Video vs CG
 - Subjects: Warfighters
 - Inclusion: Tour in Iraq
 - Exclusion: PTSD
 - Self-Report and Physiological Measures of Immersion and Arousal

Other Applications

Fear of Flying



Fear of Heights

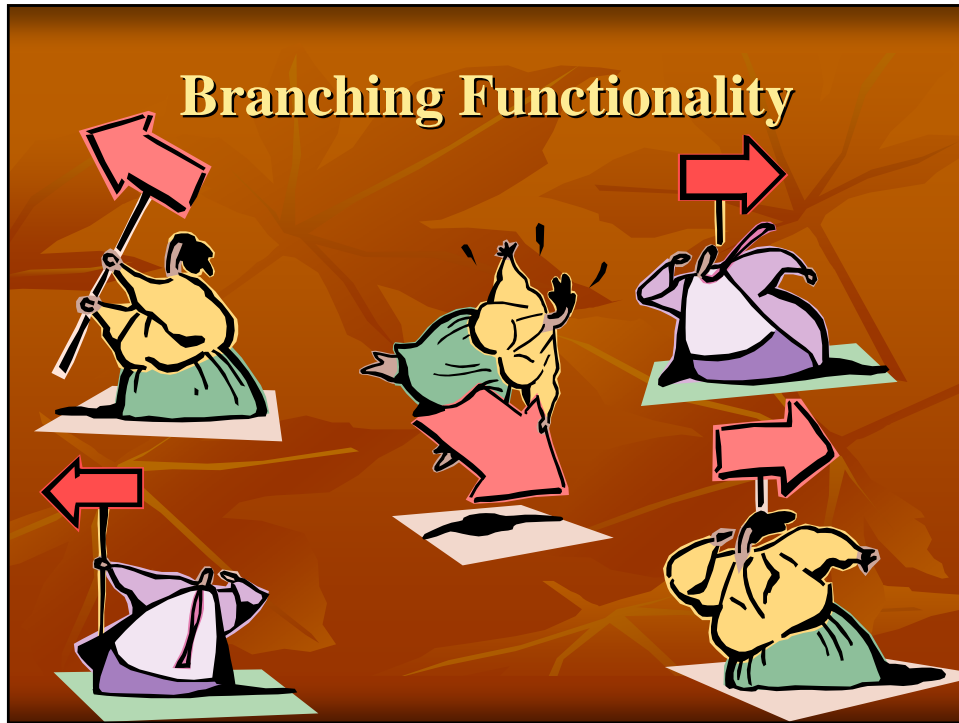
- Shoot video on each floor
 - 1, 2, 3, 4, 5, 6, 7, 8, 9, 10
- Shoot video between floors
 - u12, u23, u34, u45, u56, u67, u78, u89
 - d21, d32, d43, d54, d65, d76, d87, d98
- “I’m ready to go straight to the 5th floor, Doc”
 - Therapist: Press “5”
 - Computer: 1, b12, b23, b34, b45, 5
- “Um, let’s go back to the 2nd floor, please”
 - Therapist: Press 2
 - Computer: d54, d43, d32, 2

Fear of Public Speaking

- From podium
 - Video1 of audience during introduction
 - Video2 of audience applauding
 - Video3 of audience listening attentively
 - Video4 of audience laughing appreciatively
 - Video5 of audience mildly bored
 - Video6 of audience bored with some talking
 - Video7 of audience with everyone talking to each other
 - Video8 of audience booing
 - Video9 of audience walking out of auditorium

Bladder 'Shyness'

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Limitations

- No patient controlled movement in the environment (yet)
- No complex behavioral tracking
- No data capture
- No interaction with objects/people in the environment (yet)
- Visible breaks between video segments
- Still pricy!

Strengths

- 360° view
- 'Real World' environment
- Fast production!
- Works with HMDs and trackers
- Requires little programming
- Distribution costs low
- Useful for low to medium complexity VR scenarios