Bringing History Alive: Dramatic Augmented Reality Experiences in Historic Settings

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Overview

- **Media in the world**
  - Introduction to AR and technologies
  - A course on “AR Experience Design”
  - Domain: Oakland Cemetery
- **AR Experiences in Historic Settings**
- **What have we learned?**
  - The importance of place
  - Drama vs. Documentary, Fact vs. Fiction
  - Interactivity
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Media in the World: Augmented Reality (AR)

- Directly enhance a person’s senses with synthetic information
- 3D graphical objects and sound merged with the world
- Out in the Physical World
  - Use wearable computers, see-through displays
  - Display media in context of physical space
AR in Historic Settings

- Physical re-creations
  - Show site as it was at different times
  - Seen from perspective of visitor

- Examples
  - Original asylum on Columbia campus in Situated Docs/MARS
  - Greek sites with ArcheoGuide

(Copyight Columbia University)
AR in Historic Settings

- Drama & narrative
  - Build on non-AR tours
  - Use stories (factual or fictional) to engage, entertain
  - Recreate sites, characters, events

- Examples
  - Our class projects often use ghosts near graves to tell stories

(Courtesy Smitha Prasad)
Why use AR?

In Place Display

Continuous Display

Private, Unobtrusive

Per-user Customization

(Courtesy Emmanuel Moreno)
How does AR work?
How does AR work?

See-through display
How does AR work?

Head (display) tracking
How does AR work?

"Interesting object" tracking
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Course Overview

- Combine concepts from New Media Design, Experience Design, Human-Computer Interaction
- How do we create AR experiences willing participants can understand, enjoy, learn from?
- Projects in Historic Settings
  - Rich content, many possible approaches, varied customers
A Course on “AR Experience Design”

- Course Content
  - Multidisciplinary content, group projects
  - Emphasis on the design of the experience

- Technological support for prototyping
  - Specific support for early design activities

- Project focus
  - AR Experiences in Oakland Cemetery
  - Groups can emphasize one or more of
    - Content, media theory, technology
Technological Support: DART (the Designer’s AR Toolkit)

- Built on Macromedia Director
- Familiar tool, model
- Simple access to many technologies
- Camera, trackers, ...
- Sketched 3D content
- Easy to experiment
Focus: Oakland Cemetery
Oakland’s Rich Environment
Oakland’s Rich Environment
Oakland’s Rich Environment
Oakland’s Rich Environment
AR in Oakland

- What kinds of experiences would be appropriate and effective?
  - Client interested in restoring the cemetery
  - No "ghost and goblins" stories, games

- What kinds of information to convey?
  - Much of US history represented
  - History of Atlanta? South? Civil War? Oakland?

- Consider context of experience
  - King District, school tours, families, tourists, ...
Recent Projects

- Edutainment for kids
  - The Trial of General Sherman
    - Kids divided into defense and prosecution, “find” witnesses in cemetery, watch trial unfold
  - Best all-time Mayor of Atlanta
    - Formwalt (1st), Calhoun (Civil War), Woodward (1900’s), Jackson (1st Black)

- Fun, fact-based tour retold by occupants
  - The Story of Andrew’s Raiders
    - Travel across cemetery, finish at plaque of hanging
Recent Projects

- **Eras of the Cemetery**
  - Juxtapose historic time with areas of cemetery
  - Dense, layered, info-centric: combine stories of occupants with their place in history of the South

- **Musical Eras of Oakland**
  - Enhance visit with audio representing culture of area and time-period of people buried there

- **Fictions**
  - Ghost wife of missing fictional person, visit ghosts who knew him, incidentally learn history
  - Love story of slave and Union soldier
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The importance of place

- Experience *must* integrate with the physical place
  - Otherwise, why AR?
- Leverage/enhance *aura*
  - The shared personal, cultural, historical content of the place
  - Leverage aura by integrating with the place
  - Enhance aura by increasing knowledge of the place
Interactivity

- Passive vs. active experiences
  - Need more than just “location-triggered media”
- Cannot create true interactivity, so
  - Sense (location, view direction, sound, ...)
    - Not language, gaze, ...
  - Aggregate sensed information, infer activity
    - NOT attention, intent, ...
  - Leverage plausible stories that justify limits
    - e.g., ghosts can sense you, can’t hear you
- Give participant sense of control
Drama vs. Documentary, Fact vs. Fiction

- Historic content is rich and compelling
- How best to leverage *in-situ* experience?
  - Relate to objects, events, people
  - Fact ("recreate") or fiction ("leverage")
- In our experience with AR projects, fiction has not worked as well as fact
  - Relationship to space (cemetery) is weak
  - Does not leverage *aura*
- Place feels like a set, rather than a space
Augmented reality enables in-situ media-rich experiences that keep people focused on the physical space.

Technology is “almost” there:
- Currently expensive, bulky, fragile
- DART attempts to make it accessible

Immersive dramatic experiences can leverage “aura” of physical space.
Further Information

For more information, see my research lab web pages
www.cc.gatech.edu/ael

For more information on DART, see
www.gvu.gatech.edu/dart

Or, contact me directly at
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