



## EMBEDDED THEATER

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### Abstract

Embedded Theater is a system for creating immersive narrative experiences where location is an actor. It is the result of an intensive research and design project addressing how interactive narrative can be successfully realized through mobile technology. The result is research that explores the possibilities offered by location based narrative, and a presentation of the findings in the form of a new narrative system, Embedded Theater, which has developed striking new techniques for the creation of immersive narrative experiences through small mobile information devices.

The research began with the theoretical idea that narrative experience is the internal mental structure through which we understand and make meaning out of the world. Stories offer us a way to experience multiple realities and views of the world. This hypothesis proposes that a media that offers the possibility to experience multiple narratives in cultural and geographic locations through the world will have the potential to create deeply resonant new perspectives and emotionally powerful experiences. Truly location based narrative has been, until now, very difficult to achieve, but with the advent and convergence of mobile, location-aware technology and portable media forms, this experience is now becoming a real possibility. The resulting experiences, if properly designed, will be powerful and intense new media that will augment the reality around us with interactivity and location-sensitive narrative.

How immersion, or "the suspension of disbelief", is and will be achieved and maintained in this new emerging media form is the central goal of the Embedded Theater research. Through the Embedded Theater system a person, wearing an unobtrusive garment that provides location based sound and video, becomes a participant in a context-specific story that evolves based on their position, movement, and choices. The system uses a breakthrough user-narrative interface technique called Directional Audio for creating immersive audio landscapes, providing stereo and directional navigational and narrative cues for the participant.

The embedded Theatre system is composed of a garment containing a mobile device (like a PDA or cell phone), and headphones with an attached digital compass. Through Wi-Fi triangulation the system understands the participants location in the environment, and the compass understands the direction that the participant is looking. Using these two data sources in combination it is possible to create a fictional audio landscape, in three-dimensions, that corresponds exactly to real world objects and locations. For example, as a participant walks to the right of a statue, they may hear the statue whispering in their left ear, turning to look at the statue, the sound is now in front of them. Or the participant could hear a conversation in the street between two people



that took place three hundred years ago. As the participant moves through the environment, they can pursue one path or avoid another. The path they take and the places they explore can actively affect the course of the narrative, so that each experience of the piece is different for different individuals, and multiple uses allow the possibility to explore deeper into stories in ways that is not possible with traditional forms of narrative.

The Embedded Theater system has been tested with users and is planned for production and use in major public events in the coming months. As a true narrative media, Embedded Theater is a system that can tell a vast variety of stories. Applications include the exploration of historic locations throughout the world, dramatic visits to pieces of architecture, the exploration of fictional entertainment set in unusual places. The system, including interface innovations, device design and software is currently Patent Pending.



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