# Artifacts of the Presence Era: Visualizing Presence for Posterity

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## Abstract

We present *Artifacts of the Presence Era*, an art installation that uses a geological metaphor to create an impressionistic visualization of the evolving history in a museum's gallery. The piece captures people's presence in the galleries: the images and sounds of visitors as they move through the museum. People's rhythms and activities in this public space become the accumulating layers in a growing landscape of past events. We designed the piece so that visitors could move through the layers of the history, behaving like archaeologists, "excavating" the traces left in the visualization to get a sense of how the space had been used over time.

## 1   Introduction

In the fall of 2002, Boston's Institute of Contemporary Art (ICA) announced the design of their new building. To celebrate the beginnings of this new space, the curator asked us to create an art piece that would function as an evocative souvenir of their current building. Our concept was to document, in an artistic and evocative way, how the building was used by its patrons on an everyday basis. The resulting installation was inspired by the geological layers in sedimentary rocks, specifically their function as record keepers as they accumulate and morph over time.

This artistic approach to visualizing large data sets places our piece in a growing body of digitally based work that invites people to more deeply consider the temporal patterns and aesthetic beauty present in the data that are around us [COOPER 2003] [SALAVON 2000] [VIÉGAS 2004].

## 2   Exposition

*Artifacts of the Presence Era* is an interactive video installation. Viewers see a continually growing and changing geological cross-section of photographic layers (see Fig. 1). They can navigate the stack of layers, going forward and backward in time, like archaeologists peeking into the past.

The "geology" is created from video images taken in the gallery, subject to algorithmic forces derived from the sound and light in the space. The data in each layer of the visualization came from a camera that continuously captured video in the lobby of the museum and a microphone that captured ambient noise. Every five minutes, a new layer was created from an image taken during that period. The color and shade of the layer came from the image and its shape was determined by the amplitude of the sound in the museum, with higher values at points where there was more noise in the galleries. The algorithm for choosing the image emphasized moments when activity in the gallery was greatest. When a new layer was added to the top of the history stack it caused older (bottom) layers to become more compressed. As old layers became highly compressed they started merging and morphing, much like the compression process of natural sedimentary stones.

By using video footage as input for the piece and letting only a few video frames survive as artifacts in our historical landscape, we were able to craft an aesthetic object that compactly encapsulated
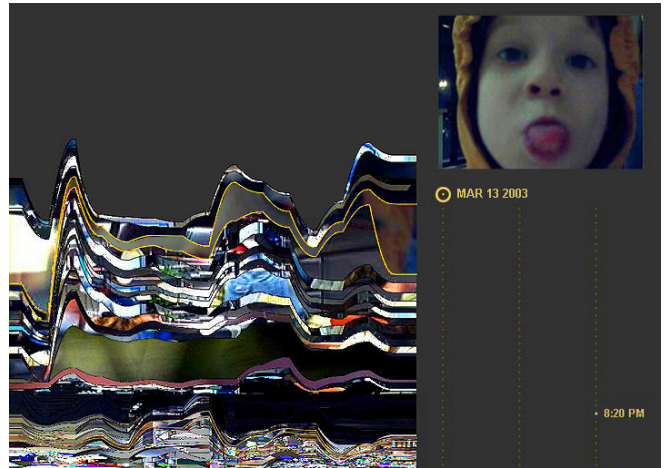


**Figure 1. Growing stack of layers on the left. Within the stack, the currently selected layer is highlighted with yellow lines outlining it. On the top right we see the image from the currently selected layer from the stack. Below the image we see indication of the day and time this image was captured. At the bottom of the stack, highly compressed layers appear as thin fields of color that have started to merge.**

the passage of time in the museum. This design decision meant that *Artifacts of the Presence Era* did not necessarily retain the most interesting data – and there were many great or poignant moments that it discarded. Its algorithms were meant to be more like the erosion forces that shape the geological record than the carefully calibrated heuristics of a semantically based compression tool. Yet the end result was highly evocative of the museum surroundings; the visualization became an artifact whose aesthetic quality was unique to the time and place where it was created.

The piece also functioned as a record for posterity and this made people want to be part of its history; many kids would dance in front of the camera and make faces at it in the hopes of having their picture taken and transmitted to the history stack. Some adults went so far as to stand in front of the camera for several minutes, sometimes waving their arms, until their presence was captured in one of the historical layers.

The resulting accumulation of traces became a visually appealing pattern that had meaning if you knew how to look at it. In constructing a piece that allowed visitors to look back at past moments, we created an expressive visualization that gave people a sense of how the space had been used over time.

## References

COOPER, R. AND ÄNGESLEVÄ. 2003 *Last*. Interactive Art: Honorary Mention. Prixars Electronica, CyberArts.

SALAVON, J. 2000 *The Top Grossing Film of All Time, 1 x 1*. http://www.salavon.com/TGFAT/Titanic.shtml

VIÉGAS, F., BOYD, D., NGUYEN, D, POTTER, J., DONATH, J. 2004 *Digital Artifacts for Remembering and Storytelling: PostHistory and Social Network Fragments*. Proceedings of HICSS 37.