

Graphics and Depth Tracking: Interactive Media

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Introduction and Discussion

The goal of this project was to create a computer aided interactive architectural work that would bring new life to an empty space. Within the library there was a unique task of engaging both the collection of literature and the visitors. The original project idea was based off of Vanderbilt's WordsWorth. This work engaged the public by emerging them in a cloud of words from the library's collection. These type of works are becoming more common in libraries as the purpose of a library changes. In the past libraries were to give the public easy access to literature, however with the internet and online databases, the use of libraries' physical collections have decreased significantly. Libraries have become social centers and on many campuses, study halls. As many libraries switch to electronic collections, opportunities open to creatively allow people to interact with the books.



Middleton Library, LSU, Baton Rouge



WordsWorth Exhibition, Vanderbilt, Nashville

Identifying and interacting with the public in the space at LSU's Library presented a unique opportunity: how can the work tie into the rich culture and land of Louisiana? Architectural installations such as grid shell and kinetic art pieces were the original ideas, containing aspects of Louisiana's nature such as Spanish moss. To save space and provide high quality graphics much investigation was made into off board graphics. In the end, however, the environment would not include the offsite K2 computer as it had trouble connecting the graphics cards to virtual machines.

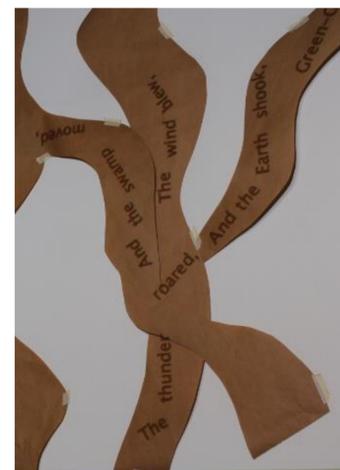


Methods and Results

Infrared depth tracking of humanoids, became the computer focus, in order to output onto a 3D surface depending on human interaction. This 3D surface will follow the theme of Sci-Fi/Southern Gothic and the idea of past and future ghosts.



On screens and cloth with the past and present routes of the Mississippi River, text was displayed using a high definition projector. The location of the visitor was determined using a Kinect. The artwork presents various possibilities of sentences starting with a Southern Gothic base and progressing towards Sci-Fi. The sentences are generated, phrase by phrase, along the river paths. After the person has passed by the first phrase it is removed through



a ripple affect using an ellipse function. The phrase will reappear if the person comes into range again. This alludes to the phasing out of the past through time. It also allows people to continue to read as they move through the work. The code was done in Processing, a java based abstraction, using the Kinect PV2 library and following from examples by Thomas Sanchez Lengeling.

```
//outputs Kinect depth in=mage and gets the //color of the center pixel
image(kinect.getDepthImage(), 0, 0, 1024, 848);
pixelColor = get(512,424);
...
//Outputs based on the depth found by pixel //color
if(pixelColor < -16000000){
  //first stream
  pushMatrix();
  translate(700, 862);
  rotate((11*PI)/6);
  text("The ", 0, 0);
  popMatrix();
...
//ripples around first words at given time
if (currentmill < millis()-1000){
  stroke(0);
  fill(0,0,200,191);
  ellipse(780,861,100,100);
} //end if
if (currentmill < millis()-2000){
  fill(0,0,200);
  ellipse(780,861,150,150);
...

```

What's Next

As this project continues there are things that need to be improved and things that can be added. The ripple effect, although it works, is quite crude. Using pre-existing examples of similar effects will improve the experience. Also we sill implement a Markov generator to use pre-existing literature to create the sentences.

