

Version 1.0

## **Site Specific Art Proposal: Courtyard of Kohn Hall, UC Santa Barbara MAT 254: Arts & Engineering/Science Research**

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### **Introduction**

This site specific art project seeks to implement a temporary art installation on campus which explores new meanings of 3D space by creating virtual 3D sculpture, which considers human beings as essential elements in 3D environment. The initial research and drafted designs have been completed on the subject of this project. And this report serves as a proposal to install an completed art project in the courtyard of the Kohn Hall at UC Santa Barbara for a period of time in the near future.

### **Objectives**

The main objectives of this art project are as follows: (1) to provide opportunity for the artist to study and think the difference between art and engineering in terms of research methodologies, (2) to utilize the courtyard of Kohn Hall at UC Santa Barbara as a primary case study to redefine the relationship between individuals and three dimensional environment.

The overarching goal is to create and install a virtual 3D sculpture generating installation in the courtyard of Kohn Hall at UC Santa Barbara. This installation will serve to inspire our campus and community to think about people's role in a 3D space.

### **Motivations for Use of Courtyard of Kohn Hall**

The Kohn Hall received the American Institute of Architects' highest honor — the Gold Medal, and is named for the institute's founding director and Nobel Laureate, Walter Kohn. Hence, the courtyard of the Kohn Hall is a focal point of the Physics/Engineering and UC Santa Barbara's campus as a whole. Interestingly, as a great place for scientists, the Kohn Hall contains many art pieces all over the building. (Giving some examples) However, the courtyard of the hall is still waiting to be filled with an artwork which can fit well with the environment.

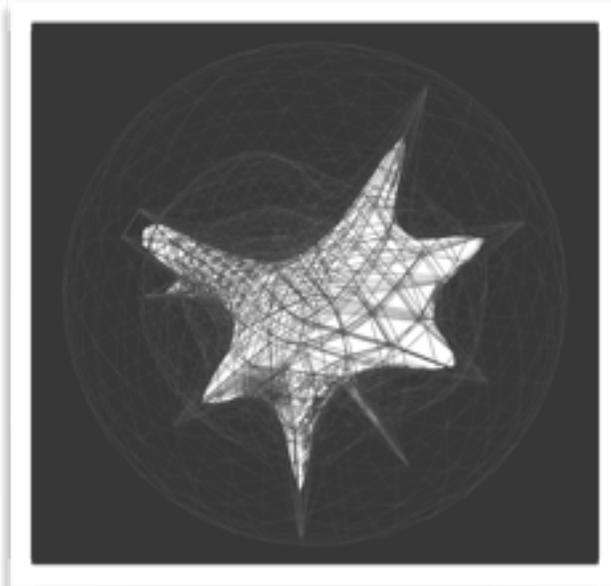
### **Description of Art and Installation**

The idea of the project is exploring and redefining the new relationship between individuals and three dimensional environment as the space encounters lots of people everyday and each individual is different to the space in terms of position or duration, but the interactions between people and environment are seldom noticed and discussed.

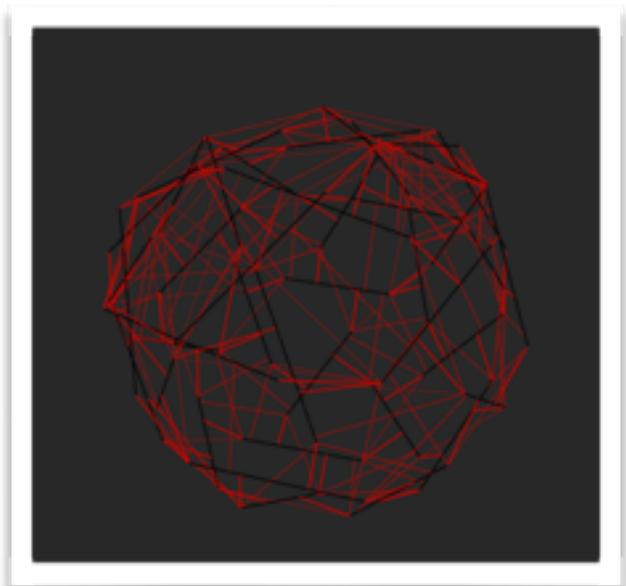
Basically, the installation of the project contains one or several TPFZ (Tilt-Pan-Focus-Zoom) cameras to record human activities in the space, and one or several HD LED screens to display 3D virtual sculpture generated according the data collected by the camera. An video tracking algorithm will be applied to the camera to collect data of people who enter the space. To be more specific, the data include each individual's 3D position and orientation, walking path, and

duration in the space. Since the camera can only track one person at a time, the algorithm will be designed to seek and track another person only after the first person leave the space.

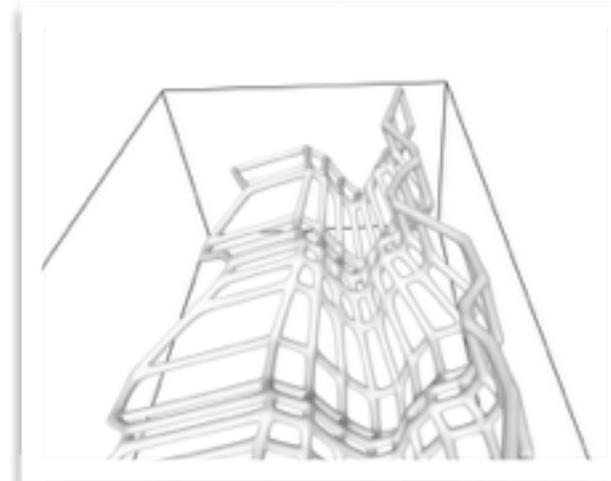
In terms of the virtual 3D sculpture, the data provide many spatial forms for the sculpture, such as collapse, deconstruct, nurbs grid, spray nozzle, tetra mass, twinlso and voronoi (demos are provided below):



Collapse



Deconstruct



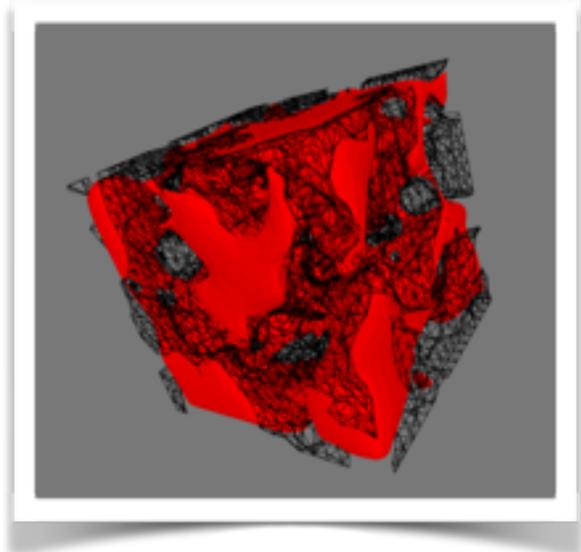
Nurbs Grid



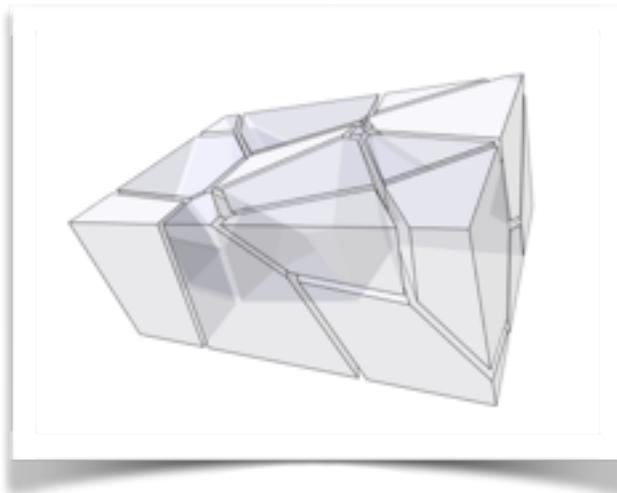
Spary Nozzle



Tetra Mass



TwinIso



Voronoi

All the models will be constantly growing or morphing based on the live data captured by the camera and processed by the algorithm.

**Logistic?**

**Conclusions**

**Contact Information**

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