

Interactive Computing 과 Entertainment

BLUESIDE

엔진팀

신효종

자기소개

목차

- HCI란?
- 어포던스
- Sketch Interface (2D Drawing)
- Sketch Interface (3D Model)
- Information Visualization
- Visual Programming
- Intuitive Control
- 그외 흥미로운 인터페이스
- Applications for Entertainment

HCI란 무엇인가?

- Human Computer Interaction
- 인간과 컴퓨터를 다루는 광범위한 학문

UI 와 Entertainment

- 과도기적인 젊은 학문
- 아직도 컴퓨터는 어렵다는 인식
- 기계중심적인 발상에서 인간중심으로 전환
- 직관적이고 심플한 조작
- 게임을 포함한 엔터테인먼트와의 공통분모

UI?

- 게임에서 UI하면 떠오르는것?

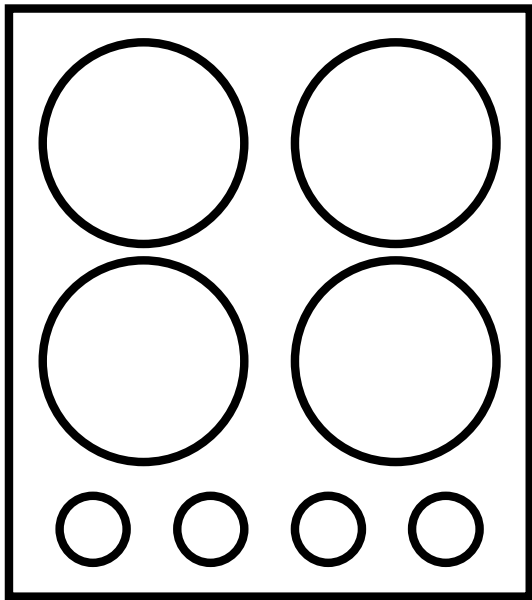


어포던스(Affordance)

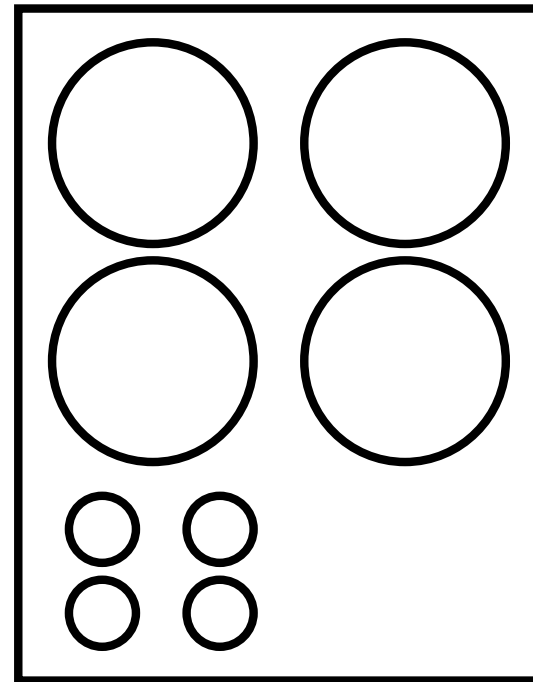
- 사용법을 암시하는 특징
 - 슬롯 = 무언가를 끼워넣는다
 - 노브 = 돌린다
 - 끈 = 당긴다
 - 버튼 = 누른다
-
- 어포던스를 잘 이용하면 설명이 필요없게 되어 실수가 줄어든다

어포던스

- 자연스러운 연관
- 가스렌지의 예



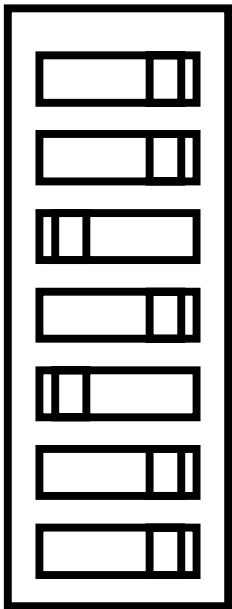
알기어려움



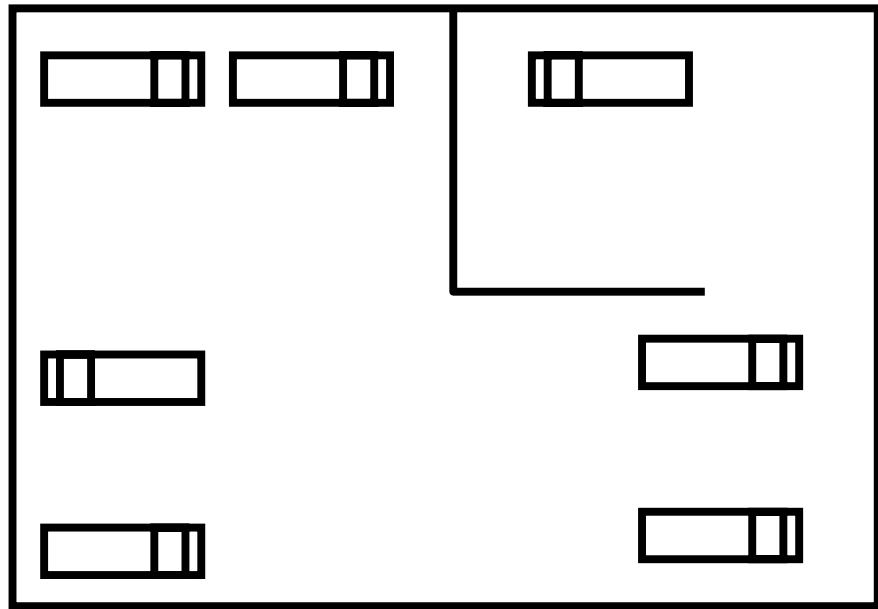
알기쉬움

어포던스

- 조명 스위치의 예



알기어려움



알기쉬움

어포던스

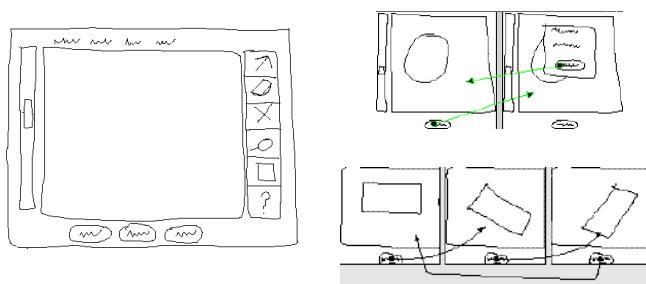
- 컴퓨터와의 인터랙션에서의 이용
- 실생활에서의 경험을 컴퓨터로 가져오자!
- 그중에서 엔터테인먼트에 응용될 수 있는 연구들을 소개

Sketch Interface

2D Drawing

-

SILK (UC Berkley)



GUI Prototyping
손으로 그린 Widget으로 조작가능

Denim

[Berkley, Lin 2003]



Web site design
손으로 그린 페이지를 브라우징 가능

Music Notepad (Brown Univ.)

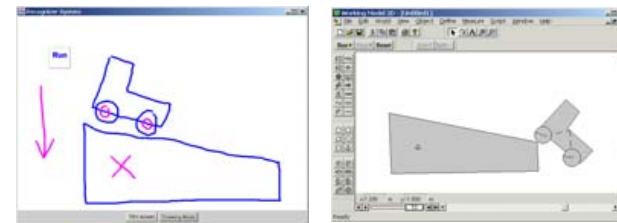


- Music score editing based on gestures

[.musicnotepad.mpg](#)

ASSIST

(MIT Media Lab.)



그림을 그리면 물리 시뮬레이션이 적용된다

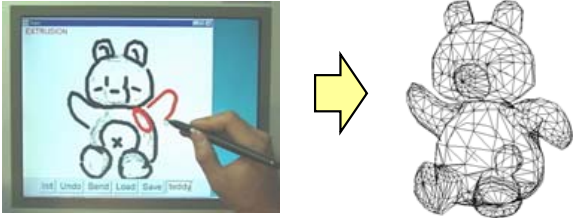
[.assist.wmv](#)

Sketch Interface 3D Model

[test.html](#)

Teddy

[Igarashi 99]



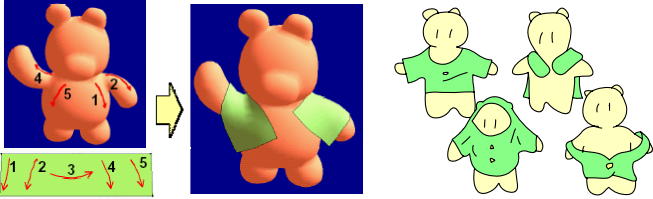
The image shows a hand using a stylus to draw a simple bear on a tablet. The tablet screen displays the drawing and some software interface elements like 'EXTRUSION' and 'Undo', 'Save', 'Load', 'Save', 'Undo'. A yellow arrow points from the sketch to a 3D wireframe model of the bear.

- Freeform models from sketching.
- “Sketches represent some rotund shapes”

[sweater.bat](#)

Clothing Manipulation

[Igarashi 03]



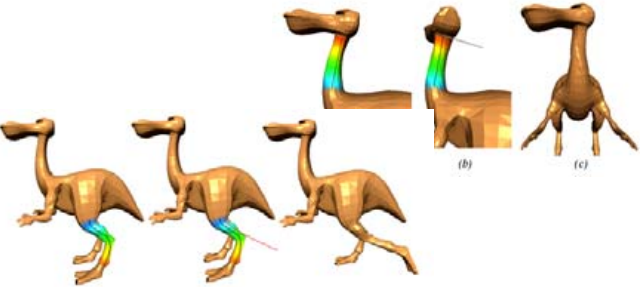
The image shows a bear with red arrows and numbers (1-5) indicating sketching marks on its body and clothing. A yellow arrow points to a 3D model of the bear wearing a green sweater. To the right, there are several other 3D models of bears wearing different styles of clothing.

- The user sketches marks on the body and clothing
- “The clothing covers the body surface”

[sketching_mesh_deformations.mov](#)

Sketching Skeleton

[Kho 05]




The image shows a dinosaur skeleton with yellow arrows and numbers (1-5) indicating sketching marks. A yellow arrow points to a 3D model of the dinosaur with a colorful, deformed skeleton. The model is shown in three different poses, labeled (b) and (c).

Y. Kho and M. Garland. Sketching mesh deformations. Interactive 3D Graphics 2005

[videos#Turquin04.avi](#)

Garment Design

[Turquin 04]

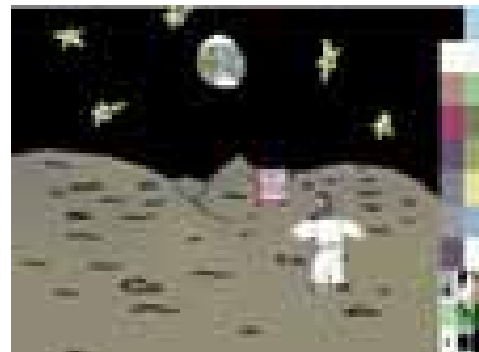
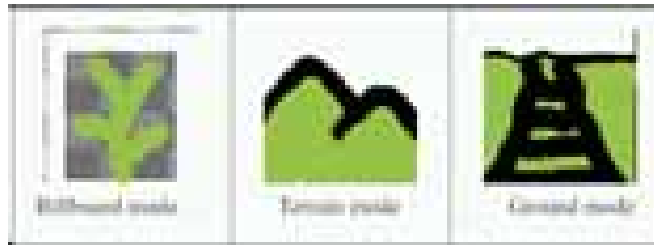
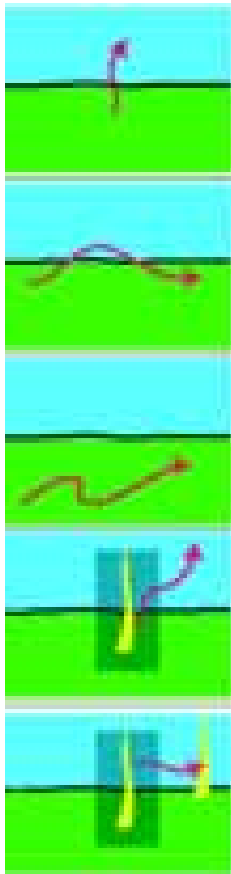


The image shows a woman's outline with yellow arrows and numbers (1-5) indicating sketching marks. A yellow arrow points to a 3D model of the woman wearing a green dress.

- The user sketches the outline of a garment
- “The garment covers the body surface”

Sketching in 3D

Harold [Cohen 2000]



harold.mov

Visual Programming

- Dd

Viscuit [Harada 2003]



Fuzzy Rewriting : 애매한 매칭을 허가한다
가장 현재의 상황에 가까운 룰이 적용된다

Information Visualization

Comic Chat

[Kurlander 1996]

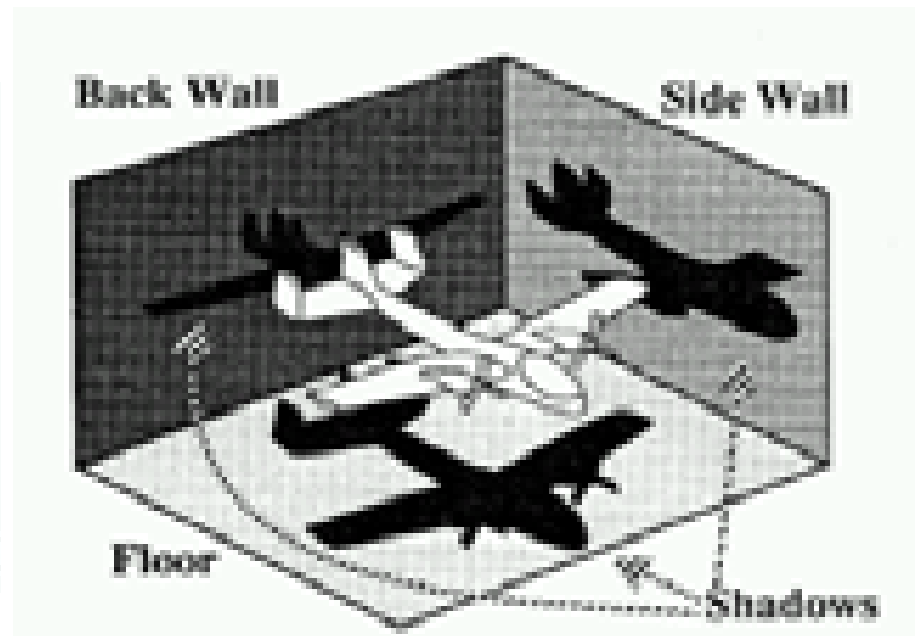
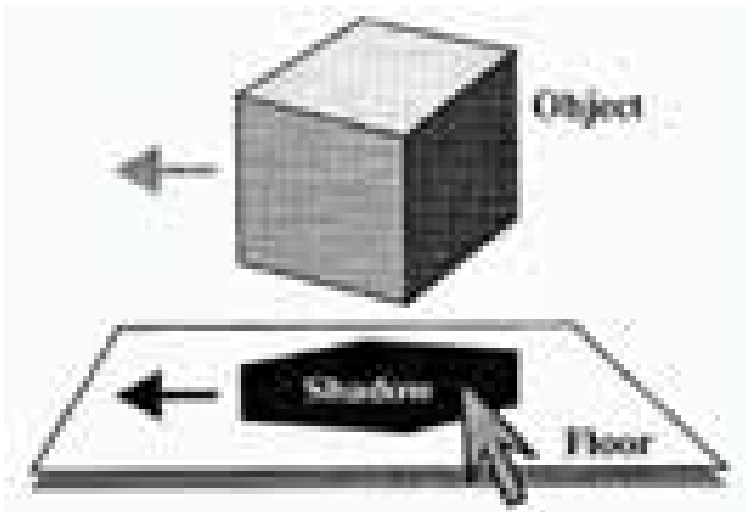


채팅내용을 자동적으로 만화로 표시한다

Intuitive Control

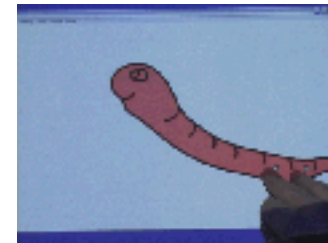
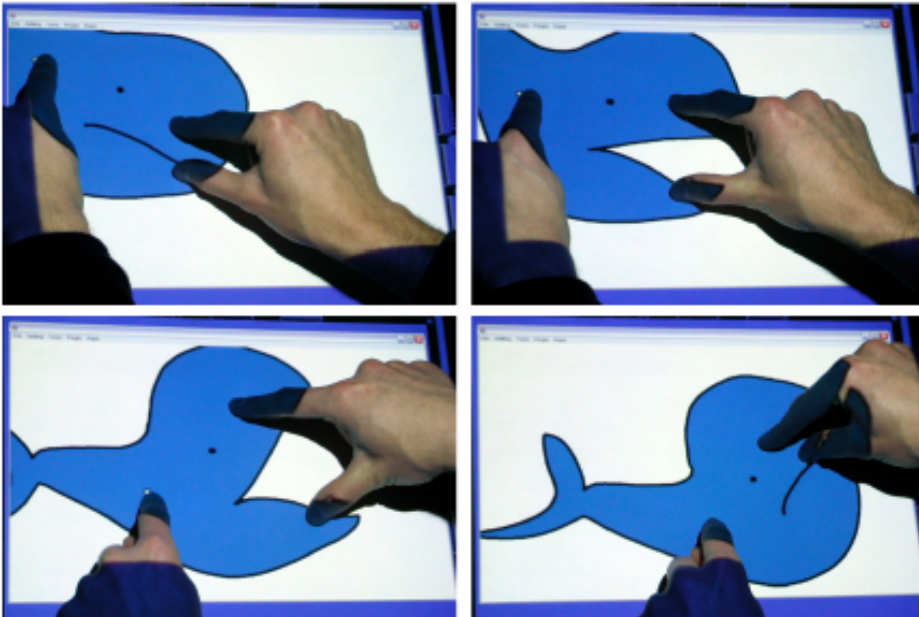
Interactive Shadow

[Herndon 1992]



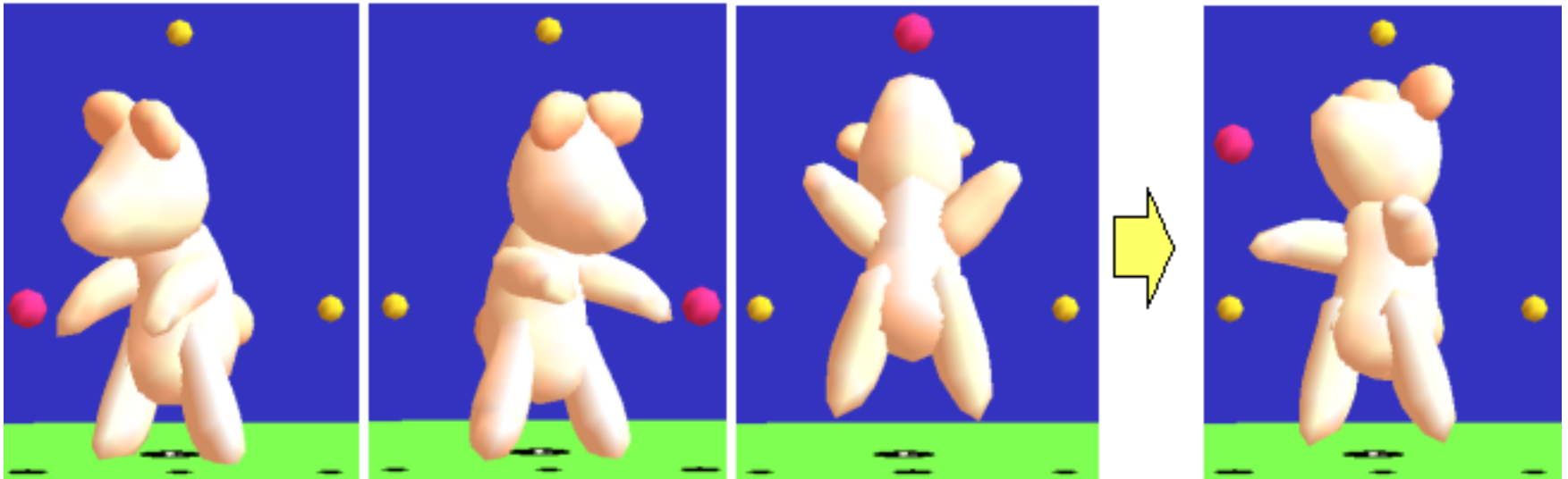
Intuitive Control

- As Rigid As Possible [Igarashi 2005]



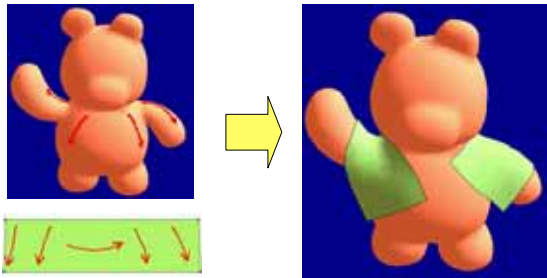
Intuitive Control

- Spatial Keyframing [Igarashi 2005]

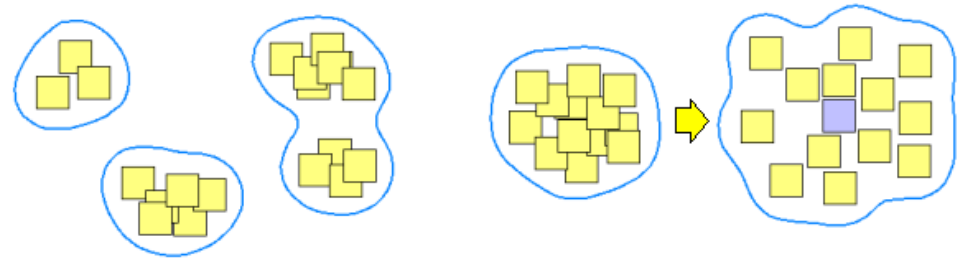


기타

Clothing Manipulation
[Igarashi 2002]



Bubble Clusters
[Watanabe 2007]



Plush-toy Design
[Mori 2007]

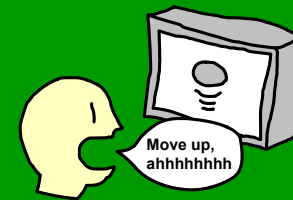


plushie.mpl

UIST 01

**Voice as Sound:
Using Non-verbal Voice Input
for Interactive Control**

**Takeo Igarashi
John F. Hughes
(Brown University)**



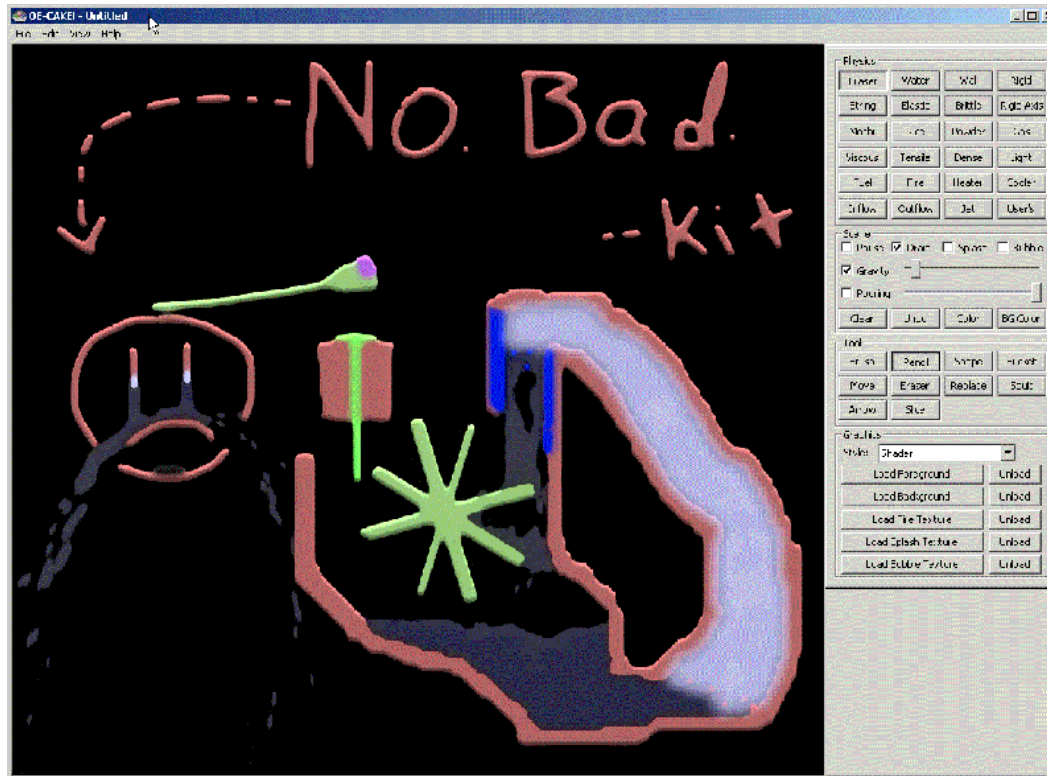
Teddy 응용게임

- 낙서왕국1,2
- 괴수의 섬



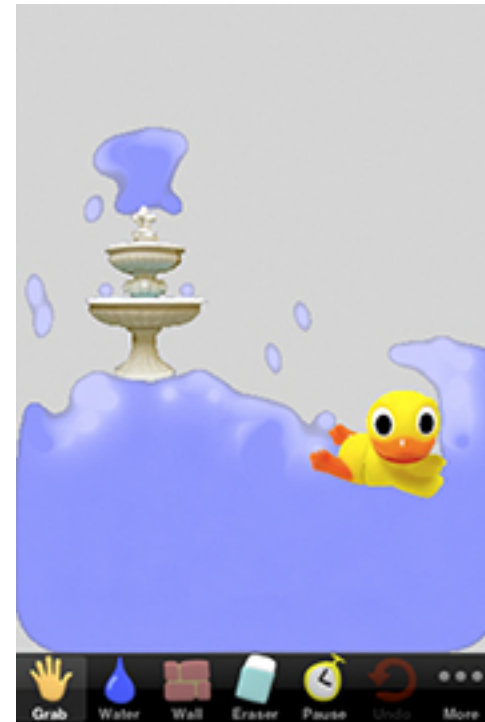
OE-Cake!

- MIT의 ASSIST에 감명을 받음
- Sketch UI와 Physics를 응용



Aqua Forest

- OE-Cake!을 이용한 아이폰용 게임



DANCE ME!

- 아이폰용 어플리케이션
- ARAP와 Texture Synthesis를 이용



유용한 학회

- CHI
- UIST
- Sketch-based Interface (SIGGRAPH병설학회)
- SIGGRAPH

참고문헌