Lifting the Veil: Visualizing Sentient Architecture

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Future Technologies Conference, Vancouver (Canada)
November 29-30, 2017
Outline

- Background: What is Sentient Architecture?
- Example projects:
  - "Lifting the Veil"
  - "Dendrite"
- Demo
- Outlook: I-SIDE
What is Sentient Architecture?
What is Sentient Architecture?

- Intelligent systems
  - Sensors
    - Infrared (IR)
    - Microphone
  - Actuators
    - Kinetic
    - Light
    - Sound
  - Processors

Philip Beesley


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What is Sentient Architecture?

Sensor (IR)
Actuators (light + kinetic)
Diagram of LASG and Information Visualization Lab's long-term evolution of prototyped Living Architecture, accompanied by complex system visualizations, expanding from interiors, to exteriors, to interconnected buildings and environments.
What do we do with this?

Our research domains:
- Data flow
- Structure, dynamics, state
- Educate users through data visualizations
Our Expertise: Macroscopes

Source: https://www.youtube.com/watch?v=Ef3tAxoW9mE
Example project 1: “Lifting the Veil”

- „Sentient Veil“ sculpture in Boston, MA (USA)
- Allow visitors insights
- Artful intelligent system
- Data visualization literacy
Sentient Veil, Isabella Stewart Gardner Museum, Boston, MA (2017)
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Lifting the Veil App Development

Lifting the Veil Virtual
0 sensors triggered

Lifting the Veil Virtual
1 sensor triggered

Lifting the Veil AR
2 sensors triggered

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Example project 2: Dendrite
DEMO TIME!

Meet the Dendrite Desktop Kit
See https://github.com/pbarch/1714-IU-Summer-Camp for code
Dendrite Field Array Schematics

See https://github.com/andreasbueckle/dendrite-field-array for code
OUTLOOK

I-SIDE

Intelligent Systems Integrated Data Ecosystem

This name is work-in-progress.
I-SIDE

Bring data, sensors, actuators together.
I-SIDE

Enhance IoT.
Integrate
Sensors, actuators, smart devices, Amazon Alexa...
I-SIDE

Make it an ecosystem.
And visualize it.
The Team

Philip Beesley
Katy Börner
Matthew Spremuili
Andreas Bueckle

Further collaborators and supporters:
- Living Architecture Systems Group (LASG): Rob Gorbet, Dana Kulic, Adam Francey, Filip Vranes, Reza Nik, Salvador Miranda, Siddhant Chandgadkar
- IU: Christian Mckay, Gregor von Laszewski, Chauncey Frend (Advanced Visualization Lab)
Questions?
References (Excerpt)

Image Sources

All pictures from the one of the following sources unless marked otherwise:

- Sentient Veil, 2017, Isabella Stewart Gardner Museum, Boston, MA. Photography by Andreas Bueckle
- Sentient Chamber, 2016, National Academy of Science, Washington, D.C. Photography by Andreas Bueckle
- Dendrite Schematic Drawings, Philip Beesley Architect Inc., Toronto, ON (Canada)
- Sentient Veil Schematic Drawings, Philip Beesley Architect Inc., Toronto, ON (Canada)
- Andreas Bueckle, XRAY App, Misc.
- Philip Beesley Architect Inc., Misc.
- "https://media.licdn.com/mpr/mpr/shrinknp_200_200/AAEAAQAAAAAAA1_AAAAJDF1MzIzMTthLWlOTmNGhNy04NThtjLWYSN2VhN2FmNnI1MW.jpg" (photo of Matthew Spremulli)