

# **The Everyday Story of Imaginative Time & Space**

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Abstract

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## ABSTRACT

Studies on the future of the Information Age often revolves around a pervasive networking paradigm. [10] These explorations usually position technological innovation as central to the design in building a believable future of digitally enabled environments. For this reason a vast number of designers, architects, and theorists are particularly interested in employing technology in their products and in the infrastructure of the city to deliver a convincing story of the future. These possible yet fictional narratives provoke new conversations amongst professionals in the creative field and enable engineers and scientists to push the boundaries of the modern technology with a new vision. [4]

This paper focuses on the role of design fiction, specifically which depicts the future world we can imagine through the pervasive networking technology. By covering the contexts of “stories of time and fictional space” in a networking environment, we have been conducting a two-year research project seeking ways to imagine, experiment, and create prototypes for the future and alternative presents. The paper reflects on the inquiries, insights, and discoveries of the investigation.

# INTRODUCTION

Today, many people find themselves engaging with streaming data that conveys their everyday lives. Whether we use a GPS navigation system to drive around the city, check email or network online with others via Facebook, Twitter or, Flickr, the way we perceive the world has become clearly and inextricably interlinked with digitized worlds.

Arguably, the boundaries between the tangible and the virtual are becoming progressively blurrier through the advancement of innovative technologies, such as the pervasive networking system or augmented spaces. [6] In reality, we are surrounded and captured by an array of media wherever we go. As each moment of our everyday activities transforms into a flow of digitized information, clearly, the digital platform has become a reflection of our physical world. This transformation makes the digital environment habitable and, therefore, memorable. Now, computers enable us to visit other people's digitized spaces, spaces filled with the imagery and words of the individual's social and personal life. However, current technology does not always portray our true selves: Technology sometimes transforms information, resulting in an illusory or alternate version of the present in the digitized space. In other words, current information technology often fails to tell the whole story. For instance, people only share partial facts about themselves when they upload their personal information to the public using social networking platforms such as Facebook.

Our research purports to reveal not only these untold narratives but also the unexpected and speculative aspects of digital life by using technology as a vehicle for storytelling. This paper describes several projects that show how fictional elements in design can be used to reveal this gap between the real world and the digitized space. Rather than taking the pragmatic approach to future technology, we sought to create new visions and dialogues that highlight the imaginative aspects of the networking environment and rediscover the potential of innovative technology that do not take the obvious route of the commercial marketplace. This approach gave us more freedom in developing new technological scenarios and playfully envisioning the future of mediated environments by applying design thinking.

Our design methods were inspired by the idea that people's cognitive aspects of time and space in the digital universe will drastically change through the revolution of pervasive networked technology. For instance, in our workshop phase, we looked into a vision-driven networking system that allows a world where everything -our minds, time, space, and all objects- is connected together.

# THE EVERYDAY STORY OF IMAGINATIVE TIME & SPACE: DESIGN RESEARCH USING ART & TECHNOLOGY

The “Time Space Story” project is an ongoing, collaborative research project that explores new pathways for creating a speculative playground for the alternative future (presents). The research idea initially arose in 2010 from several MFA degree projects in the Media Design Program at Art Center College of Design. These projects focused specifically on learning how people conceive time, space and the inscription of movements in a future of digitally-enabled environments. This project includes experimentation using data visualizations, data interpretation, multiple sensors and streaming media. (Fig. 1) It also involves applying computation in artistic contexts to create environmental settings for new modes of communication. Lastly, our investigation consists of developing our ideas further by conducting a design research workshop and learning from an interdisciplinary group of people. The goal of the workshop was to provoke intriguing discussions through a hands-on design exercise based on our investigation.

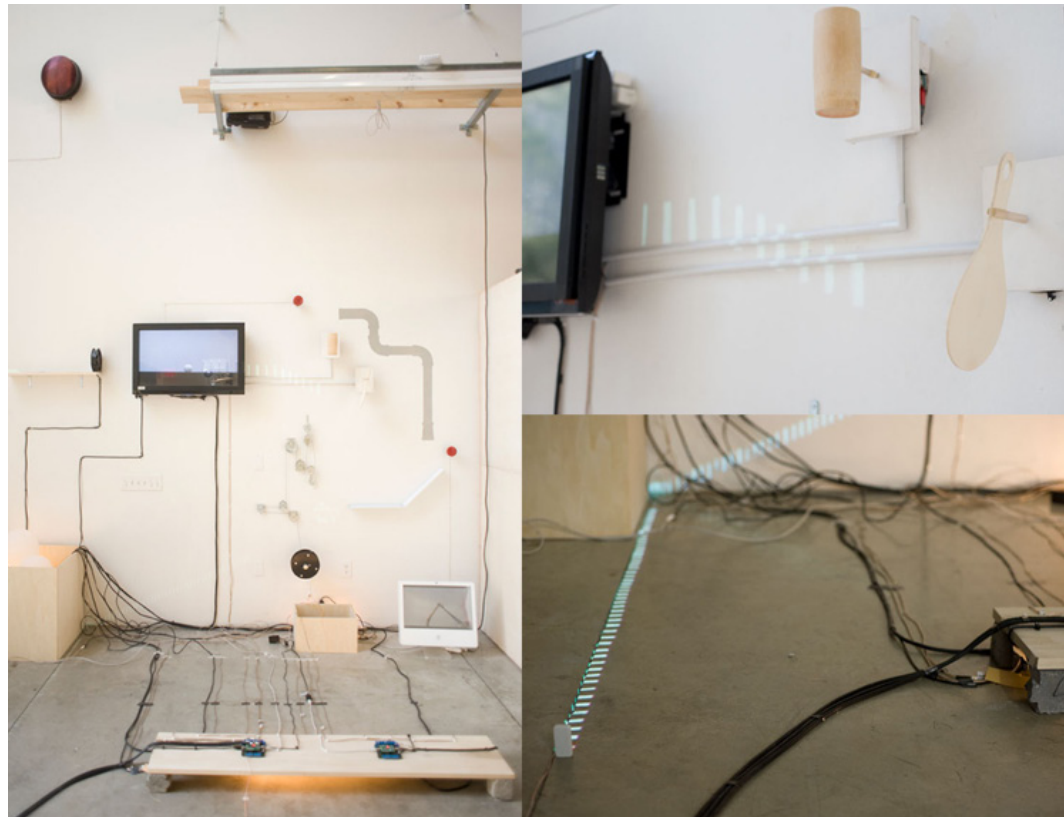


(Figure 1) Building prototype for design research using sensors.

This paper is composed of three main parts. First, we discuss the new meaning of spatial relations in contemporary culture. This section illustrates a case study that applies an architectural environment as a platform for distributed media. Next, we introduce a body of work related to time and space at the intersection of the digitized networking environment and the tangible world. Finally, we discuss how we demonstrated our ideas through a workshop format that shared methods of using prototypes and reflected on the outputs of the participants related to our given research questions.

# 1) Responsive Causality

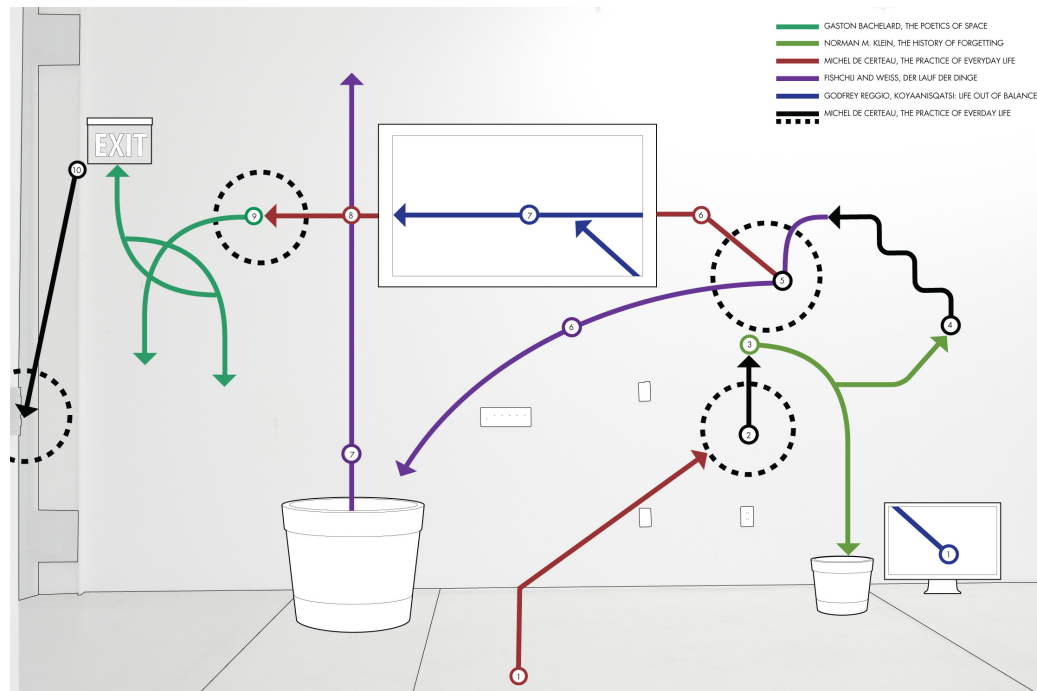
As an illustration of turning architectural environment into an imaginative media platform, we introduced Responsive Causality (Austin S. Lee, 2010). Responsive Causality is an interactive environment displaying physical objects and digital simulations in which chains of events move across the two domains. (Fig. 2) The project explored how our understanding of movement in architectural spaces may change in a future of digitally enabled environments. The goal was to seek ways of communicating the contemporary meaning of a built environment in the technological world. The installation focused on studying the inscription of movement in a built-in environment by pushing the boundaries of conventional spatial practice. [3] Also, the research was intended to reveal how an individual can modify the context of an existing architectural setting through personalized technology. The purpose was to uncover new ways in which technological environments could shift people's sensory awareness of their surroundings and even change aesthetic practices in public or private spaces.



(Figure 2) *Responsive Causality, an interactive environment using hybrid chain reaction.*

The system was created using I/O controllers and design applications which eventually added digital affordance to an existing architectural space. One of the methods involved displaying the entire circuit of both physical objects, including the hardware and digital elements all together. The work consisted of a physical domino, a series of projections, pulleys, videos, LED signs, kinetic robot finger, wires all interacting with micro-controllers, and a metal aircraft hangar door. This system allowed people to open an aircraft hangar door by simply tipping over a single physical domino. All of these components together created a hybrid chain reaction system inside the gallery space. The exposure of the mechanical infrastructure made it very clear how things move in space, just as we may see a crowd of people in a city moving across streets according to traffic signals or other technological elements.

In theory, the intention may seem purposeless since the project neither emphasized technical perfection nor praised the technical achievements of a pervasive computing environment. [6] Instead, this work generated speculative ideas and suggested interesting aspects having to do with the new definition of architecture in today's technological culture. By observing how the interactive environment influenced the occupancy and behavior of viewers, it was possible to obtain a broader understanding of how embedded technology can change people's perception of movements. The focus throughout the research project was to discuss the nature of thought, the nature of communication, and issues of control that are deeply related to today's technology.



(Figure 3) Installation diagram. Design of each section's movements was inspired by historical theories and projects related to architectural settings such as Gaston Bachelard, *The Poetics of Space*(1958) [2], Michel de Certeau, *Practice of Everyday Life*(1980) [3], and Fischli and Weiss, *Der Lauf Der Dinge*(1987) [9]

During the review process, some interesting questions related to the present architectural experiences emerged: (Fig. 3)

- Are the practices in space predefined by designers, architects and engineers?
- Are human beings part of an architectural system?
- Does technology change people's roles: occupier/habitat/creator ?
- Does the ability to use technology empower individuals to change the context of one's surroundings?

In this project, the final installation piece was employed as a commentary that dealt with these questions. In addition, it introduced the idea of simulated causality and new modes of interactive experiences. By applying computation in creative contexts, it was possible to utilize the space as a communication medium. The exploration of space as a platform for distributed media showed the possibility of using personalized technology to influence spatial practice in a unique context and reshape the perception of an architectural environment. [11] However, the installation piece had its limitations in providing a rich interactive experience due to its one-way-directional input/output system. Ideally, for the next step of the research, we would like to develop this project into a mediated spatial system where people's microscopic gestures and behaviors can also influence their architectural surroundings whether it is in a public environment or private space.



## 2) Discoveries In Displacement

Discoveries in Displacement (Yuseung Kim, 2009) is re-imagining and restructuring the familiar world in unfamiliar ways through visual narratives. It challenges the traditional notions of space and time by visualizing what is always there and changing one's perspective of them. It is an integration of the following three consecutive experiments.

Space-Time Transference: Connected Spaces in Civic Scale:

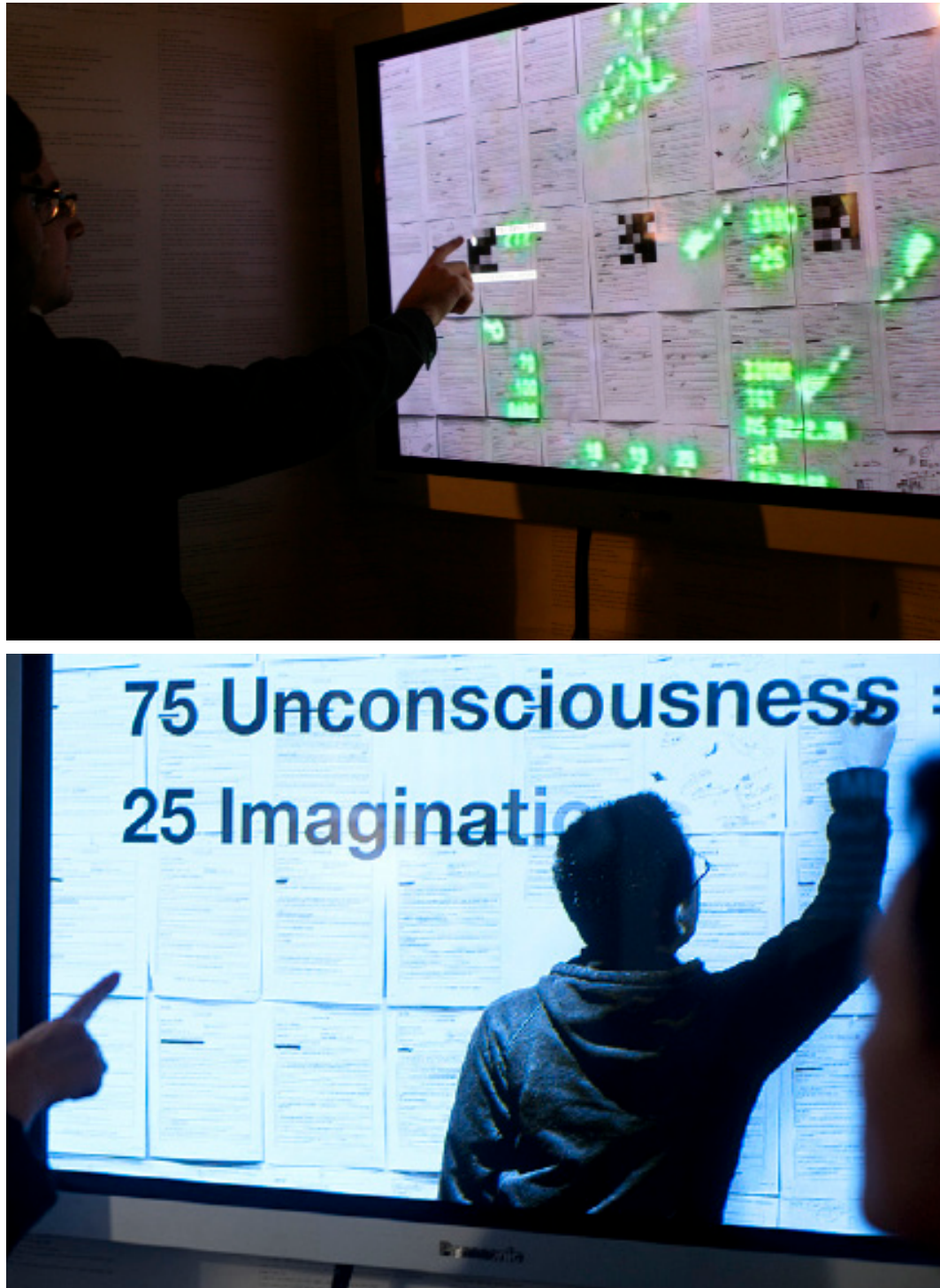
Space-Time Transference demonstrates how streaming-media enables us to perceive our familiar city memories as diverse space-time experience through an imagined multimedia platform. (Fig. 4) By creating customized streaming media and utilizing site-specific infrastructure which exploits location-based media, Space-Time Transference explores the idiosyncratic worlds and creates real-time juxtapositions of real and virtual spaces.



(Figure 4) *Space-Time Transference*, Proposal for a site-specific experience which exploits location-based media

75=25+25+25: Networked Minds:

75=25+25+25 retells the dream stories of people in a provocative screen-based interactive installation. (Fig. 5) Based on design research of dreams, it does not just visualize people's memories, desires, and imaginations in their dreams but demonstrates their inner voices through re-presenting and re-imagining in a metaphoric manner. [1],[5],[7]



(Figure 5) 75=25+25+25, Screen-Based interactive installation.

### Time Travel: Networked Time:

Based on the visualization of our daily travel experiences, the Time Travel project reveals the distortion and absurdity of space and time that we experience every day through people's stories of traveling. [8] It demonstrates variable time flow and connects that experience to specific itineraries and individuals' journeys. For example, re-telling the travel stories at the airport or even just in the airplane provokes our imagination and makes us realize the unnoticed.



(Figure 6) Time Travel, Screen-Based Interactive Installation.

Time Travel is an interactive piece that builds on the familiar experience of Internet travel booking systems. (Fig. 6) By twisting conventional daily life in a whimsical way, it enables people to explore unique worlds in playful, speculative and poetic manners. Like all of Discoveries in Displacement, in this project, Time Travel is not scientific investigation but appropriates some aspects of science and science fiction and then re-presents the familiar in unfamiliar ways, displacing it, re-imagining it. This body of work posits that the real and the imaginary can and do co-exist in very interesting ways.

The final outcome of these projects was presented in public and included an exhibition where people were able to interact with interfaces that communicated the ideas behind the three experiments. Through working prototypes and visualizations, it was possible to create more convincing stories that conveyed the core concept of “Discoveries in Displacement.” This research project applies scientific research method using data generation in the context of visualization design and enabled people to experience a world where the imagination and reality co-exist.

Why is this so important? After all, there already is an interface between viruality and reality and data-driven interactive work. We experience it so fluidly in our media-saturated lives that we can ignore the experience of dislocation that it creates. “Discoveries in Displacement” helps us value this experience, instead of being indifferent to it by installing the system in the real fields.

For the future direction of the work, it would be great if the installation project were visualizing and demonstrating the real-time data of the flight and dreams rather than existing data which were collected from past events. For example, re-telling travel stories at the airport or even just in the airplane might enable us to provoke our imagination and realize the unnoticed. Sensitive to the simultaneity of real and imagined, we can see the unseen.

### 3) The Workshop: A Research Through Public Engagement

The third phase of our project involved engaging with the public to generate interesting ideas about the future of mediated environments. Using our previous studies, we chose to conduct a design research at the 2010 Swiss Design Network Conference in Basel, Switzerland. The workshop proposal, “The Everyday Story of Imaginative Time and Space,” focused on finding new ways to see the future of pervasive networking technology, a future where technology enables every object, different cities, countries, and even human minds to be connected in multiple ways without the limitations of time and space. The goal was to discover ways of looking at daily life experiences in digitally-enabled environments through technology and designerly thinking. The workshop covered the contexts of “Future & Fiction” by introducing design research as a body of work based on fictional time and space. Our research introduced two key themes: Stories of Time and Fictional Space. While presenting our body of work, which explored relationships between time, space and technology, the following points were addressed:

- Description of spatial practice in modern digital life.
- Interactive environments as a design research tool.
- Ubiquitous moving images beyond time and space.



(Figure 7) 2010 SDN Conference Workshop Documentation. Photo credit: Ronny Jaeger.

Given the introduction to idiosyncratic perception about time and space of the networked media, participants created compelling visions of an embedded digital world through active discussions and visual narratives.

As an exercise, we first had every individual sketch out their design proposals related to the topic. We asked what they thought of a fictional world where networking technology is so advanced that every element in the universe could be interrelated digitally. The participants were asked to brainstorm/ideate outside of the box through writing down or sketching out design proposals in order to create a significant impact in this type of universe. The participants were then separated into three groups, each consisting of at least five people, where they collaborated to develop their storyboards and design mock-ups based on the given research questions. (*Fig. 7*)

One of the interesting results from all of the groups was that people were mainly interested in the field of research where human minds were interlinked through the networking technology. Another central idea behind the participants' work on future products was that they focused more on designing a system rather than the devices themselves. In fact, the imaginary future artifacts they introduced tended to have no form or dynamic morphing features. For example, one group proposed a chewable device that allowed users to share the information in their minds with others by allowing others to chew the same device which worked similar to an external flash drive or Bluetooth. Another group introduced a "mind patch" that you attach to your hand. This object was powered by body heat and was designed to create filters when people were networking with other users or everyday objects which were connected to their minds. Although there was some ambiguity in many of the design proposals, we found this exercise extremely helpful for sharing radical visions and dialogues so as to push the boundaries of our research.

# CONCLUSION

In this digital age, many believe that people have a better understanding of technology, however, this does not necessarily imply that we always use technology in meaningful ways. We believe that with different approaches using designerly thinking and imagination, people with little or no technological backgrounds can also tinker with existing technologies to define their own meaning of technology. Through our research, we demonstrated how people in the creative field such as designers and artists can introduce ways of using technology both as an expressive medium and an instrument to generate platforms for engaging discussions about possible future environments.

By bringing insights from the design research workshop and our projects, we have been able to project the co-existence of reality and imagination. Our explorations aimed to engage more audiences in learning new ways of experiencing the environment as a visual communication medium; the research addressed emerging contents related to networking technology with idiosyncratic visions. Studies on these illusions and the invisible insights of the technological world were valuable assets for the design inquiry, concentrating on experimenting, prototyping and imagining new proposals for a meaningful future. These exercises broadened our visions and allowed us to find new pathways for future research.

One of the further directions we would like to take is to collaborate with scientists and other design researchers. We hope that our work provokes new conversations amongst designers, architects and researchers as well as between artists and scientists, all of whom are involved in the area of future studies. We believe that there are much richer and more interesting aspects to this field: the revelation of hidden realms or telling the everyday stories in unique ways. Our belief is that this ongoing research will point to a rich area of investigation that will reveal the invisible insights of the modern digital world and help us understand the relationship between humans, technology, and our environment in a playful and meaningful way.

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