

# The Fake.Space Experience - Exploring New Spaces

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*Fake.space is an elective CAAD course in which teachers and students form an online community. It is a Web-based communication environment for the exchange of ideas on the concept of space. Fake.space is also a narrative structure consisting of threads of nodes created by students. These nodes present different aspects of space.*

*Fake.space represents our current generation of teaching environments. In this paper we describe and analyse its latest incarnation and discuss our aims and thoughts for further development. We believe that fake.space reflects on a future where online environments entice the students in a playful way to work with computers and CAD and consider the role of networked environments in architectural space.*

**Keywords:** *online community, learning environment, identity, transparency, visualisation*

## Introduction

In the development of information technology Henri van Praag distinguishes five stages: a formal, a scientific, a technical, a social and a cultural stage. At the moment, we are in the cultural phase: information technology is increasingly becoming a culture-determining phenomenon, and computers are no longer used only for calculations and data storage, but also for cultural expression and reflection (Rijken, 1998:19). Only in the last two decades, the computer has slowly started gaining recognition as a communicative, artistic and literary medium.

The World Wide Web plays an important role in education, because it represents a convergence of information access methodologies that facilitate the use of technology for educational purposes. At the chair for Architecture and CAAD at the Swiss Federal Institute of Technology Zurich, we have adopted the

World Wide Web early on as a teaching environment for our courses.

The Web offers many degrees of freedom for publishing and sharing multimedia data. In the past we have made use of these advantages by establishing students' homepages as a place to present their work. We also developed means - webpages generated by scripts - to create an overview of the students' work. The fake.space experiment results from these experiences. We wanted to further explore the Web's potentials as a medium for the communication, representation, and expression of architectural ideas and to experiment with new, more sophisticated teaching environments by developing mechanisms for a more effective use of this powerful medium.

## **Fake Space: an educational experience**

Fake.space is an elective CAAD course taken by 120 architecture students from the upper semesters. Previous computer experience is not required. The students, teachers, and to some extent guests form the fake.space online community for the duration of the course. Fake.space is a narrative structure consisting of threads of nodes. These nodes are created by the community and present different aspects of space - virtual, simulated, imaginary, faked space.

### **Space**

Space has been an issue in general philosophy and natural sciences long before it entered the architectural discourse at the end of the nineteenth century. Different social and moral, but also scientific changes, necessitated at that time an increasing interest from the architect in theoretical issues (van de Ven, 1978).

The technical concept of space has its origin in mathematics and computer science. Scientists use space as a metaphor to describe complex systems and networks, e.g., information spaces.

There is a bi-directional influence between the design approaches of architectural and information space.

An information space's structure may be experienced as an environment where "here" and "there" are distinguished and the "spaces" in the structure have different connections (Rijken, 1998:55). The conceptualisation and visualisation of an information space will be influenced by the organisational principles known to architecture. Concerns that were previously limited to our built environment will become more and more familiar inside cyberspace: How are flows of usage organised? What defines a sense of familiarity and place? What are useful systems of navigation? (West, 1998:44)

On the other hand, within the architectural discipline, the impact of the computer on our very

conception of what constitutes architecture and architectural space also needs to be investigated.

At the Vienna Architecture Conference in 1992, Coop Himmelblau remarked that "General interest in tangible, three dimensional architectural creations is steadily decreasing... Virtual space is becoming the sphere of activity for the life of the mind" (Lunenfeld, 1999:10). Fake.space is the sphere of activity for the life of mind of the community, it is the shared space, the common ground and the symbolic basis for the expression and communication of ideas among the members of the community.

### **Environment**

Technically, fake.space is a custom web-interface to a relational database. There are no static pages in fake.space, all views of the database are assembled by scripts, on the fly.

### **Node System**

A node in fake.space is an entry into the system and it contains one entity. A node can be of one of two types: a pipe or a tank. A pipe contains text, and a tank contains graphical information. This graphical information can be an image, an animation, a 3D model, a sound, a rendering, or a combination of these. The exercises that the students do in this course are also considered as node types, and are mainly used for classification purposes.

The project for the exercises is the student's own room.

- node1 - plan: The students create a plan of their room.
- node2 - view: They make a 3D model of this room and create inside and outside views.
- node3 - circulation: They form groups of at most four people and connect their rooms creating a public circulation space.
- node4 - animation: They experience space through motion by making an animation through it. In this animation, not only the viewer moves in space, but the objects that

make up the space may also move and transform in order to continuously redefine the space.

- node5 - light: They define specific viewpoints and render the views to experiment with light simulation.
- node6 - movie: They make a frame-by-frame animation through their model, which helps them to grasp the difference between a real-time animation and a frame-by-frame animation.
- node7 - tour: With a special tour tool developed as part of the fake.space interface, the students put together a fake.space tour, connecting interesting nodes, thus creating a second layer of connections on top of the existing node structure. This way, a second spatial structure, resulting from the subjective interpretation of the original one is established.

The fake.space node system initially consists of eight nodes. These eight nodes form an inner circle in the tree structure we call the node system. In the center of this system is the fake.space connector. The eight nodes attached directly to the connector form the starting points for further growth. These eight initial nodes represent eight literary texts that discuss space in different contexts. We provide these texts to the students in the form of a reader.

The system grows as nodes are added to it. The mechanism of adding a node is similar to writing an e-mail message. A form is filled out and the content of the node is uploaded to the server. In this way, it is possible to post nodes from any Internet client.

A new node is always attached to an existing one. This neighborhood relationship specifies the context within which a node is created. Different motivations may exist for adding a new node: continuing an idea, objecting to it, or creating alternatives are all possibilities.

Adding a node is reacting in some way to the existing one, resulting in the formation of threads of

nodes. The narrative interactions within the threads define stories providing a spatial continuity in the system. The users build their own relationships to the story; their own unique memory spaces.

### ***Visualisation - Navigation***

The resulting information space, basically a network of information entities and relationships between them, needs to be visualized in some way in order to provide a spatial quality, as the information "space" itself has no inherent spatial qualities. An expressive visualisation must make strong use of the relationships between the information entities and the attributes attached to these entities (e.g., authorship information, submission time). In a well-designed visualisation, a wider set of actions beyond searching are possible: browsing, touring, and interaction. An effective visualisation can help the user to deal with the complexity of the information network and to provide structural awareness.

Transparency is reflected in the course interface through an overview of all students' works which are accessible as soon as these are submitted. This promotes immediate reaction and enables a flow of ideas and inspiration between the members of the community. Transparency is also supported by the visualisation and navigation mechanisms of the system, which allow for diverse views of the information stored in the system's database and show the complex relationships between the nodes.

In a system that constantly grows, effective mechanisms for navigation are needed.

Users acquire experiences every time they proceed through the information environment. There is no single route, instead there is the potential for many possible paths or actions. It is possible, and intended, for the users to switch to different navigation modes at any point, according to their interest, without interrupting the spatial experience.

The mental representation that the navigation constructs of the information space corresponds to a conceptual map that reflects the principles used to design the visualisation, and thus the underlying



relationships in the information [i]. The users, while browsing through the nodes, obtain a conceptual path of the spaces that they pass through.

The fake.space interface provides different views of the information space. These views vary from the visualisation of a single node and its immediate neighbour nodes - the inworld view - to an overview of the whole structure in relation to the node attributes and relationships - the outworld view. It also provides an overview of the individual contributions of a student or a group to the system - the profile view.

The “inworld view” of the node system shows a selected node with its immediate neighbours.

- **browsing:** The default view of the node system is presented in a standard frame. The current node appears in the center, and the predecessor and the possible successors are placed on opposite sides. One can move to a neighbour node by clicking on it.
- **auto-motion:** This is an automatic motion mode that follows threads through the node system, starting from a random location. Whenever it reaches a dead end, it jumps to another random location and continues the journey.

“Outworld views” give an overview of the node system, in different ways. The user may look at the whole structure, or retrieve groups of nodes according to certain attributes.

- **map:** This is a list of all the nodes, organized by node types (exercises, pipes, tanks). The newest nodes are listed at the top for easy referral. One can also sort the nodes according to other criteria, such as the best rated nodes, the oldest nodes, etc. A search mode is also included, where a full-text search is performed on keywords.
- **sky:** The sky view is a graphical representation of the tree structure underlying the node system. This is a clickable map that

lets one access the nodes based on the position within the system, and provides a graphically attractive overview of the growth of the node system. It is also possible to highlight the nodes submitted by any student or group, enabling one to see which strategies the students have used to place their nodes.

- **threads:** This view visualises all the threads that evolve from the eight initial nodes, making it very straightforward to follow all the branches and stories that have evolved in the system.
- **profile:** The profile view gives an overview of all the nodes that a member of the course has submitted. As the students form groups after the second exercise, the profile view also provides an overview of groups’ work.

### **Community Members**

Identity plays a key role in online communities. When collaborating, an awareness of the identity of those who share responsibility for building up the system is essential. In our community we support this requirement in various ways, two of which are the establishment of the “online identity” and the “profile”.

In the online identity, the members define an alias under which they are known in the community, make a statement on the subject of space, and provide personal information. The profile presents an overview of the members’ contributions to the system. These contributions are the submitted nodes and comments. In the inworld view each node is a link to its authors profile.

Over time the students developed a personal style in the representation of space and in the expression of conceptual ideas. This personal style is noticeable in the profile and recognisable when reading the commonly built story threads.

### **Self-Qualifying System**

Our aim is to motivate the community members to contribute towards a common goal, while they pursue their personal interests. Apart from keeping track of

authorship and visualising individual contributions, we encourage participation by ensuring an objective evaluation of individual contributions.

In the latest version of fake.space we introduced interactive critics facilities. Every member and guest can rate nodes in a range of three stages, “-”, “= “ and “+”. At the same time the average of all the ratings of a particular node is visible to everyone.

Besides the collaborative rating, another motivation source is the personal evaluation. The interface provides the participants with the possibility of submitting comments on the nodes and thus expressing their opinion publicly.

It is likely that our rating system motivated the students to match the quality of previously submitted nodes with high rating. After all, the ability to criticise, as well as to accept criticism are pre-requisites for a responsible involvement in the community.

## Evaluation

Fake.space was a successful experiment in many ways. We have taught the fake.space course three times and always used state of the art possibilities of database supported collaborative work.

The way the students made use of CAAD tools as a means of expression and the story-telling environment as a place to communicate their ideas sometimes surpassed our expectations. In order to place their nodes in the node system they used different strategies. Some of them preferred to spread their nodes over the system, others wrote a part of a story-thread by adding nodes in a sequential way. At many places in the node system, intensive “dialogues” took place between authors that led to unexpected and very interesting developments of the story threads. However, there were also cases where the students did not consider the context of the nodes onto which they linked their own, such that the story-telling did not always work.

Comparing the results of the last fake.space version to the previous one, the quality of the nodes has increased tremendously. We attribute this

improvement in part to the enhancements we provided in the environment, in particular, to the enhancements in the visualisation of the information stored in the database. These enhancements include the design of new visualisation options such as the students online identity, the profile, and the threads. We also attribute this improvement to the interactive critics facilities.

For more information on the earlier version of fake.space, see Hirschberg (1998).

## Discussion

In the future, communities formed by ideas will be as strong as those formed by the forces of physical proximity (Negroponte 1998). The formation of an online community requires that the participants have common interests and that a need exists to share ideas. Fake.space was a success because its main topic “space” worked in this respect. The students had the opportunity to experience “life” in an online community and think about space in its different aspects.

In order to create a viable online society, not only is the latest technology needed, but foremost is a deeper understanding of interface design and of the sociology of online communities required. The experience we gathered over the past three years have enabled us to substantiate the direction that this course should take in the future. These include the content of the lectures and the enhancements we should make in the design of the teaching environment.

A next stage in the development of our teaching environment is the design of mechanisms of “sophisticated survey” that will increase the students’ motivation.

Identity plays a key role in online communities. Establishing one’s online identity provides a great deal of motivation. For most participants both the establishment of their own reputation and the recognition of others plays a vital role. In an anonymous environment any kind of reputation is

impossible. The very purpose of anonymity is to facilitate wrong by eliminating accountability (Donath 1998). Transparency mechanisms ensure the elimination of anonymity, increase a member's responsibility to the community, and motivate participants to contribute to the group. Responsibility in this case concerns the fact that every individual's work becomes part of the system where good contributions augment the overall quality and bad ones have a diminishing effect.

Fake.space should allow members to develop a reputation based on the quality of their work and ideas. The motivation for quality that we associate with communities depends on the existence of distinct and persistent personalities. The design of the environment must provide for a vibrant and detailed impression of the personalities of the community (Donath 1998).

The existence of a quality control system that provides interactive critics facilities is of great importance for reputation mechanisms. In our environment we have used such mechanisms with success. In the future, we envision the development of a more sophisticated qualifying system.

Recognition by the system also increases motivation and involvement. Mechanisms can dynamically visualise the oscillation between the most successful works in terms of rating, "reveal" the most enthusiastic raters, show the most engaged commentors, and the most provocative works that have been the subject of discussion.

More work remains to be done in scaling up our user community by accommodating groups of architectural students from other institutes. We have tried this in the past with the Technical University of Kaiserslautern and our experience was very positive. This will form a richer environment as different architectural ideas and aesthetics, that can also derive from the use of different software, flow in. It would be very interesting to investigate the reactions and influences between the different groups.

## Conclusion

In our course, we teach students how to use CAD software with respect to a spatial theme and stress the meaning of computers as a medium by providing the students with a working environment that allows the contextualisation of information. The experience we gathered in the previous years should feed back into our lectures. The topics of "online communities" and "information spaces" should become an essential part of the lectures in the future.

Fake.space created the genre of spatial storytelling that suggests new concepts for architectural work in cyberspace. It reflects on a future where online communities entice students in a playful way to work with computers and CAD and gives them the opportunity to think about the role of networked environments in architectural space.

By enhancing our lectures we aim to motivate students to think more deeply about the abstract idea of space and the role that information spaces play in the conceptualisation of architectural space.

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