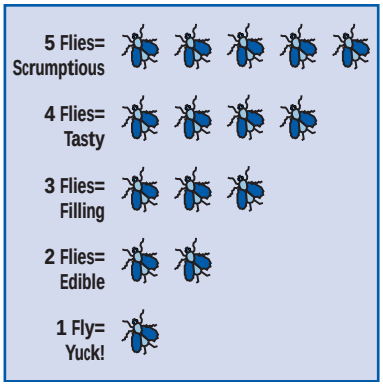
ARACHNOID TOURIST




# STUCK IN THE MUD

**Robert Filman** • *Lockheed Martin* • *filman@ict.atc.lmco.com*
**Feniosky Peña-Mora** • *MIT* • *feniosky@mit.edu*

As netizens maneuver through an ever-expanding web of information, they continually negotiate the duality of their online and physical lives. Increasingly immersive online environments have encouraged the rise of artificial societies. Anonymity, equality, and the ability to interact with everyone from everywhere allow netizens to explore their alter egos through cyberegos.

Sociologists and psychologists will debate the merits and dangers of interactions within these virtual communities for a long time. But the Spider doesn't care. We're just looking for the coolest cyberspots. This month we investigate virtual communities and their underlying technologies.

## INTERACTIVE ENVIRONMENTS

Interactive environments can provide one of the three necessities of human life—entertainment (the other two being food and shelter). These informal networks and artificial societies are the successors of Dungeons and Dragons, MUDs, MOOs, and BBSs. Advances in graphic systems and high-speed machines have made these new environments seem more immersive and realistic. As Bob Metcalfe recently remarked,

> "In the long-term future, the Internet's killer app is for when you can't afford to be at the right place at the right time, which is now already most places most times. The Internet's future killer app is telepresence, going places by sliding your bits, as Professor Negroponte would say, through the Internet instead of lugging your atoms through traffic, airports, hotels, office parks, and conference halls. . . . I'm talking about massive substitutions of communication for transportation!"
>
> —"Internet Futures," MIT Enterprise Forum, 26 February 1997

While communication may eventually replace transportation, the tools we've seen suggest that it's not going to happen soon.

The following are a few of the many sites that let us interact safely (in a physical sense, at least) with others. They differ in their use of Web protocols and the underlying Web structure. They also challenge the current paradigm of information exchange enabled by the Web. Since their model of interaction is inherently situational, they open a new modality for information retrieval. Conventional sites often present a tangled, disordered, and confusing web of pages. The sense of place these systems provide gives informational context and, ideally, a more intuitive interface for surfing. Furthermore, by situating the users with the data, this model eases collaboration.

### The Contact Consortium • www.ccon.org

This site briefly introduces most of the commercial products providing cyber-community environments. The link set is extensive and logically organized with a large list of worlds associated with each cybercommunity product. The site is aesthetically pleasing and includes several screen shots of the communities it describes. (The Spider particularly likes the pictures of Janka and Tomas's wedding, including such memorable scenes as "Bride tries to toss her flowers—but they are glued to her avatar." He is actively encouraging the spiderlings to consider a virtual wedding. It's considerably cheaper, especially since one doesn't even lose the virtual bouquet.)

While the list of cybercommunities is impressive, the descriptions are rudimentary and useful statistics are often lacking (for example, the size of the community, how active it is, and so on.) There is a link to the Avatars 97 conference (ironically held in real-space), which provided a more academic discussion of these worlds. Overall the site is a good first step for someone interested in exploring cybercommunities. But be warned: Cybercommunities have acquired their own jargon. A first-time tourist may have trouble fully comprehending the dialect.

### Active Worlds • www.activeworlds.com

This is by far the most popular (approximately 200,000 citizens) and complex cybercommunity environment on the World Wide Web. However, the Spider found both downloading the Active Worlds browser and registering for community citizenship confusing. It took several attempts to get the software working. Though not a general Web

browser, the Active Worlds browser uses the HTTP protocol to exchange most data. A simple Web document browser is also provided.

Most worlds charged admission, so the Spider was understandably reluctant to visit them. (We need to look into virtual press passes.) The worlds we visited were lifelike renditions of imaginary planets (Atuin), real-world museums (The Boston Museum of Science), and foreign cities (Brasilia). The Active Worlds Browser has a confusing user interface but provides powerful navigation features.

It's difficult to characterize the Active Worlds system as a Web application since the paradigms it employs may one day replace those prevalent on the Web today. Instead of a set of interlinked documents, the interface provides a set of interlinked places. Billboards and objects within the environment can have image and video outputs, provide hyperlinks to Web documents, or teleport the individual to a different world or place (an extension of the hyperlink concept to the cybercommunity).

In general, the Spider's adventures in Active Worlds were amusing and exciting. The Active Worlds environment has great potential and is pleasing to the eye, but it leaves much to be desired in terms of interpersonal communication support among its cybercitizens. Addressing different people is confusing and there are limited expression capabilities (happy, sad, angry) provided in most of the worlds. The conversation model allows no privacy since the nearest 12 persons can hear the conversation. When we tried to have a private conversation with one individual, we were forced to hop from one world to another to avoid interruptions from other cybercitizens. We were even accosted by cyberevangelists!

The society is ever growing since the administrators allow citizens to squat on unclaimed land and build their own palaces and cyber amusements. In one world all the citizens were automatically transformed into arachnid-like creatures, making us feel right at home. As in all online media, this environment also has a complex adult section (keep the hatchlings away!).

### Worlds Away •
www.worldsaway.com
Fujitsu

This product is more intimately linked to the Web than the Active Worlds system, although like Active Worlds, Worlds Away offers a limited domain of exploration for guest (read nonpaying) members. The Worlds Away browser is a Netscape plug-in. The graphics are disappointing (although the images look 3D, the actual environment is 2D with no support for perspective).

The community here is much more developed and the interactions much richer than those in Active Worlds, with many gestures and facial expressions supported (you can even bow, an important gesture in Fujitsu's Japan). Communication can take place within a room or between two people anywhere in the world (using extrasensory perception). Conversation appears as small comic-strip bubbles attached to the avatars.

The environment is a simple hallway and the whole system is based on buying and selling trinkets or upgrades to your body. (We started off as a woman and eventually switched to a portly middle-aged man with a beard.) Members of the community are very friendly—one member gave us a great private tour that lasted approximately half an hour. The member also gave us cash to fix up our body. Most of the Worlds Away citizens we talked to had been members for around two months and spent a significant amount of time online. This is necessary as members earn 60 tokens—Worlds Away's cybercash system—for every hour they spend online.

Overall the community experience was great but the graphics left a lot to be desired, and the system was too materialistic with too little room for expansion.

## THE NEW CAMPUS EXPERIENCE

Can the Net replace college? Do the social stresses of college students become better or worse if you only get virtually drunk?

While these two sites offer an interesting and new perspective on education, they're currently only halfway there. The Virtual Online University site is a serious university effort but Diversity University just seems like another place for cybercommunity chats.

### The Virtual Online University •
www.athena.edu

This site supports a university (Athena University) and a high school (Athena Academy). The university offers several courses online through a Multiuser Object-Oriented (MOO) interface. There is limited graphical representation of people but the site administrators have indicated that they intend to provide a virtual world environment. The site contains complete descriptions of the courses offered. The MOO environment as well as World Wide Web documentation and e-mail support the courses. Unfortunately, no courses were available for our perusal.

An interesting application of cybercommunity. The Spider gives it an extra fly for potential.

### Diversity University •
www.du.org

Soon after entering Diversity University, we were greeted with the message:

> "You are a ghostly presence at Student Union Lounge. This is a busy place, frequented mostly by students who're looking for colleagues to talk to and ways to kill time. There is an old red couch in the corner, usually occupied by sleeping students. Several hallways branch off this center, and large glass doors on the southern wall lead to the foyer. Sign up to volunteer for our DU Open House September 25–27, 1997!! Type 'read oh.'"

The Spider fully expected to find the well house of an old spring just beyond the foyer. And while the environment of that well house did take up too much of the Spider's time at university, Spider's schooling did include a few courses. Courses were something we couldn't find at this site. We hardly encountered any students here either.

The system is based on a MOO and provides a VRML interface to the different places to visit. However, none of the locales were fully developed and all followed identical tem-

plates. Overall, the site is a poor application of an interesting idea.

## TECHNOLOGY

So how do they do all that? Two technologies driving virtual environments are VRML and MOO/MUDs.

### Virtually Modeling Reality

Virtual Reality Modeling Language (VRML) is an HTML for expressing 2D representations of 3D models. It includes primitives for elements such as hierarchical transformations, light sources, viewpoints, geometry, animation, and textures. Like HTML, VRML is intended to be a multiplatform language. There are a large number of VRML resources on the Net: VRML browsers and plug-ins, world-building tools, image manipulators, tutorials, and documentation.

### The VRML Repository San Diego Supercomputer Center • www.sdsu.edu/vrml/repository/repository.html

The best root we've found for the VRML enthusiast is the repository maintained by the San Diego Supercomputer Center. We liked the large number of pages at this site. (Evidently, the day we visited, so did a lot of other people—we got better service from European mirror sites than the relatively local California one.)

### The Annotated VRML97 Reference Manual • www.best.com/~rikk/Book/book.shtml

Rikk Carey and Gavin Bell

This site offers the complete and annotated specification of VRML 2.0 as of April 1997. While it's not a tutorial, the manual has several virtues, such as explaining the standard and being free. (You can purchase a nonvirtual copy at a nonvirtual bookstore.) From the text we learned that VRML 2.0 supports 54 different object types (nodes), an event mechanism, sensors for accepting user input and clocking a simulation, scripts, an encapsulation mechanism for naming and extending new classes, and mechanisms for distributing simulated realities.

Of the various VRML explanations we found on the Net, we liked this one best. It is not only comprehensive (including, as it does, the reference manual) but also succeeds in conveying the underlying rationale. Finding so complete a text on the Net is still rare. (The Spider is curious as to whether free distribution helps or hurts physical book sales—that is, do book-club marketing rules apply in cyberspace?)

### Focus on VRML • vrml.miningco.com/library/weekly/mpreviss.htm

Sandy Ressler

For a focus on current VRML events, we turn to Sandy Ressler's entertaining weekly column at the Mining Company. Ressler mentions current events and points out interesting demos. One thing we've discovered in trying to get VRML working in a variety of environments is that lots can go wrong. We suspect that others have had this experience, and that it has been a drag on VRML technology adoption. Ressler peers into his crystal ball, and predicts that the incorporation of VRML into Windows 98 will take it from a hot technology to a popular success.

### MOOs and MUDs

A Multi-User Dialogue (MUD) is a computer program that allows several people to simultaneously log in, explore, and interact. Each user is represented by a computerized character, or avatar. MUDs and MOOs (MUDs extended with an object-oriented programming language) are the original virtual shared environments—the text predecessors of the graphic communities described at the beginning of this column.

### The Lost Library of MOO • lucien.berkeley.edu/moo.html

This site is a simple index of manuals, FAQs, and academic papers on cybercommunity environments using MOOs. The site contains no original content and does not properly introduce the topic. However, the list of links is extensive and ranges from the introductory to the detailed. The listed academic papers address a variety of issues related to cybercommunities, from synchronization of user events to the social dimensions of cyber interaction (with a particular emphasis on gender politics in the online world). The papers devoted to the application of cybercommunity environments to education are limited. Delve deeper into the web of links to find them.

### LambdaMOO • ftp://ftp.lambda.moo.mud.org/pub/MOO/papers

Perhaps the most famous MUD was Pavel Curtis's LambdaMOO, sited at Xerox's Palo Alto Research Center. MUDs and MOOs inspired several academic papers, primarily on the sociology of Net communities. This site stores a good collection. Go up the directory tree a little and find the code for implementing a MOO of your own.

### PlaceWare • www.placeware.com

How does virtual community technology turn into product? Pavel Curtis is one of the founders of PlaceWare, a start-up that provides auditoriums for virtual meetings, especially useful for distributed training. The interface provides several interesting mechanisms for interaction. Students can choose their seats in an auditorium and can address all students within a row or only the adjacent students. Audience members can also interact with the instructors in a variety of forms. They can submit asynchronous questions that are queued for the instructor. Like a conventional classroom, students can also raise their hands, receive the floor and address the entire class.

The program supports visual presentations, text interactions, and audio interaction (this feature was not successfully tested by the reviewers and we have doubts about the quality of the multicast audio in these classroom sessions). Check out their daily demos. The Placeware system seems to have significant industrial customers that have applied the system for employee training. Overall this was one of the best developed cybercommunity environments although its scope is limited to the classroom setting.

The Spider thanks Karim Hussein for his assistance in developing this column.