

Lisa Jevbratt

Title *Infome Imager*

Genre Crawling/visualization software tool

Applicant's Role in Production Idea, system design, interface design, programming etc.
(Direction of additional programmers.)

Production Format Software written in perl. Web-site, HTML.

Brief Project Description

The *Infome Imager* is a software for creating visualizations of the World Wide Web. The software allows the user to create "crawlers" (software robots, which could be thought of as automated Web browsers) that gather data from the Web, and it provides methods for visualizing the collected data. Some of the functionality of the *Infome Imager* software is similar to a search engine such as Google, but with some significant differences. Those differences shifts the software's functionality from being merely a tool for finding information on the Web to an art project which is generating new understandings of the Web. The *Infome Imager* crawler collects "behind the scenes" data such as the length of a page, when a page was created, what network the page resides on, the colors used in a page and other design elements of a page etc. It scratches on the surface and glances down into the subconscious of the Web in hopes to reveal its inherent structure, in order to create new understandings of its technical, aesthetic and political functionalities.

The user interacts with the software via an interface on the *Infome Imager* Web site. Using the Web interface, the user sets parameters for the crawler and the visualization. The software allows the user to manipulate the crawler's behavior in several ways. The user decides what data the crawler should collect and how the data should be visualized. S/He can choose different methods – ways of "placing" and translating the data into color – for visualizing the data.

The result of the crawling process is a visualization which also functions as an interface linking to all the sites the crawler visited. The visualizations/interfaces created with the *Infome Imager* are collected on the *Infome Imager* Web site, and can be viewed there by the creator as well as by other users.

The crawler and data mapping software that together form the foundation for the *Infome Imager* software was originally developed for the "Mapping the Infome" show exhibited in conjunction with "Lifelike" at New Langton Arts in SF in July 2001. (See "Mapping The Web Infome" project description and project in the samples section).

New Media Fellowships

2004 Sample Work Form

Check One: _____
Sample _____
Supplemental _____

Lisa Jevbratt

If you are sending more than one sample, please copy this page. Sample(s) must be cued: indicate how long each sample should be viewed for a COMBINED viewing time of no more than 15 minutes. If slides are included in this application, please list the title and year of the work on this form.

Title *Mapping the Web Infome*

Year 2001

Technical Information

Original Format	Format Submitted for Viewing	Preferred OS
<input type="checkbox"/> Software	<input type="checkbox"/> Software	<input type="checkbox"/> Windows
<input checked="" type="checkbox"/> Web	<input checked="" type="checkbox"/> Web	<input checked="" type="checkbox"/> Mac
<input type="checkbox"/> Installation	<input type="checkbox"/> VHS	<input type="checkbox"/> Unix
<input type="checkbox"/> Other	<input type="checkbox"/> Other	<input type="checkbox"/> Other

Web Information (answer only if sample work is in Web format)

URL http://jevbratt.com/mapping_the_web_infome/

Browser requirement(s) Netscape 4+, Explorer, Javascript has to be enabled

Plug-in requirement(s) _____

No This sample requires broadband connection (fast Internet connection)

No A local copy of the sample work has been included with the application

Special Information for Screening:

Click on the links with the artists' names to access the different artists projects. Read their descriptive text and view the manifestations of their crawler(s) by clicking on the links to the right of their text. Some of the visualizations have clickable links to the sites from where the data was collected embedded in their images or as html links. (The project will be functioning properly again on December 1st 2003)

Description of Work

"Mapping the Web Infome" is a net art endeavor developed as a part of the exhibition LifeLike at New Langton Arts Gallery in San Francisco (June/July 2001). The exhibition consisted of works exploring life like processes in various media. As the net work curator I tried to find work that would explore and acknowledge the Web as a living organism. When I realized how difficult it was to find that kind of art-projects, I decided to develop software that would enable investigation of the Web as a complex entity, a living organism created by language and protocols, and to invite a number of artists whose work and methods seemed relevant and who would enjoy producing a project with

the software. The Infome software enables the creation of Web crawlers - automatic processes that access Web sites and collect data from them - and the creation of visualizations/mappings of the collected data. The software was developed in a short time with these ten or so expert users in mind. The artists then used the software with me available to modify it to their specific needs and fixing bugs on the fly. The crawlers and mappings that were generated are different from each other in purpose and intent but are joined conceptually by the possibilities and limitations of the software. The project proposed for a fellowship, the *Snip* software, is an extensive expansion of the software developed for "Mapping The Web Infome".

The process of harvesting, sequencing and mapping the human genome has been described as that of a group of people in a dark room fumbling around not knowing what is in the room, how the room looks or what they are looking for. Someone bumps into a thing with four sharp corners and starts to look for other things with four sharp corners. Someone else decides to move along what seem to be walls and feel their texture, yet another sits still and waits for the others in the room to pass by, taking notes on their activities or maybe on their scents.

We have come to think of DNA as code, as a language in which the stories of all life are written. We are in a space defined by that language and we try to understand the space by deciphering its language. The Web is a space created and constituted by language. It's made up of protocols and code. It's not old. We know its languages, we designed them. Yet the whole made up of the parts could now have reached a level of complexity and richness that makes it interesting to relate it to that mysterious room of the human genome. To turn around and look at it from the outside, as a system to unveil, with a language for us to decipher.

We know that in our DNA there is a substantial amount of code, sometimes referred to as "junk DNA", that does not seem to mean anything. Maybe that DNA is part of something larger, some other organism, an entity evolving over millions of years with a genome that survives all species carrying its code. Maybe we, and other various life forms, are its mitochondria, its amino acids and nucleotides. Or maybe each of us is just another base pair in this all-encompassing biome.

The Web, the part of the Internet using the HTTP protocol, might not be an organism with a future. There may be other protocols or combinations of protocols yielding more fruitful environments. If so, this is the time to map the Web's chromosomes, to find its polymorphisms (the SNPs - small discrepancies in the code that tell us about its history), detect its "junk data", and maybe in the process, discover and invent the grand infome behind it.

I invited the artists Geri Wittig, Lev Manovich, Kevin & Jennifer McCoy, Giuseppe Prisco, Brett Stalbaum, Jan Ekenberg, Ron Goldin, Arijana Kajfes, Kazunori Takahashi and Marc Bohlen. The artists engaged with the software in two steps. First they sent out crawlers and then they visualized the data the crawler collected. The artists accessed the interface to the software from a Web page. They could also view the crawler settings made by the other artists and the data that those crawlers had collected. The artists were also asked to write a text describing their project, approach and experience with the software. The projects created ranged from minimalist conceptualizations to beautiful visualizations.

Both Geri Wittig and Lev Manovich were using a visualization method provided in the software that is mapping both the movement of the crawler and some collected data. With this visualization method, each page visited by the crawler is represented as a line. The first page visited is a pixel in the center of the image. The lines radiating out in a circle around that pixel are the links from that page. The next circle of lines represents the pages that were

linked from the pages in the previous circle. Thus each circle represents the distance in clicks away from the starting page. In Manovich's images a de-centering of the line-circles has occurred as a result of a crawler moving in defined patterns not just following every link on each page. Wittig was using the method to display information about how words were used on different clusters of sites. She used colors to indicate the most commonly used and shared words on each page visited. Manovich's approach was more of an aestetization of the crawling activity in itself, viewing the mappings as paintings created in information space by the crawler.

Giuseppe Prisco took a more conceptual approach, using the crawlers as a way of measuring the aliveness of the Web (and possibly a new way of measuring time). He was sending out crawlers that were looking for pages created after the crawler was sent out. The shorter amount of time it takes the more alive the Web is i.e. the more new pages are added to the Web.

Arijana Kajfes and the McCoys were visualizing the use of color in backgrounds, fonts and tables from the pages their crawler visited. Kajfes was starting several crawlers by making them search for each of the names of the cards in the Tarot deck. The images that came out thus visually represents the coloring of the sites listed in response to each search. Each image was turned into a card. The cards were printed and shown as a tarot deck in the exhibition. The McCoys were setting their crawler to collect only blue, white and grey colors to generate a sky image. Brett Stalbaum was sending crawlers to famous net art sites and collected the comments made in the HTML. Interesting and funny since a lot of net artists have been playing with the tension of what is seen and what is not in a browser. Stalbaum's crawlers took these "behind the scenes" comments and brought them up to the front by presenting them as printable posters.

Exhibition history:

Mapping The Web Infome / LifeLike, New Langton Arts Gallery in San Francisco CA (June/July 2001).

A smaller version of the software used by the artists was made accessible to a general audience, for a limited time in September of 2002 for the show "Mapping Transitions", curated by Christiane Paul and Mark America in conjunction with the conference "Rethinking the Visual: New Technologies in the Context of Society and Culture" at the University of Colorado in Boulder. That version can be accessed at

http://jevbratt.com/infome_imager/lite/

New Media Fellowships

2004 Sample Work Form

Check One: _____
Sample _____
Supplemental _____

Lisa Jevbratt

If you are sending more than one sample, please copy this page. Sample(s) must be cued: indicate how long each sample should be viewed for a COMBINED viewing time of no more than 15 minutes. If slides are included in this application, please list the title and year of the work on this form.

Title 1:1(2)

Year 1999/2002

Technical Information

Original Format	Format Submitted for Viewing	Preferred OS
<input type="checkbox"/> Software	<input type="checkbox"/> Software	<input type="checkbox"/> Windows
<input checked="" type="checkbox"/> Web	<input checked="" type="checkbox"/> Web	<input checked="" type="checkbox"/> Mac
<input type="checkbox"/> Installation	<input type="checkbox"/> VHS	<input type="checkbox"/> Unix
<input type="checkbox"/> Other	<input type="checkbox"/> Other	<input type="checkbox"/> Other

Web Information (answer only if sample work is in Web format)

- _____ URL http://jevbratt.com/1_to_1/
- _____ Browser requirement(s) Explorer, Netscape 4+ (above 6 might not work) Javascript and cookies have to be enabled.
- _____ Plug-in requirement(s) _____
- No This sample requires broadband connection (fast Internet connection)
- No A local copy of the sample work has been included with the application

Special Information for Screening:

There are five different interfaces, explore them by clicking on their links from the front page. Each interface has a help/description page which is accessed by going to the interface and clicking on the "?" link on the bottom of the page.

Start by looking at Interface Hierarchical. It shows the database in the cleanest way, as a directory structure. Then look at Every, it shows all the addresses in the database in one image. Make sure to look at the interface "Migration", which is the most recent interface showing the difference in where the Web was located in 1999 and where it is now.

Description of Work

1:1 was a project created in 1999 which consisted of a database that would eventually contain the addresses of every Web site in the world and interfaces through which to view and use the database. Crawlers were sent out on the Web to determine whether there was a Web site at a specific numerical address. If a site existed, whether it was accessible to

the public or not, the address was stored in the database. However, the Web was changing faster than the database was updated and in 2001 it was clear that the database was outdated.

1:1(2) is a continuation of the project including a second database of addresses generated in 2001 and 2002 and interfaces that show and compare the data from both databases.

The IP address database:

The numerical addresses used for all computers connected to the Internet are called IP (Internet Protocol) addresses. A URL, the name of a site that we usually use, for example cadre.sjsu.edu, is really just a cover for the IP address 130.65.200.15 that is the "real" address of a Web site. IP addresses range between 0.0.0.0 and 255.255.255.255. The crawlers don't start on the first address going to the end; instead they search selected samples of all the numbers, slowly zooming in on the numerical spectrum. Because of the interlaced nature of the search, the database could in itself at any given point be considered a snapshot or portrait of the Web, revealing not a slice but an image of the Web, with increasing resolution.

When the project was first created in 1999, approximately two percent of the spectrum was searched and 186,100 sites were included in the database. In the fall of 2001, the search was started again. The initial idea was to continuously search the IP space to eventually have covered the whole spectrum. But since the Web has changed drastically since 1999, it seemed more interesting to search the same areas again to be able to make comparisons between the Web then and now.

The interfaces:

Five interfaces (*Migration, Hierarchical, Every, Random, Excursion*) visualize the databases and provide means of using the databases to access and navigate the Web. The *Migration* interface reveals in one image how the Web has "moved" over the last few years. The other four interfaces show the two databases in parallel.

When navigating the Web through the databases, via the five interfaces, one experiences a very different Web than when navigating it with the "road maps" provided by search engines and portals. Instead of advertisements, pornography, and pictures of people's pets, this Web is an abundance of inaccessible information, undeveloped sites and cryptic messages intended for someone else. Search-engines and portals deliver only a thin slice of the Web to us, not the high-resolution image we sometimes think they do. The interfaces/visualizations are not maps of the Web but are, in some sense, the Web. They are super-realistic and yet function in ways images could not function in any other environment or time. They are a new kind of image of the Web, and they are a new kind of image.

For the specifics about each interface, click on the "?" link in the bottom left corner of each interface.

Exhibition/award history:

1:1, and its update *1:1(2)*, has been exhibited at New Langton Arts Gallery, San Francisco, Transmediale in Berlin, The New Museum in NY, Ars Electronica in Linz, The Pamplona Video festival of Navarra, Pamplona, Spain, Nordic Interactive Conference, Copenhagen, Denmark, Hotspot, Gotland, Sweden, Rosenberg Gallery, Towson, Maryland and in the Whitney Biennial 2002. It is in the Altoids contemporary art collection and it has been presented at San Francisco Museum of Modern Art. It was nominated to a Webby award 2001. It is included in the book "The Atlas of Cyberspace" by Dodge and Kitchin, 2001 and in "Digital Art" by Christiane Paul, 2003.

New Media Fellowships

2004 Sample Work Form

Check One: _____ Sample _____ Supplemental

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If you are sending more than one sample, please copy this page. Sample(s) must be cued: indicate how long each sample should be viewed for a COMBINED viewing time of no more than 15 minutes. If slides are included in this application, please list the title and year of the work on this form.

Title *Syncro Mail – Unconscious Collective*

Year 2001

Technical Information

Original Format	Format Submitted for Viewing	Preferred OS
<input type="checkbox"/> Software <input checked="" type="checkbox"/> Web <input type="checkbox"/> Installation <input type="checkbox"/> Other	<input type="checkbox"/> Software <input checked="" type="checkbox"/> Web <input type="checkbox"/> VHS <input type="checkbox"/> Other	<input type="checkbox"/> Windows <input checked="" type="checkbox"/> Mac <input type="checkbox"/> Unix <input type="checkbox"/> Other

Web Information (answer only if sample work is in Web format)

URL http://jevbratt.com/syncro_mail/unconscious_collective/
 Browser requirement(s) Netscape 4+ (6 or above might not work), Explorer, Javascript has to be enabled
 Plug-in requirement(s) _____
 Yes This sample requires broadband connection (fast Internet connection)
 No A local copy of the sample work has been included with the application

Special Information for Screening:

The page consists of icons of the images sent with the *Syncro Mail* e-mail client, organized on a timeline. Click on the images that you find interesting, to open up a window displaying the image in its actual size. To move around on the page click on the scaled mapping. To send an email, use the form on the left. (The project will be functioning properly again on December 1st 2003)

Description of Work

Syncro Mail is a Web based email service that allows a user to send an email consisting of an image and a word randomly selected from the Internet to someone of choice. The sender does not see the image or the word, and have no influence over their selection. Does the picture become meaningful to the receiver because he/she knows who sent it? What story does the image tell us? *Syncro Mail – Unconscious Collective* provides a mapping of all the emails sent during the year the software has been running. Now the questions to ask are if and how we, the receivers, are connected, not only to the person sending the picture but also, to each other. Are we joined because

we all are influenced by a picture selected by *Syncro Mail* within a specific time period? Are the pictures telling us a collective story? A story about the collective?

Software are not linear. The Web is not linear. PhotoShop is telling us something; plots emerge as we traverse the Web. Thus we do recognize stories in the non-linear. These new plots are not horizontal. They don't come to us through the syntagm, through correct grammar, an adjective following a verb following the noun. No, they occur in paradigmatic relationships. Between an occurrence of a chair and all other chairs, between the verb and all other verbs, in the relationship between an image and all other images. They are vertical. The meaning of these stories don't rely on cause and effect. Does such logic, the database logic, harbor the magical? In any case, the meaning in these stories is not causal, it is acausal, it is synchronistic.

The mapping of the emails is presented on a time-line with a scaled version functioning as a navigation bar. Each image is framed by a color representing the receiver and the color of the associated word represents the sender. The mapping is updated once a day, adding the emails sent that day.

Exhibition history:

Korea Web Art Festival <http://www.koreawebart.org/> (Dec 2001-Jan 2002)

Artist Statement

Lisa Jevbratt

I have been working, exhibiting and curating in the field of systems/Internet based art since I came to the USA from Sweden in 1994. My work has been exhibited and presented nationally and internationally; in venues such as The Walker Art Center, The New Museum, Ars Electronica, Transmediale, and the 2002 Whitney Biennial. In addition to my solo projects I have been collaborating on performances and events as a member of the group C5.

The **content** of my projects includes the social, aesthetic and political implications of the languages and protocols constituting networked information technologies. In the context of new technology I aim to create an understanding of the process in which cultural significance and mythologies are produced and create ways of experiencing, modifying and/or questioning those processes. During the last four years I have created systems that visualize data collected from, and concerned with, the use and functionality of the Web, Internet and e-mail communication. *1:1*, *Out of The Ordinary*, *Mapping the Web Infome* and *The Infome Imager* all provide new ways of mapping, experiencing and understanding the spaces of the Web and the Internet; *The Stillman Projects* and *Troika* investigates the Web as a public environment and the e-mail sender *Syncro Mail* targets people's private relationships to, and hopes for, digital communication.

The visualization software I write aim to avoid two common traps of information visualization. First, many information visualizations created by artists use data to "paint". In those, the correlation between the data and the visual elements is too arbitrary. My software create visualizations which are direct imprints, indexical traces, rubbings, of the data. Typically each visual element has a one to one correlation to what it represents, the positioning, color and shape of the visual elements have one graspable function which allows the complexity and information in the data itself to emerge. The second problem is more commonly seen in the scientific community. There the data is used without allowing it to express itself at all; i.e. the system of representation is not arbitrary enough. Much visualization in that category is merely illustrations of models we already conceived of. Data is being plugged into a structure that in itself holds all beliefs that can be derived from the imagery. The visualization methods I develop aim to produce visualizations that are not only representations of a reality, but that are a reality. They aim to tell us something we did not know about the data. They are objects for interpretation, not interpretations. They should be an experience, not a discussion of the experience. The reason for this approach is twofold. On a more basic level it allows the image to teach us something about the data, it allow us to use our vision to think. On another level it makes the visualizations function as art in more interesting ways. Connecting them in various ways to artistic traditions from pre-modern art such, as cave

paintings, to abstract expressionism, minimalism and to post-structuralist deconstructions of power structures embedded in data. The visual “look” that follows from this thinking is very “plain”. It is strict and “limited” in order to not impose its structure on its possible interpretations and meanings.

Many strategies for aiding people in the task of transforming any large set of data into knowledge assumes that they should be presented less information, less choices in order to be able to make sense out of the data. However, humans are capable of sorting through enormous amounts of information and make sensible and complex decisions in a split second, (the ability of driving a car is one example). Supported by Kant’s idea of the sublime, which says that in experiencing the unfathomable our organizing senses are mobilized in a sense of awe, I propose that when presented with a lot of data, people are forced to make more intuitive decisions. On a hike, people seek the highest point in the landscape to get an overview, to be able to make decisions on where to go next. The important task of information visualization is to create the lookout points in the data environments, not to produce specific views of it.

The formal concerns I have are determined by the functionality of the software. The primary aesthetic decision happens on the system level, and the visual appearance follows the operation of the system and the functionality of its interface. Colors and shapes are rarely defined on the surface but are indicators of some systemic fact. I consider every detail in an interface to be part of the project, to carry an important semantic. The result of this method is a fairly minimalist semantic “design” whose poetry is based more in absence than presence even when the project presents enormous quantities of data. With an education in traditional contemporary art, the process I use is in some sense a traditional artistic/ creative process. I immerse myself in a particular problem, language, and Internet context and allow the medium, the languages of the networks, to “talk back”. Programming is my actual medium; writing code is the bulk of the work. My ideas are formed in, and as a result of, the coding.

In addition to creating art projects I write texts that clarifies the projects and their context and I participate in panels, discussions and presentations about different aspects of New Media Art. Being an artist investigating a new field with tools and languages not typically used for art, my theoretical interest is often related to how to form an interesting and meaningful critique of these kinds of works. I have given lectures at art departments and art schools such as Cal Arts, UC Berkley and SUNY Buffalo, panels and presentations organized by institutions such as SFMOMA, San Francisco International Art Fair and The Whitney Museum of American art, and I have texts and interviews published in journals, books and online.

Infome - noun, from: information + ome (- suf., all, the totality of, (as in genome))

The Infome Imager is a software for creating visualizations of the environment created by the Internet protocol HTTP - the Hyper Text Transfer Protocol. HTTP is the protocol responsible for the Web, the part of the Internet that triggered an economical and technological upswing of unfathomable proportions in the nineties. The Infome Imager allows the user to create “crawlers” (software robots, which could be thought of as automated Web browsers) that gather data from the Web, and it provides methods for visualizing the collected data. The functionality of the *Infome Imager* software is similar to a search engine such as Google, but with some significant differences. A search engine crawler collects data about the intended content of a page, the actual words written by one person, the Web author, in an effort to index the Web according to the “meaning”, the semantics, of Web pages. The *Infome Imager* crawler collects “behind the scenes” data such as the length of a page, when a page was created, what network the page resides on, the colors used in a page etc. It glances down into the subconscious of the Web in hopes to reveal its inherent structure, in order to create new understandings of its technical and social functionalities. Another difference lies in the way the data is presented to the user. The search engine uses algorithms to sort the data according to one theory or another, in order to present the user with pages containing a few selected links each. The user is not allowed to see the actual data, but a subset of it, selected and sorted by a computer. The result of an *Infome Imager* “search” is an image with all collected data, potentially a vast amount of information, presented in a way in which the human brain, not the computer, is put to work on what it does so well – creating intuitive understandings of large quantities of information.

The contribution to, and significance for, its genre

While the Web was interesting as a conductor for the dot com era, its role as an environment for information exchange and as a social space, it has proven to have other even more interesting features. Just as its creator Berners –Lee had hoped for, it can be looked on as a carrier of knowledge about us, as humans, as a species. It holds an enormous amount of data regarding our interests, activities and exchanges. Moreover, lately, the type of networks formed by the inter-linked documents of the Web has shown to display lifelike qualities and the Web has been pointed out as an environment to research in order to create a greater understanding of networks in general, sociological and even biological. Now, the Web is much more interesting seen as an organism than as a delivery mechanism or space. Creating an understanding of the creature emerging through the use of HTTP also has a political importance. The protocols of the Internet were not developed by corporations, they are not proprietary. They were developed through open discussions (facilitated by the RFC system) and groups of academic researchers.

Even though the hypertext transfer protocol was the brainchild of one person it was developed within that tradition. The Internet protocols are open to be implemented by anyone that wants to write clients and server software using them and they are to a large extent open for any one to develop and change on the actual protocol level as well. While the development of wireless technologies and protocols are exciting for many reasons, including the sense of freedom they bring to the end user, those technologies are to a large extent developed by corporations and are on many levels not free to develop and use by the general population. As corporations have taken over from academia and idealistic individuals as a driving force behind emerging network technologies, its counter culture, the open source movement, is growing stronger as well. The Internet protocols and HTTP are the conceptual (and of course technical) ancestors of that movement thus a deepened understanding of what these protocols have created can provide important ammunition for the open source movement.

Artists have been working with the Internet and information visualization for several years, yet the "underbelly" of the Web has been left surprisingly unexplored. There are some exceptions such as The Web Stalker project, which maps the linkage structure of the Web, but to a large extent the Web has been taken at face value, accepted as a fixed environment for information display. Its surface, its appearance in Web browsers, and the HTML code, has been "deconstructed", manipulated and questioned in various net art endeavors, for example by Jodi and the Potatoland "Shredder", but the depths – the language and protocols behind the scenes – are mainly untouched. The *Infome Imager* taps this neglected wealth of data by allowing users to collect and visualize it. The Web is an environment defined by language and protocols, designed and written by us. Within its structure, its code, are political, economical and aesthetic assumptions buried, just as any language carries inexplicit meanings. The ability to actually see this data can help us understand the environment that we are collectively creating and many of us are living in and through. (Even if we are not directly engaging with the Web or the Internet in our daily life I would argue that it is changing our lives just as any technological invention before such as the camera or television).

The Functionality and Use of the *Infome Imager* Software

The user interacts with the software via an interface on the *Infome Imager* Web site. Using the Web interface, the user sets parameters for the crawler and the visualization. The software allows the user to manipulate the crawler's behavior in several ways. The user decides where it should begin crawling; it could for example start on a Web page specified by the user, a page resulting from a search on a search engine, or on a random Web page. Another set of options is determining how the crawler should "move around" i.e. the order in which links are followed; for example it could be following all links on all pages sequentially or "dancing around" in a defined pattern. The crawler can be set to either visit a page once or every time it encounters a link to it. The data resulting from many revisits will create repetitive patterns in

the visualization, revealing the linkage structure of the Web sites, while data resulting from single visits will generate distinct data. The crawler stops when a certain condition is met as determined by the user, for example after a certain amount of pages have been visited or a specific piece of information is found. The crawler can take many hours depending on the amount of pages it should visit. The activity of the crawler can be monitored on the *Infome Imager* Web site. The result of the crawling process is a visualization that also functions as an interface linking to all the sites the crawler visited. The user decides what data the crawler should collect and how the data should be visualized. S/He can choose different methods – ways of “placing” and translating the data into color – for visualizing the data. Two methods have been developed at this stage, more will be developed. One of the current methods is emphasizing the linkage structure of the web and the other is a straightforward pixel by pixel representation of the data. These methods as well as the ones that will be developed embody some specific ideas around visualization which are discussed in my artist statement.

The visualizations/interfaces created with the *Infome Imager* are collected on the *Infome Imager* Web site, and can be viewed there by their creator as well as by other users.

Project development

I created the crawler and data mapping software that together form the conceptual foundation of the *Infome Imager* software in March 2001 for the “Mapping the Web Infome” (http://jevbratt.com/mapping_the_web_infome/) show exhibited in conjunction with the show “Lifelike” at New Langton Arts in San Francisco, in July the same year. I developed the software specifically for a group of invited artists and theoreticians (Arijana Kajfes, Lev Manovich and Kevin & Jennifer McCoy, Brett Stalbaum and others) who used it to produce projects for the show. I developed a smaller version of that system, *Infome Imager Lite*, (see sample projects) accessible to a general audience for a limited time in September of 2002 for the show “Mapping Transitions” in Boulder, Colorado (curated by Christiane Paul and Mark America).

The software developed so far only touches on its potential. I propose to develop the *Infome Imager* software extensively and make it fully accessible on a long term basis to a general audience. There will be a significant development of the visualization methods.

The project is programmed in the language Perl. I have been programming network and visualization software in Perl for many years. Since the basis of the *Infome Imager* software is already under development, I know the issues that need to be addressed, and, while I am aware of the complexity of the task, I know that I can solve the problems I will encounter. The expansion and development of *Infome Imager* can be accomplished in stages each broadening and increasing the functionality of the

Infome Imager project description

system. While there is a foundation that needs to be there for the project to maintain its identity, there are no fixed set of functions beyond the foundation described in this proposal that need to be there at the completion for the project to be successful.

I will develop the project with the help of a small group of graduate research assistants at UC Santa Barbara where I teach. During the development phase the project will reside on a Web server on the UC Santa Barbara network, but will eventually be moved to its own domain.

Fellowship use

In winter of 2004 I will be artist in residence at The Media Centre in Huddersfield for three months. I will spend those months developing the software.

To be able to complete the project and to make it accessible for a general audience on the Internet, the project needs my undivided attention for one two more quarters (six months), a dedicated Internet server such as a Mac OSX, and additional personnel for programming and system administration. The fellowship would be used to cover those expenses.

Infome Imager – Budget**Lisa Jevbratt**

Mac OSX Unix server	\$7000
Misc. computer tech expenses	\$425
Software and code library licenses	\$1000
Computer programming assistance Student assistants: \$15*500(hours)	\$7500
System administration (18 months, further funding has to be applied for after that.) Student assistant: \$15*5(hours per week)*81(weeks)	\$6075
Personal release time to work full time on project for two quarters.	\$12000
Misc. expenses, Books, manuals etc	\$1000
Sum:	\$35000