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2011 VISWEEK ART SHOW

IEEE VisWeek 2011 Conference
Rhode Island Convention Center
Providence, RI

A juried exhibition of work from leading artists and artist-scientist teams collocated with a featured exhibition of 10 years of creative information design and mapmaking by Maxwell Roberts.

VisWeek Art Show Co-Chairs and Curators:
Daniel F. Keefe, University of Minnesota
Bruce Campbell, Rhode Island School of Design

FORWARD

Art and visualization have always shared a close relationship. Today, that coupling seems closer than ever. Traditional and new media artists are redefining the way that we view science and information, while experts in science, medicine, analytics, informatics, and visualization are impacting art practice through new ideas, technologies, and collaborations. The VisWeek 2011 Art Show aims to showcase the exciting and increasingly prominent intersections between art and visualization while fostering new thinking, discussion, and collaboration between artists, designers, technologists, visualization scientists, and others working at the intersection of the fields.

The thirteen artists and collaborative teams highlighted within the VisWeek 2011 Art Show include painters, printmakers, sculptors,

multimedia artists, digital photographers, video producers, interaction designers, and procedural algorithm explorers. Most wear multiple hats as they engage with information, science, and technology and team with sci-

entists and technologists to push the boundaries of their discipline(s).

The show begins with a detailed exploration of graphic design and creativity through an exhibition from the ongoing series of urban rail network maps created by artist, designer, and psychologist Maxwell Roberts. Moving off the printed page, Anya Belkina shows us a radically different interpretation of geographic information, fusing the locales of Moscow and Boston in her 12-foot-tall suspended inflatable sculpture. Bill Seaman and Todd Berreth highlight the tension of a country rapidly changing through a dynamic collage of spoken word coupled with video, 3D models, and musical passages. Mark Cypher shows us the notion of a house as a complex ecology, drawing upon multiple data sources to move from more traditional renderings in Euclidean geometry to an evolving form in constant movement. Creatively reinterpreting fluid flow visualization techniques, Angus Forbes shows us how multiple people can simultaneously explore a visually engaging installation with interfaces that are as fluid as the underlying simulations.

Samuel Huron visualizes rhythm, bringing real-time statistical information to life by giving it a visual heartbeat that can be examined critically. Johann Habakuk Israel shows us results from creative use of the human hand in virtual space, a 3D sketching system. Matthew Kluber combines traditional media and new media, exploring new dimensions of color and time by fusing digital projection with physical painting. Studio Frido (Charles Keller, David M. Weinstein, Suresh I. Prajapati) and Jens Krueger make the complexity and beauty of the natural world accessible through scientific imaging, combining smart aesthetics with microscopic computed tomography. David Paulsen and Pinar Yoldas show us another creative interpretation of imaging data through a neuroscientific visualization in the form of a sculptural installation. Francesca Samsel (with Brandt Westing and Karla Vega) combine the latest high-end computer visualization technology with scans of traditional artwork – etchings, wood cuts, and photographs – used to fuse a human response to the 2011 Japanese earthquake with scientific data. Pushing the boundaries of computer displays, Keith Soo and Supernature Design show us a dynamic aesthetically engaging interactive liquid space. Finally, Lauren Thorson shares two data visualizations; using design to give shape to data, she creatively inter-

prets multidimensional data from the first 24 hours of spring and the black out following the 2011 Japan earthquake.

We believe this exceptional selection of work represents many of the important themes at the intersection of art and visualization today: creatively-mapping space and time, reinterpreting and combining traditional and new media, exploring and fusing new interfaces and displays, and examining the human element in the context of data. Throughout the art show organization and jurying process we have continued to be surprised and inspired by the work presented by these artists. Our own discussions of the datasets, creative visualization techniques, and out-of-the-box thinking for presenting information to others shown here have been particularly rewarding, and we are grateful to all who have participated by submitting their work to the show and volunteering to assist in jurying and organizing. Everyone involved with the VisWeek 2011 Art Show hopes that this catalog as well as the physical exhibition can be similarly inspiring for you.

We look forward to the opportunity to discuss your thoughts on the intersections of art and visualization with the artists and other attendees at IEEE VisWeek as you share the Art Show space with us.

MAXWELL ROBERTS

Wivenhoe, Essex, UK

In 1933, Henry Beck’s diagrammatic map tamed the London Underground network. Chaotic twisting routes were replaced with simple straight lines; horizontal, vertical, or diagonals at 45 degrees only (also known as octolinearity). Since then, Beck’s design rules have been used to show transport networks around the world, and the London Underground map has become a design icon.

Why does designing a map in this way help the user? Does adopting these rules really guarantee the best design in every situation? Can these rules cope with ever-increasing network complexity? These questions have never before been answered, rarely even asked.

Maxwell Roberts has been designing maps that break the traditional rules for almost ten years, with many surprises. In objective usability studies, several designs are easier to use than official versions. However, subjective ratings of map usability are rarely correlated with objective ones; map usability and map engagement appear to be separate factors, and users in

general are poor at assessing usability. The works here represent only part of his in-depth exploration of schematic urban rail network maps; a unique investigation of design, usability and aesthetics.

Hexalinear schematic of the London Underground:

The goal of the map designer should be to simplify the network, turning the chaos of reality into simple straight lines; the fewer corners the better. Maps that attain this goal are said to have ‘good geometry’. Bad designs convert the meandering cirves of reality into a mass of zigzags. Nothing has been simplified, instead one form of complexity has been substituted for another. There are many different angle-combinations that can be used to map a network. Surprisingly, three angles – horizontal and 60 degree diagonals – suit Central London particularly well, and there are just six kinks inside the Circle Line. Nine is the smallest possible number with traditional rules. The best choice of angles depends on the properties of the network that is being mapped.

Spatially informative schematic of the London Underground (traditional design rules, octolinear):

Many users object to topographical distortion on their maps. If a precise mathematical transformation to London is applied, steadily increasing the scale towards the centre, it is possible to create a compact schematic of the Underground in which the relative positions of nearby stations are faithfully

preserved. Many users would resist such a map. It lacks the simplicity and elegance that can be obtained if topography is distorted. For schematics in which surfaced details are removed, the utility of topographical fidelity is difficult to ascertain, especially when the usability costs of poor geometry are compared with the supposed benefits. A well-designed schematic will distort topography to good effect, but offend the fewest possible users.

Schematic of the New York Subway (traditional design rules, octolinear):

The shape of the New York Subway network is not difficult to schematise, but many New Yorkers resist such attempts, and their official map is currently topographical. When designing a map, the New York Subway has some unique challenges, including ambiguous station names (for example, five 23rd Street stations across Manhattan), express and local trains, and very different services peak, off-peak, weekends and nights. This map demonstrates a number of solutions to these. Stations are double-named to resolve the ambiguities. Express and local services are given different colours, and patterns are used to denote part-time services. Even so, this is still a formidably complex map for a New York novice. Good geometry can only go so far in taming the complexities of real life.

Curvilinear schematic of the Madrid Metro:

The Madrid Metro had expanded rapidly during the last 20 years, giving one of the largest networks in the world. This moving target has given designers a unique challenge. The cur-

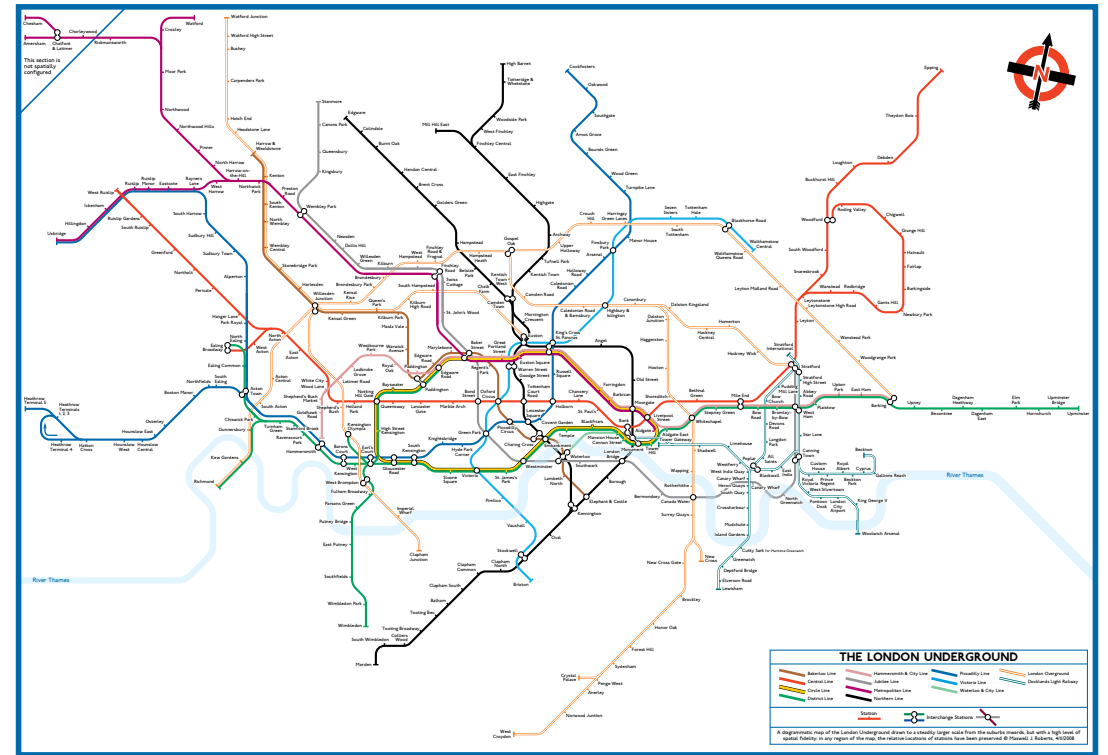
rent official map is ruthlessly angular and distorting, a particularly difficult design for users. Any map based on straight lines must have corners, and if too many of these resist eradication, an alternative is to smooth these away using curves instead. Constructed with care, the result is a flowing organic design that is easy on the eye, although geometric purists may object. In tests, planning for this all-curves design was 100% faster (on average, 2.9 journeys per minute) compared with the current official map (1.4 journeys per minute).

Rotated Tetralinear and Higher-Order Linear schematics of the Washington, DC Metro:

A new extension to Dulles Airport along with service changes will lead to a redesign of the Washington, DC Metro map. But with so many options for the designer, and so many differences in people’s preferences, what design approach should be taken? With a simple network, many different implementations can work well, and it is up to users to make their own choice. Can there be a clear preference, or do people have different, irreconcilable opinions? Two of five prototypes are shown here. For the rotated tetralinear map, using just horizontal and vertical lines and then rotating the end result, this can lead to a striking design, albeit with a high degree of topographical distortion. For the higher-order linear map, an unusual choice of angles permits a dramatic straight line for the airport extension.

For more information visit:

www.tubemapcentral.com



ANYA BELKINA

Boston, MA, USA

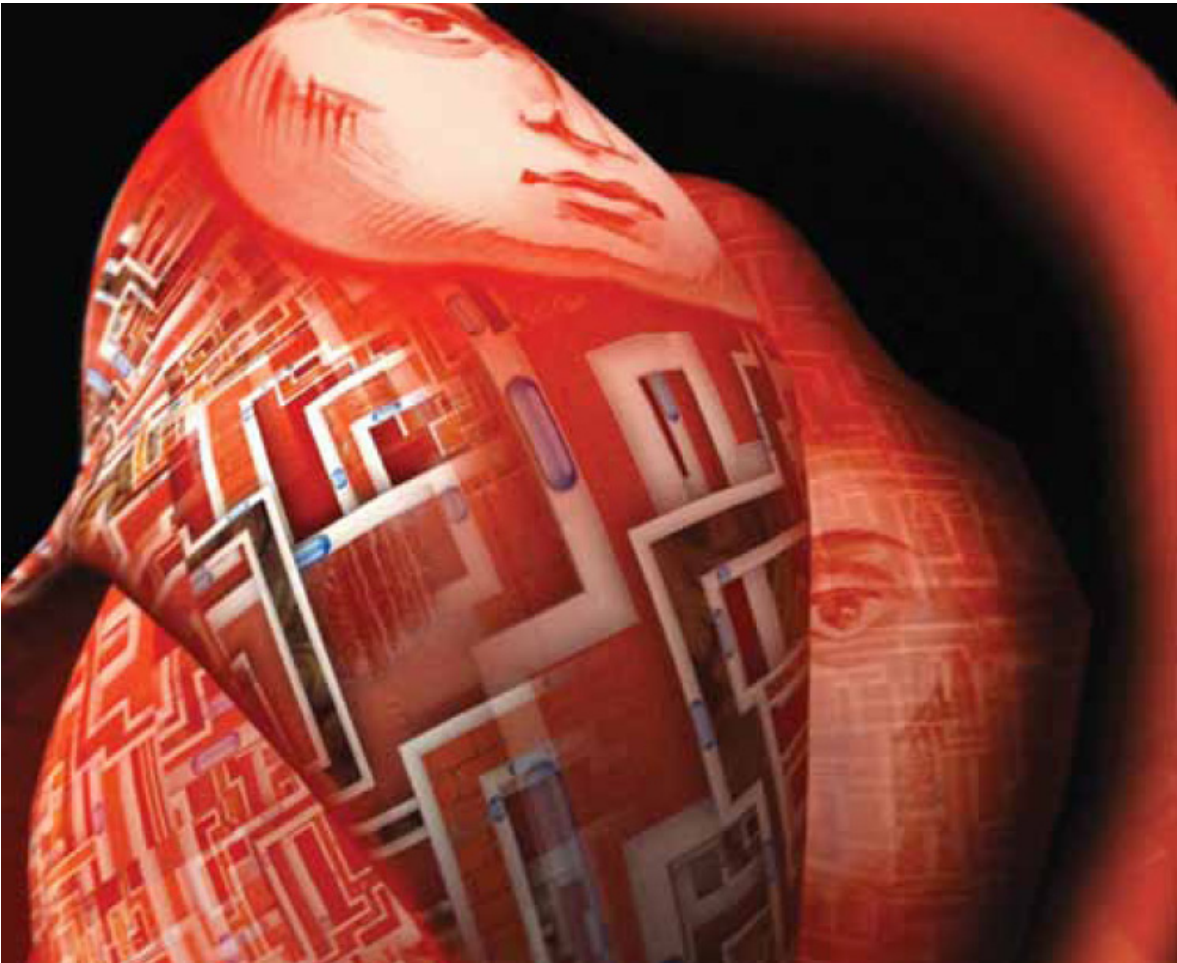
MOSTON, a 12-foot-tall suspended inflatable sculpture, embodies an internal conception of home and the cyberfusion of two geographically distant locales: Moscow and Boston. Its surface design of printed artwork and documentary footage projection explores visual and historical commonalities of the two cities, commonalities that are more easily researched, documented, and shared in the era of instant global networking.

While *MOSTON*'s three-dimensional form references ethnically specific artifacts, the visual appeal and conceptual ingenuity of matryoshkas reach audiences beyond Russia and the Russian diaspora. A universally understood symbol of sequential creation, these toys offer a fitting framework for evoking the concentric evolution of Moscow's and Boston's city armatures. The implied nestedness of *MOSTON* is also congruent with the layered mental construct of "home," especially as perceived by individuals with multicultural backgrounds.

In my art, I incorporate ideas and observations stemming from bicultural

experience, and the larger issues of identity, immigration, and globalization. Through my work, I attempt to fuse art with inquiry in the areas of biology, physics, and computer science. The scale of my projects feel essential to my expression - not only because my motherland is the largest country in the world, with an impressive record of pursuing hopeless megalomaniac ventures, but also because "there is no place like home."

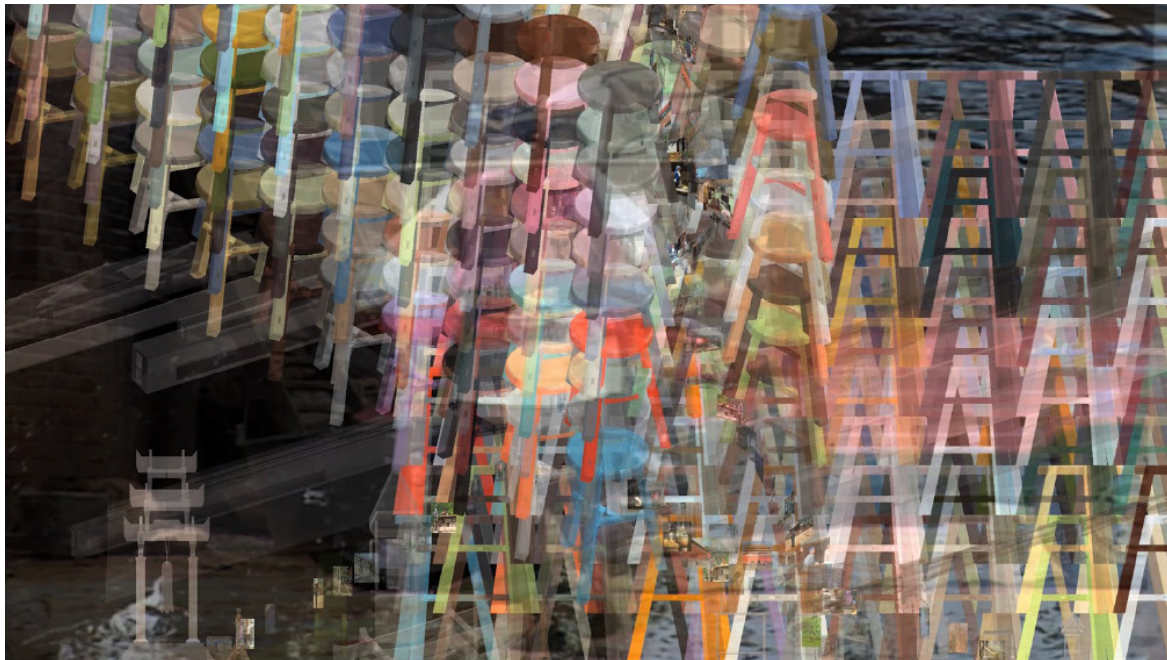
For more information visit:
anya_belkina@emerson.edu



Anya Belkina

MOSTON, 2011

Projection on inflatable sculpture



BILL SEAMAN / TODD BERRETH

North Carolina, USA

A China of Many Senses specifically juxtaposes imagery from China's past and present, highlighting the tension of a country rapidly becoming the world's industrial powerhouse, while coexistently maintaining many of its ancient modes of existence. It frames, orders and builds with these materials, using a vocabulary and grammar of designed behaviors and construction typologies, diagramming and displaying the permutations with standard modes of architectural representation. The effect is to create a projected virtual space with a dizzying sense of logic, scale and balance - an imagined organic and built landscape at once both regimentally ordered and colossally haphazard, filled with both epic and intimate construction and permeated with history.

Methods

The artwork is driven by a software engine, written in C++ and OpenGL. In real-time, it recombinately composes a library of disparate elements, video and image content, spoken-word phrases, 3d models and musical passages, into an evocative dynamic collage, media landscape and hyper-

constructed assemblage.

Theoretical Framework

A China of Many Senses specifically explores the aesthetic potential of utilizing standard architectural visualization techniques and an algorithmically modulated, database-driven virtual environment to create a dynamic poetic space, which may provide suggestive and often unexpected insights into an incredibly relevant and interesting contemporary condition. The artwork, in its combinatory strategies, synthesizing multi-modal data, provides a useful example to discuss visual analytics and "the application of visual environments to generate useful insight about real-world problems.

For more information visit:

athanasius.trinity.duke.edu/projects/acoms/acoms.html

MARK CYPHER

Perth, Western Australia

A house, for all intense purposes, looks like a static object. But a house is actually in constant movement, made up of and indeed constantly altered by many intersecting and dynamic interests from both within and without. In this way a house is seen as a navigation through a negotiated datascape, and a contested gathering of many conflicting demands. This work attempts to show how various trajectories of data that surround and indeed intersect with a house render it as a moving project.

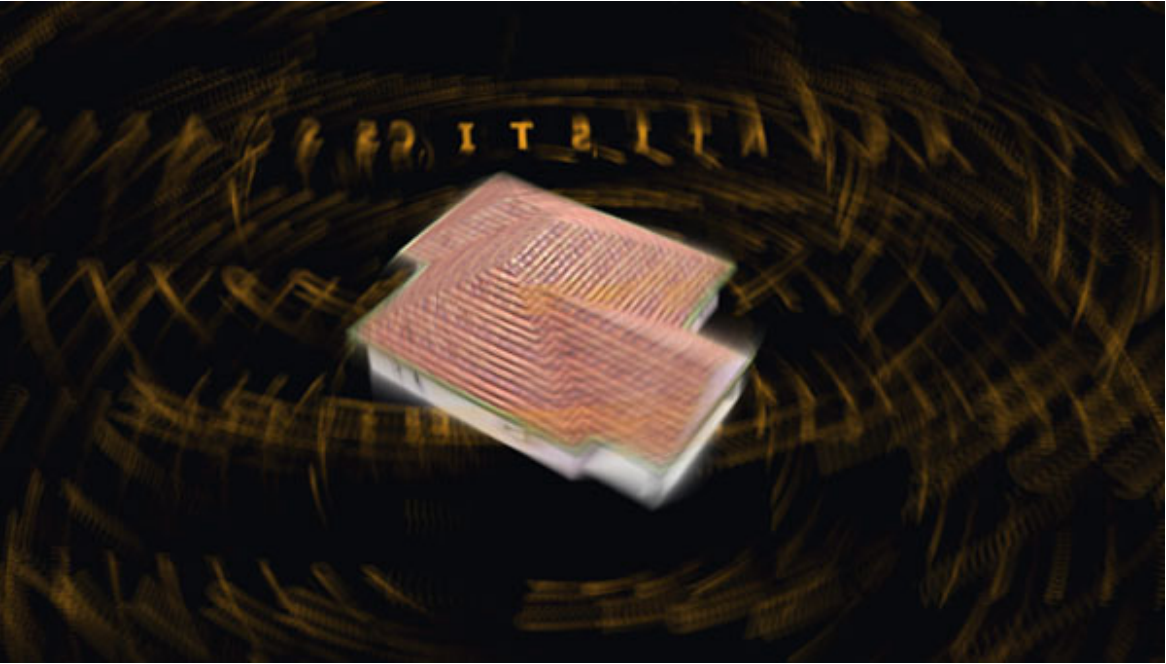
When a house is examined as a collective thing, run through with the trajectories of competing interests, it begins to take on the aura of something more like a complex ecology than a static object. To consider a house as static, is to hold it frozen in representation as if wrapped in cling wrap and thus separate from those ‘external’ connections that make it a house. As Yaneva and Latour state (2008 p87),

Everybody knows—and especially architects, of course—that a building is not a static object but a moving project, and that even once it is has been built,

it ages, it is transformed by its users, modified by all of what happens inside and out side, and that it will pass or be renovated, adulterated and transformed beyond recognition.

If houses are being constantly altered by a whole host of agencies and indeed maintain their social status as houses because of its interaction with these actors then why are they drawn as static objects? Static drawings rendered in Euclidean geometry are incomplete descriptors of a house because they reinforce the illusion of an objective distance and dismiss so many other important actors, influences, materials and dimensions. A house’s truest form must therefore be one that is in constant flux, forever subject to the wilful vagrancies of those actors in which it must constantly transact in order for it to maintain its shape - and be called a house.

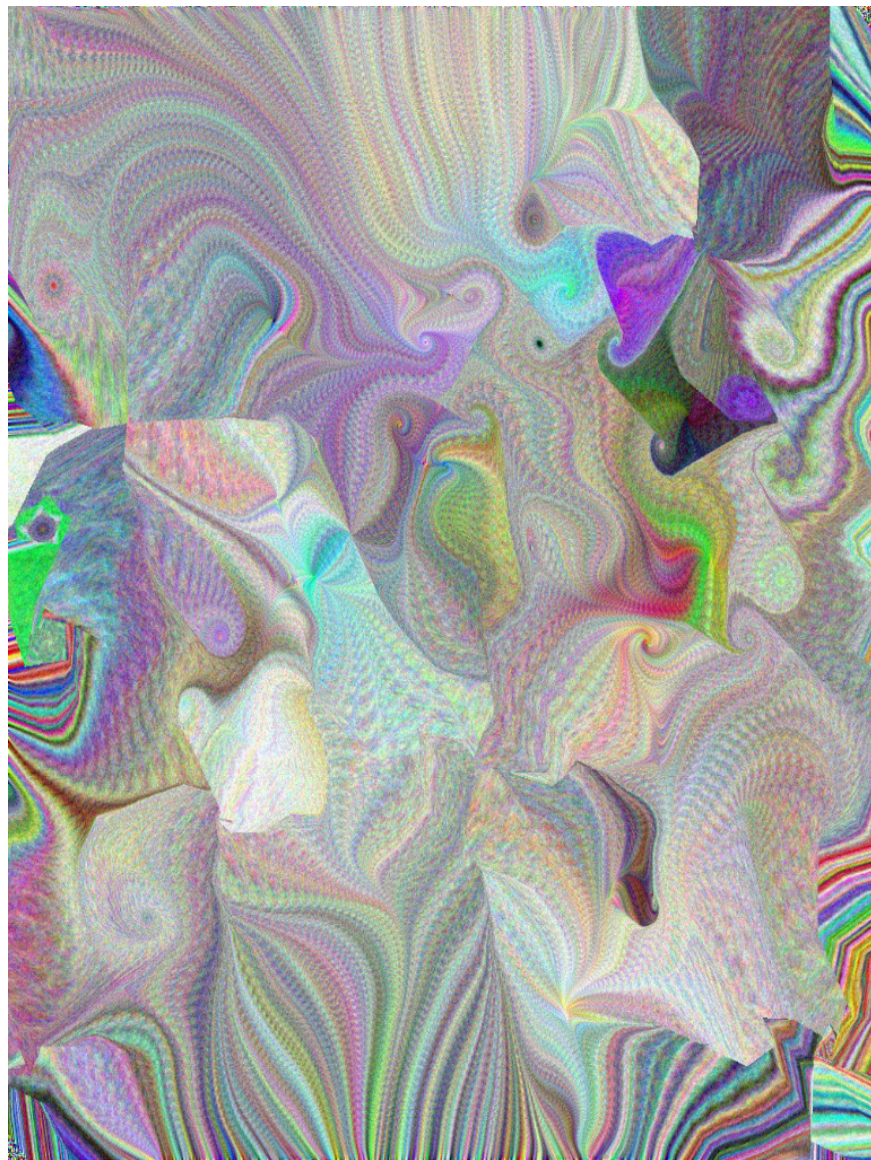
For more information visit:
www.markeypher.com



Mark Cypher

There’s no place like house, 2011

Blog Data, Weather Data, Sound Data, Various local government Data sources, Games Engine



ANGUS GRAEME FORBES

Santa Barbara, CA, USA

Fluid Automata is a participatory installation that allows multiple users to simultaneously manipulate the dynamics of an interactive fluid system. The colored fluids are projected large-scale on a wall. Using the iPad tablet's touch screen, users direct energy through the system and can adjust parameters that control the visual and physical aspects of the fluid.

Fluid Automata uses a custom technique to simulate the propagation of energy through the fluid dynamics system. These fluids are then visualized using an image-based, GPU-accelerated version of a method first described by Cabral and Leedom in the paper, "Imaging Vector Fields Using Line Integral Convolution," published in the SIGGRAPH proceedings in 1993.

The dynamics of fluids are governed by interlocking, non-linear relations between forces of pressure and momentum and the intrinsic properties of density and viscosity. Through perturbations from external forces, ornate contours of flow are created as the system, obeying laws of conservation, resolves to a state of uniform pressure.

My interactive artwork invites participants to engage in aesthetic interactions through the exploration of complex systems. By developing new techniques to visualize and interact with these systems, I aim to facilitate a palpable awareness of the various arrangements into which complex systems can organize.

For more information visit:

<http://www.fluidautomata.com>

<http://www.mat.ucsb.edu/~a.forbes>

SAMUEL HURON

Paris, France

The principle of this work is to display statistical information as rhythms. The visualization is divided into a series of squares, each square representing a statistical fact or a series of facts (e. g. a heartbeat). Each square blinks in real-time according to the natural occurring rhythm of the fact it represents. Squares are positioned and sized subjectively in the display. By inverting the synthetic process of visualization, the author questions the relation between noise and information in our world.

The visualization represents different types of real-time statistical information like:

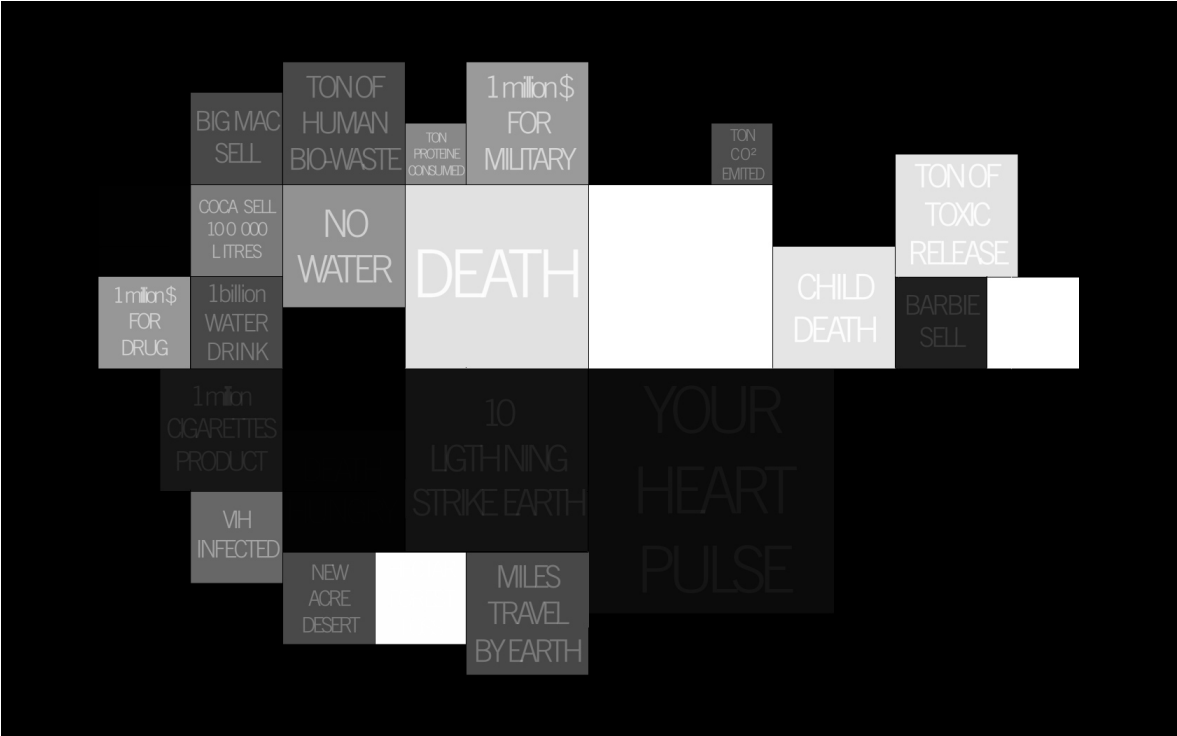
- The average number of births, deaths, in the world, of human heart beats...
- The number of Barbie dolls and Big Macs sold, of children starved to death, of children who become obese ...
- Military and Education budget expenditure (in millions of Dollars) ...

I generally use and combine several digital techniques for defining my work but do not follow a systematic work pattern. My work has been

mostly influenced by information and communication technology. My work tends to explore the modality of an “actualization” process of the virtual. By “virtual” I refer to the scholastic definition: “a tree is virtually in a seed” and not the definition in which “virtual” is opposed to “real”. Actualization is the process of making the virtual happen - for instance when a webpage is refreshing. At this very instant something really interesting happens: the digital data takes a human readable shape. Actualization is the process and the instant of the instantiation of something virtual (information, model, theatre script...) in the world. I try to understand this very instant.

This piece *Noise of...* is about the feeling of absurdity when faced with several events in the world that are defined through statistics. The purpose of this piece is to show what is happening now in a critical way. Feeling the instant and rhythm of events changes the relation and distance to the information. I just select it, process the rate of an event, and represent it. The only objective information is its rhythm. This work does not try to make a synthetic view, but instead attempts to represent feelings of complexity.

For more information visit:
www.cybunk.com



Samuel Huron

Noise of ... , 2008

2m x 1.5m, Video projection (program and statistics)



Johann Habakuk Israel (with Christian Zöllner, Alexander Müller, and Sebastian Piatza)

Sketching in Space, 2009-2011

2.5 m x 2.5 m x 2.5 m, 3-D sketches in an immersive virtual reality environment (CAVE)

JOHANN HABAKUK ISRAEL

Berlin, Germany

Sketching in Space demonstrates a product development cycle using immersive sketching in virtual reality, traditional computer aided design and rapid prototyping, and demonstrates two exemplary projects. The aim of the work is to envision how designing and modeling changes when conducted in immersive three-dimensional environments. The system used allows the creating of strokes, sketches, drawings and shapes in a virtual environment, using physical tools (i.e. tangible interfaces) such as pens, bi-manual modeling tools and pliers. It allows to perception of a sketch as floating in space, directly where it was created.

Immersive sketching can be regarded as a new design tool which provides new creative and aesthetic possibilities. It allows users to perceive themselves and their sketches in the same physical space and to experience the sketch in relation to their own body; the users act directly within the medium.

Furthermore, by creating large sketches in one-to-one scale and walking around one's own' models,

the whole body is involved and the process is turned into an interactive, embodied experience. Users can also apply existing motor skills for free-hand sketching; they are not bound to modelling functions and interaction devices of desktop-based CAD-tools. We emphasise the whole body interaction as one of the premier qualities of immersive sketching because we experienced that motor and haptic involvement is essential for creating objects, especially for those objects which are drawn in one-to-one scale and in relation to one's own' body, e.g. furniture, lamps, sculptures, and interior. Users often not just sketch but interact with the sketched models and explore the objects by touching virtual parts and moving their hands across the virtual surfaces.

Our studies also revealed that immersive sketching is not a stand-alone tool but needs a balanced interplay with common design tools such as pen-and-paper, CAD and physical prototypes in order to enhance the design process substantially. We found when these design tools are present, users tend to keep parts of their original free-hand 3-D sketches in the final design, smoothening, modifying or replicating others and creating additional CAD elements.

For more information visit:
www.francescasamsel.com

MATTHEW KLUBER

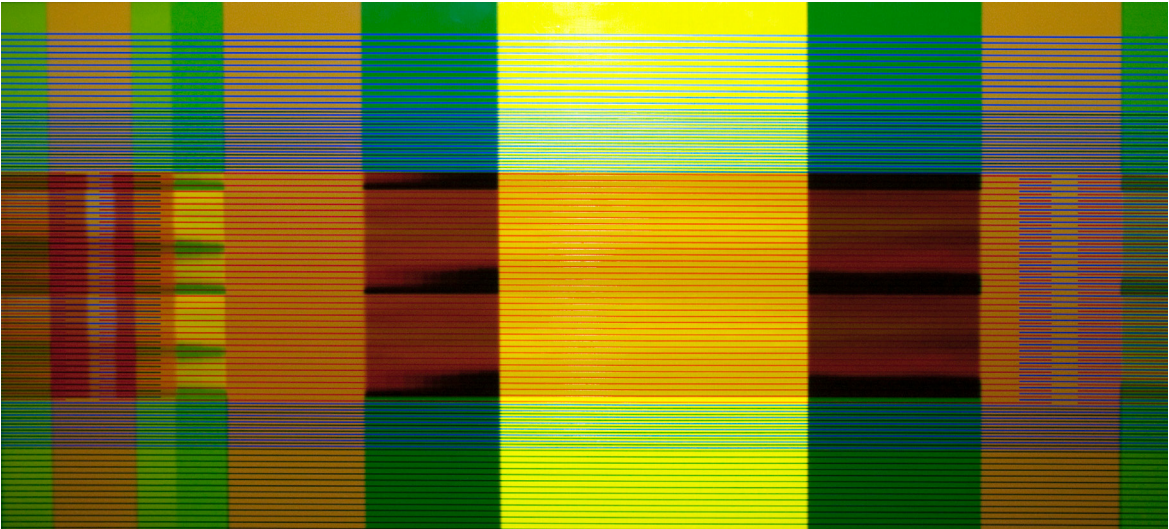
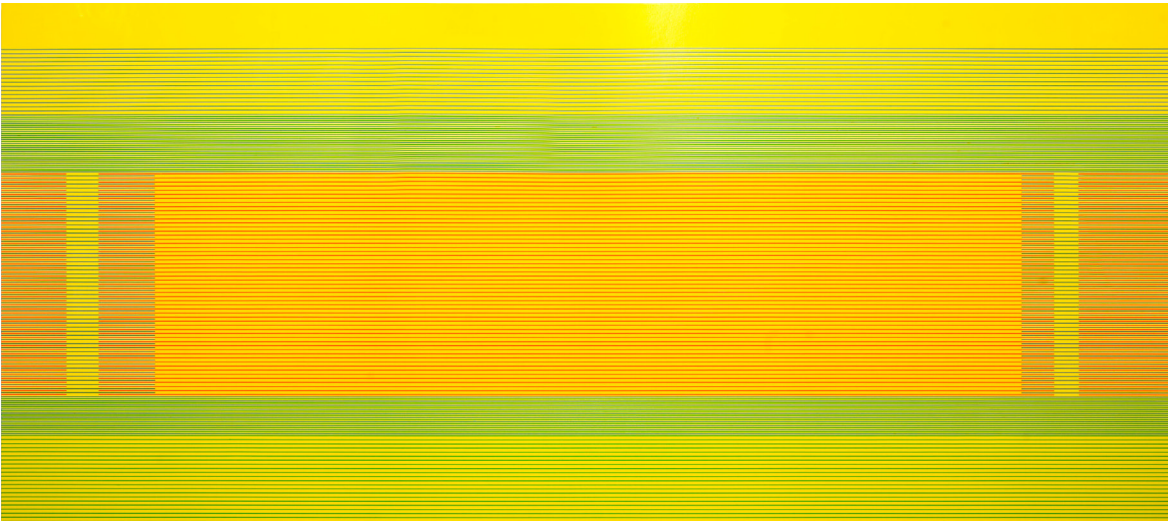
Cedar Rapids, Iowa, USA

This work investigates the intersection of painting and digital technology, locating itself at the point where the physical world (traditional media) meets the virtual world (new media). At this intersection the ephemeral, un-located space of digital video is attached, by means of projection, to the fixed object of a painting; illuminating and imparting it with codederived content, a new color space, and the element of time to construct a hybrid-visualization experience.

The paintings are composed of linear, geometric elements that reference the narrow, colorful, horizontal bands of data - signaling a crash - that had frequently filled the screen of my (former) computer. This downside of digital technology, its flaws and defects, provided a unique visual experience and became an unexpected, rich source of imagery. The thin horizontal stripes refer to that imploding data, while the picture plane alludes to the computer screen – resulting in a carefully edited version of a visual phenomenon normally associated with the breakdown of a system.

Reference points for this work have come from my interest in the historic changes brought about in art by the social and cultural upheavals and rapid developments in science and technology in the 1960's and 70's. These changes compelled a new generation of artists to address emotional disengagement, formal rigor, and anonymity of authorship in order to escape the art that had reached its height of influence in the form of Abstract Expressionism. In particular, I have had a long interest in the color-field painters Kenneth Noland, Gene Davis and Morris Louis, as well as light and space artists James Turrell, Robert Irwin, and Dan Flavin. They sought to dematerialize the art object; their work diffused the luminous effect of color so that the boundaries of the frame and material substance seemed almost incidental to the perceived intensities of continuous color and light sensation.

For more information visit:
www.matthewkluber.com



Matthew Kluber

Firewire Picture: Half-Day Closing, 2011

32" x 72", Alkyd on aluminum,
custom software, computer,
digital projection



Studio Frido (C. Keller, D. Weinstein, S. Prajapati) & Jens Krueger

Frido Viewer (Art for the Science-Inspired Mind™) , 2011

Handheld Computing with or without pocket LCD projector (3 x 3 x 3 meters)

STUDIO FRIDO (CHARLES KELLER, MD; DAVID M. WEINSTEIN, PHD; SURESH I. PRAJAPATI, MSC) AND JENS KRUEGER, PHD

Portland, OR, USA

Microscopic computed tomography permits non-destructive inspection of the inner structure of objects with incredible detail (on the order of 1/10th the thickness of a human hair). Using x-rays to take multiple 2-dimensional pictures of an object at different angles, computed tomography generates a three-dimensional virtual reconstruction of the original object that can be viewed at variable levels of transparency. State-of-the art computer science visualization tools then enhance inner features based on not only their density but also their curvature and edge sharpness. These scientific tools, though sophisticated, nonetheless simplify the way we view common objects, bringing out both the magnificence and simple balance that nature (and man) have created in the blessed world. This App for the iPhone and iPad makes this inner world available to take a quiet moment and make it a science-inspired one. A key feature of the App is the friendly competition of the Visualization Artist and the biomedical Scientist. Another key feature is the ability not only send imagery of the art created with the app but also embed the parameters used to gener-

ate this imagery, so that the recipient of the email can continue to explore the hidden wonders around us.

Frido* is a physician-scientist and geneticist passionately dedicated to bringing the inner beauty of life's natural and man-made wonders to all of us. Through his scientific training, clinical experience, travels, acquaintances and friendships, Frido has gained an appreciation for small undiscovered details and novel outlooks. In many ways, Frido embodies the diversity, conflicts, and harmonies within all of us. Keeping close the traditions of his clinical and scientific training, Frido apprentices a small group of scientist-artists in his philosophy, style and techniques, through Studio Frido. Among the artists are engineers, physicians, biologists, and computer scientists dedicated to his vision. Studio Frido hopes that the art in this App brings you to a greater understanding and appreciation of the commonplace objects in your life, and reincarnates the childhood wonder for the natural world in all of us.

* pseudonym

For more information visit:
www.studiofrido.com

DAVID PAULSEN & PINAR YOLDAS

North Carolina, USA

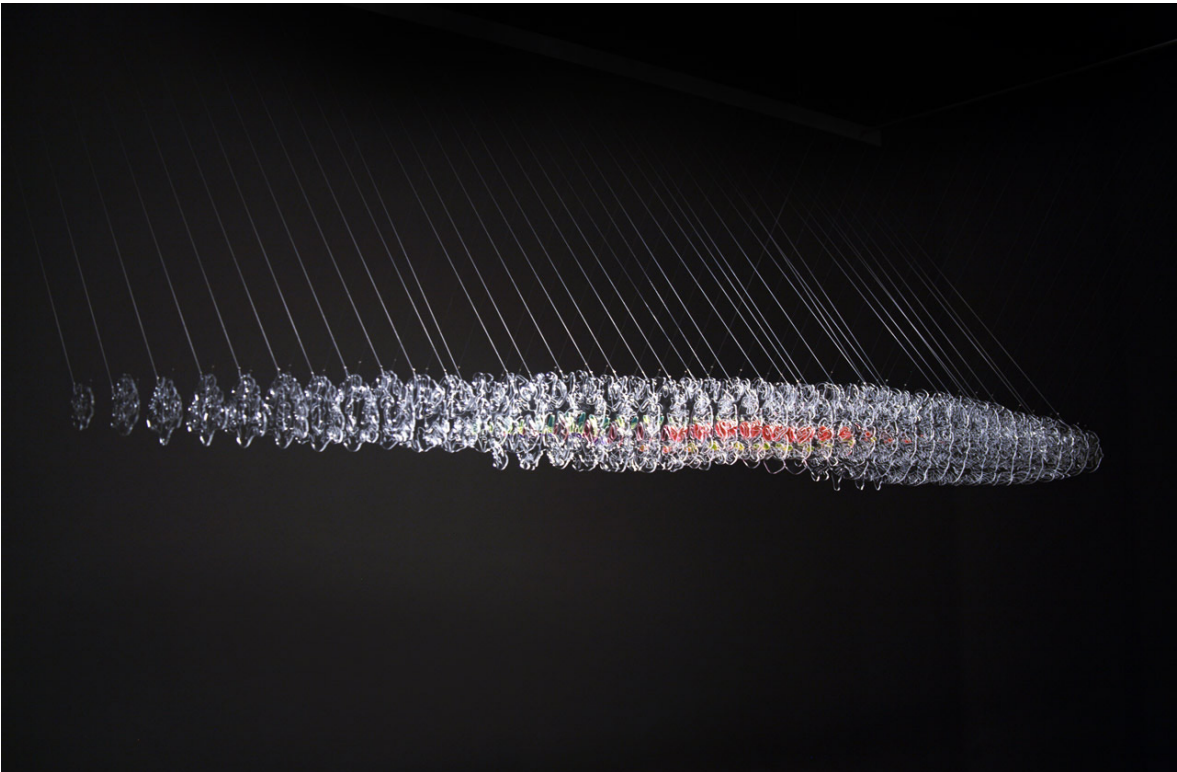
Limbique is a neuroscientific visualization project in the form of sculptural installation, uncovering a hidden but important constellation of brain structures historically defined the French physician, anatomist, and anthropologist Paul Pierre Broca as le grande lobe limbique, now described generally as the limbic system. The components of the limbic system emerged early in evolutionary history, shared across animals as diverse as mammals, birds, and reptiles, and are situated deep in the brain, occluded by the voluminous gray matter of cortical surface. They leverage memories, desires, emotions, and actions, against one another in love, affection, compassion, sharing, politics, ethics, phobias, and war. Without these basic components, practically every aspect of our function would suffer.

Methods
We begin with a high-resolution (1 cubic mm) magnetic resonance image of a human brain and skull. This image is then translated into 45 two-dimensional, coronal templates for vector graphics tracings of the cortex (outer surface), the white matter/gray

matter boundaries (inner tracing), and the specific regions of interest (colored inlays). The resulting vector-based images are then used to fabricate precision acrylic renderings of each brain slice and the anatomical region of interest. Finally, the acrylic pieces are assembled and suspended according to their relative positions in brain-space.

Theoretical Framework
The methods we employ bridge artistic and scientific endeavors in at least three ways. First, our use of neuro-imaging preserves the correspondence between the structure of our model and the structure of our subject, reflecting our commitment to the integrity of the data we visualize while exposing its hidden nature. Second, our use of color documents the diversity in what to the naked eye appears as a homogeneous mass of tissue, providing depth to both the aesthetic and semiotic experience. Third, we present a bistable sculpture that, in one view, appears as a fluid display of light-shifting form, and in another view, projects centuries of cumulative knowledge from several scientific disciplines into an approachable and accessible space.

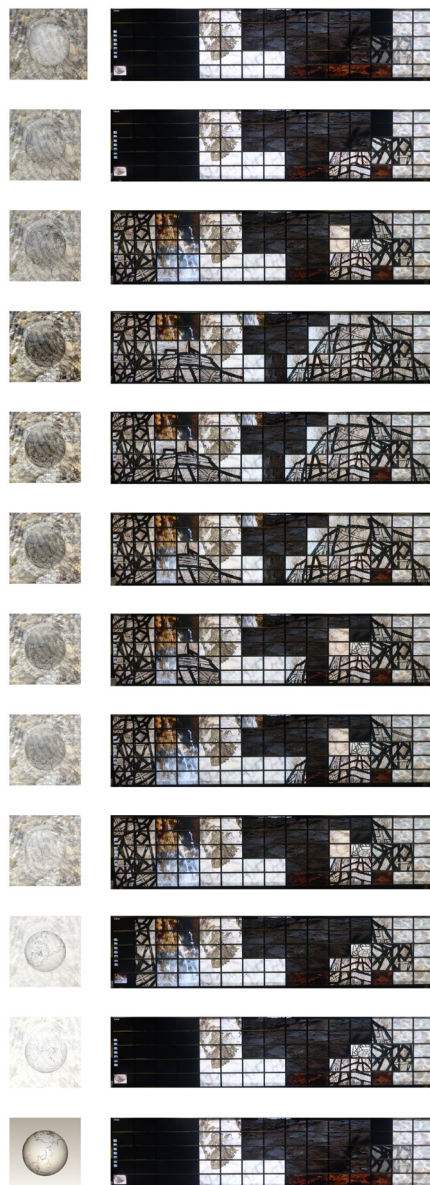
For more information visit:
pinaryoldas.info/limbique



David Paulsen (neuroscientist) , Pinar Yoldas (artist)

Limbique, 2010

4 x 8, acrylic sheets, wooden suspension bars, invisible string



Francesca Samsel (with Brandt Westing and Karla Vega)

Black Rock, 2011

52" x 22", Digital print

FRANCESCA SAMSEL (WITH BRANDT WESTING AND KARLA VEGA)

Austin, TX, USA

Black Rock is a 2-dimensional digital print presented in scroll form. The imagery is taken from a piece I produced at the Texas Advanced Computing Center, ACES Visualization Lab, University of Texas at Austin. The original is a moving compilation of imagery made from scans of my more traditional artwork - etchings, wood cuts and photographs. Many of the images are layered in photoshop before being uploaded to TACC's file system. Specifically, the grey squares on the left are layered stills created in Paraview - an etching of a fingerprint, a photograph of water and animation of the outline of the continents.

The horizontal images on the right are stills from a work I created for TACC's 75 monitor tile-display. *Black Rock* was created during the 2011 Japanese earthquake. It is a human response displayed amidst the scientific data. I am in the process of creating an animated work that combines my artistic interpretation of the event abutting a scientific visualization of the impact of the quake on the earth. A video of the animated version of this piece could be made available for the art show if

there is equipment - a large monitor or projection system - on site.

Scientists and artists both in the business of teasing understanding from the chaos of the world in which we live. Both examine small slices of the whole seeking a clarity of the larger picture. My work has long involved digging through science libraries and websites, collecting and re-categorizing the building blocks of nature. Unlike scientists who use a linear, logical approach, my process is more akin to building neural-like networks that grow organically in all directions, nurtured when used, pruned when not. At the ends of the tangles are image collections categorized by their analogous relevance to specific contemporary events.

For more information visit:
www.francescasamsel.com

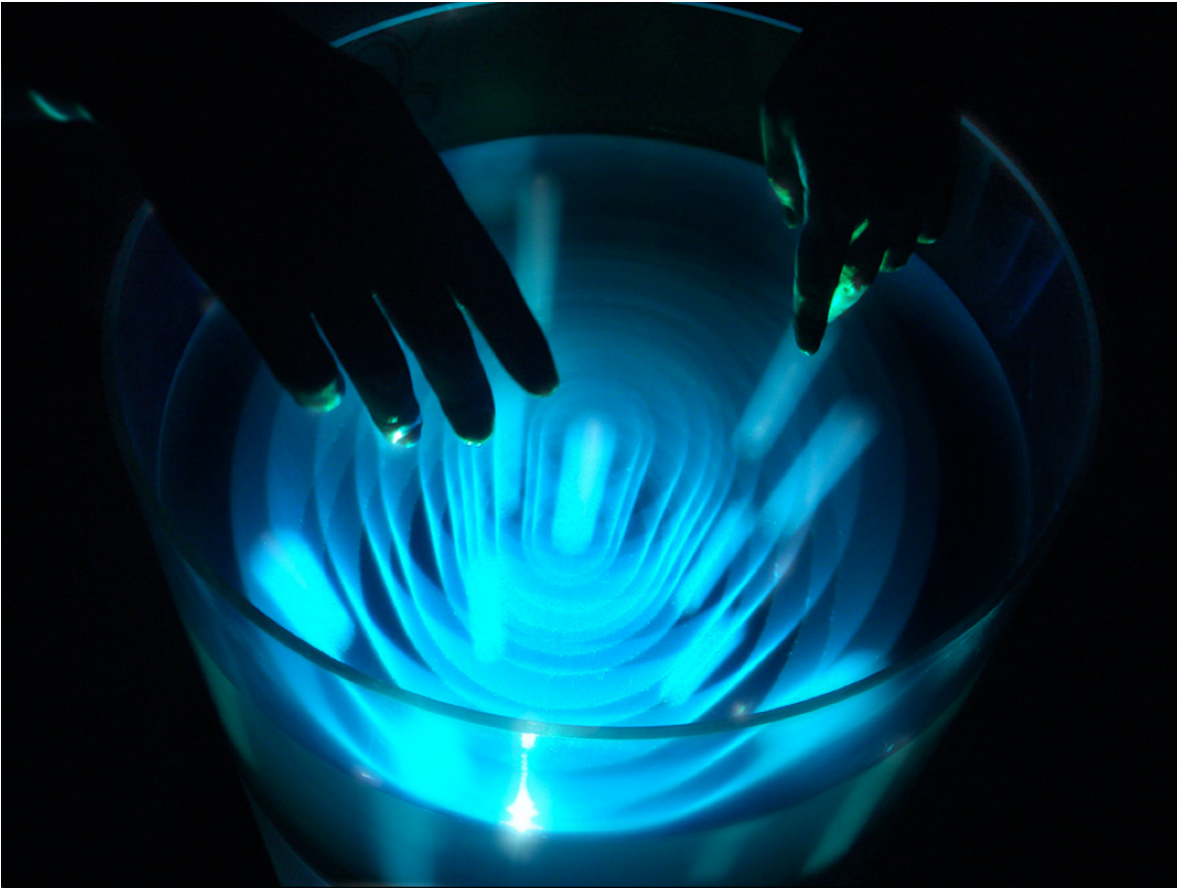
KEITH SOO & SUPERNATURE DESIGN

Hamilton, New Zealand & Shanghai, China

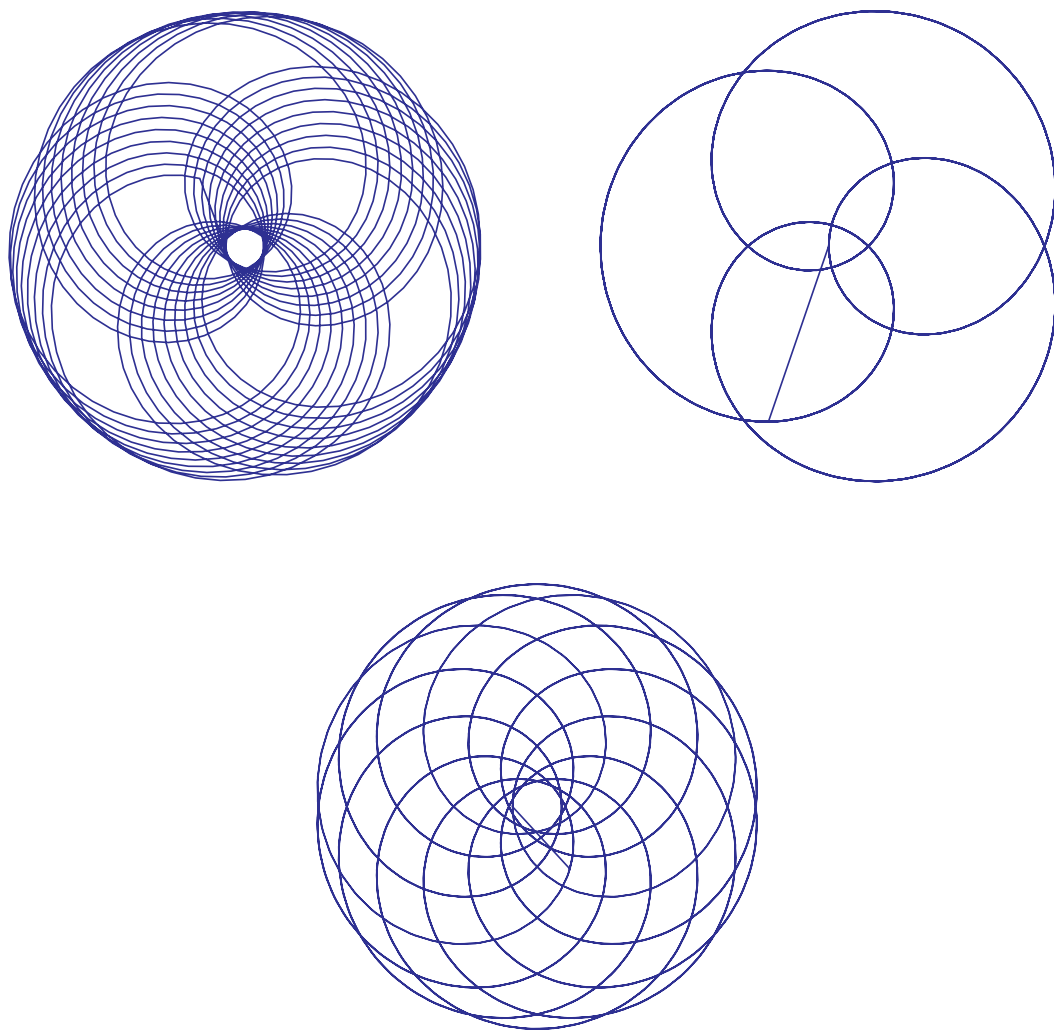
CCC is a synthesis structure of colour terminology and new vision of geometric forms that metaphor through time, space and sense of movement. The concept of the geometric forms movement was suggested to include not only kinematic movement perhaps it also projecting new independent visual manipulation in a liquid space.

We perceive colour not only in one perspective; perhaps it can be perform in a well appropriate choice of dimension, ordering and interact with time to project new way of movement. Following embedded sound interaction with visual elements on the liquid surface, it became new skin interface that generates new view and perspectives of seeing colour in many new dimensions.

For more information visit:
www.supernaturedesign.com



3 | SOO & SUPERNATURE DESIGN



LAUREN THORSON

Minneapolis, MN, USA

First 24 Hours of Spring is a data visualization in which Spirographic images were produced from data of the first day of spring, 03/21/2011.

A four variable data set taken from The National Weather Service from the first day of spring. Data such as temperature, dew point, wind speed and visibility were used to display its hourly changes for the 24 hours of March 21, 2011. The data set was transferred into Processing.org where different spirographic images were produced representing each of the 24 hours of the day. The same four variable set was then used as the CMYK values of the images, giving the spirographs appropriate color. A complex data set is presented, communicating its key-aspects in a more intuitive way.

As our experience of the world has become more multifarious and nuanced, the demands of our visual perception have increased proportionally. By using design to give shape to data, and experiment with typography, it not only challenges the viewer's visual recognition, it also provides access

and insight to the hidden patterns of meaning that are revealed.

My intent is to explore the relationship between different visualization strategies and how they relate to patterns of perception. Through my work, I am discovering complementary relationships between complex data sets and their visual representation. Thus producing sometimes surprising and informative graphic representations of data and letterforms.

Although aesthetically similar, I would consider my work different than traditional informational graphics. Whereas traditional information graphics seek to explain and show complex data in a more understandable visual representation, my work is allowing clairvoyant entry for the viewer. Making the visualization not only one of concrete data and technical process, but also allowing personal data and viewer interpretation to be just as important.

For more information visit:
www.laurenthorson.com

LAUREN THORSON

Minneapolis, MN, USA

Night Lights is a data visualization using information collected by NOAA Satellite and Information Service. The data was reinterpreted and printed with black Bic pen via mechanical plotter showing the blackout that occurred in Japan after the tsunami and earthquake that hit in March 2011.

On March 12, 2011 the U.S. Defense Meteorological Satellite (DMSP) passed over Japan and was able to detect the nighttime lights from the region. That data is shown here in comparison to the average nighttime lights of Japan taken from several DMSP satellite passes during 2010. Much lower light levels can be seen in many areas of Japan. Sendai, near the 9.0 earthquake epicenter and also the area hardest hit by the tsunami, is almost completely blacked out (this is represented in the lower portion of the print).

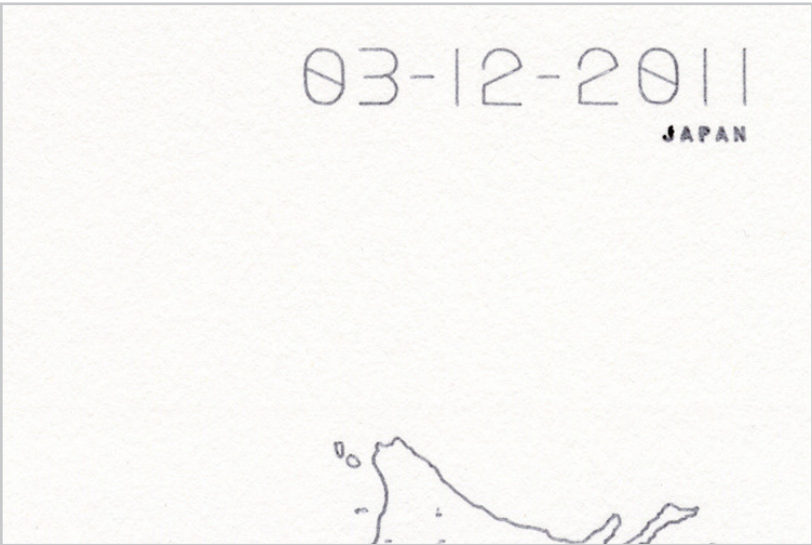
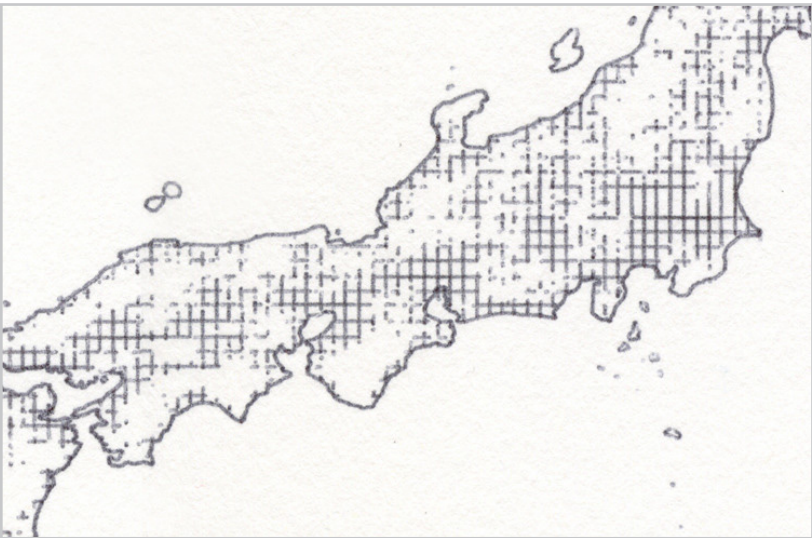
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Lauren Thorson

Night Lights, 2011

36" x 48" , Black Bic cristal pen, Mechanical Plotter

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VISWEEK ART SHOW INFORMATION
& ACKNOWLEDGEMENTS

We wish to thank all those who spent the time and effort to submit their work to the 2011 VisWeek Art Show. The jurying process was competitive and your efforts set a high bar for future shows.

We wish to thank Audra Buck-Coleman of the University of Maryland and Fritz Drury of the Rhode Island School of Design for their participation in the selection jury and their insightful suggestions for this and future years.

The art show could not have become a reality without the assistance of dedicated conference planners, the IEEE, and staff at the Rhode Island Convention Center. Thanks especially to David Laidlaw and the VisWeek organizing committee for the vision and support to create this show. Additional thanks to Jason Dykes, Shriram Krishnamurthi, Francesca Samsel and Victoria Interrante for discussion, ideas, and encouragement that helped shape the format of this year's show.

We are extremely grateful to Lauren Thorson for her tireless efforts designing this catalog. Daniel Keefe's work integrating art,

design, and science was enabled in part by the research, education, and outreach activities supported by NSF CAREER award IIS-1054783.

We look forward to seeing you at VisWeek. Please watch the VisWeek schedule for an artist-scientist “meet and greet” / “birds of a feather” session

