

Phoenix, AZ USA



Sustain & Decay IEEE VIS 2017 Arts Program

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For this year's program, we invited researchers, designers, and artists to investigate data for sustainable development, and to think about effective and provocative ways to represent complex interdependencies within and between ecological, socio-technical, political, and urban systems, as well as other types of interfaces between dynamic systems. An example of such interdependencies is what Ricardo Hausmann calls the "collective knowhow" of countries and regions. He argues that this knowhow is an important building block of the wealth of nations, and that data collection and data visualization can help to identify feasible paths for economic progress.

In addition, we encouraged the submission of projects that focus on the myriad relationships between process and artifact, and which explore the creative and practical processes required to produce data-driven artworks, visualizations, and installations. We are interested in understanding how creative works can influence and transform the way we understand the world around us, but also in articulating the processes and methodologies that generate these works. It is important to share such practical knowledge, and this year's program features projects that highlight the design process and illustrate how reflection-in-action takes place.

The featured installations and performances include work by both established and emerging media artists and designers from across the globe, including Accurat, Pierre Amelot, Owen Cornec, Scottie Chih-Chieh Huang, Yu-Chun Huang, John Hwong, Adriene Jenik, Hyomin Kim, Inhye Lee, Mick Lorusso, Giorgia Lupi, Mauro Martino, Ryan McGee, Kate McManus, Jeremy Muller, Clarissa Ribeiro, Herbert Rocha, Ozge Samanci, Philipp Schmitt, Wonyoung So, Tyler Starr, and Hendrik Strobelt. Additionally, a number of creative data visualization demonstrations are presented on the opening night of the exhibition.

This event would not be possible without the support and effort of many people, and we wish to thank Hilary Harp and Byron Lahey, our local chairs, as well as everyone on the IEEE VIS Conference Committee, especially James Ahrens, Ross Maciejewski, Gautam Chaudhary, Meghan Haley, Loretta Auvil, and Maria Velez. We also gratefully acknowledge the expert reviewers who served on the VISAP'17 Program Committee.

Angus Forbes and Jeremy Boy VISAP'17 Chairs Yoon Chung Han and Esteban Garcia Bravo VISAP'17 Exhibition Chairs





Ozge Samanci, Adam Snyder 01 Fiber Optic Ocean

Fiber Optic Ocean is a large-scale, sculptural, data driven interactive installation that generates procedural music and light from live data. Fiber Optic Ocean portrays the struggle of human beings to survive in the age of corporations via the metaphor of sharks in an ocean invaded by technology, and interprets what happens when technology invades the world's oceans.

Three life-size shark skeletons are trapped in an ocean made of fiber optic threads. The piece procedurally composes music made with trombone and choral voices generated by data coming from the GPS locations of tagged live sharks and human use of internet. The group of fiber optic cables going through the sharks blink at a rate based on speed of live sharks tracked with GPS data.





WonYoung So 02 Treepedia

A city's tree canopy is an important and integral part of urban life. However, the average citizen is often removed from understanding the distribution and make up of their neighborhood's or city's trees. How, then, can citizens be better engaged in this process so that they can play a more integral role in helping to shape the green canopies in their neighborhoods?

Treepedia aims to examine cities' greenery by developing a metric called Green View Index, thereby making it possible to see the difference between streets and cities as a whole. The Green View Index utilizes Google Street View panoramas and provides a platform by which cities can evaluate and compare green canopy coverage. Through this platform, we are able to get a better sense of how people on a street perceive the number of trees. It enables scientists, planners and citizens alike to explore the urban tree canopy and take action to improve it.





Adriene Jenik **03 "The Sky is Falling…"**

"The Sky is Falling..." is the 3rd in an ongoing series of performances that make up The Data Humanization Project.

The Data Humanization Project re-asserts the connection of data to human scale and context. In contrast to a trend towards visualizing big data, each "data humanization" performance seeks to physically translate a single datapoint so that it can be more fully comprehended. Chosen datapoints are number that trouble or baffle the artist, which she seeks to imprint within her body. The artist invites her audiences to serve as witnesses and aids.

The chose number for The Sky is Falling is a contested one: the number of civilians killed as a result of drone strikes by the US military. Performed from sunup to sundown on November 13, 2016; "The Sky is Falling..." presents edited video of the live-streamed performance.





Mauro Martino, Hendrik Strobelt, Owen Cornec

04 Forma Fluens

Forma Fluens (Latin for "flowing form") reveals an overlapping collection of drawings generated by over 100,000 authors. Each image is slightly different—in the words of William Blake, "Every eye sees differently"—but when viewed as a collection the drawings self-correct, and an iconographic image of the represented object emerges. These 100,000 people work as one, obtaining a dynamic, unfinished effect, which nonetheless is able to convey life-like objects. That is, this crowd-generated drawing lets each form flow—forma fluens.





Scottie Chih-Chieh Huang, Yu-Chun Huang 05 The Ghost in the Dandelion

The Ghost in the Dandelion is an interactive installation that incorporates physiological measurement. A biosensor analyzes a viewer's facial expressions and converts them to a poetic visual representation in the form of animated dandelion, displayed on a mirrored surface. The mirror both reflects the image of a person and also functions as a presentation screen. Using a generative algorithm, the animated dandelion "blooms" once it perceives a viewer standing in front of the screen, showing a range of diverse forms and behaviors that are controlled by the viewer's expression. These visual patterns emphasize the symbiosis of data visualization and human mirroring.







Philipp Schmitt 06 Computed Curation

Computed Curation is a photobook created by a computer. Taking the human editor out of the loop, it uses machine learning and computer vision tools to curate a series of photos from an archive of pictures.

Machine learning based image recognition tools are already adept at recognizing training images (umbrella, dog on a beach, car), but quickly expose their flaws and biases when tasked with more complex input. In Computed Curation, these flaws surface in often bizarre and sometimes poetic captions, tags and connections. Moreover, by urging the viewer to constantly speculate on the logic behind its arrangement, the book teaches how to see the world through the eyes of an algorithm.

In this sense, Computed Curation is not a data visualization in the most literal way, but a piece of data art offering a glimpse into the metrics, aesthetics and poetry of machine learning, computer vision and their visualization tools.







Tyler Starr 07 KKK Redress Papers

KKK Redress Papers: Identification of Cars Participating in Klan Rally at Montgomery Alabama, March 21, 1965 is a site-specific work visualizing a 92-car motorcade organized by the United Clans of America, Inc. that the FBI linked to the murder of civil rights worker Viola Liuzzo on March 25, 1965. The form of this work takes advantage of the immersive effects of panoramas. Google Maps was used to accurately retrace the parade route on the contemporary Montgomery cityscape. Screen grabs were then tiled together and edited to create the correlation between vehicles and the projection of racist ideology through city streets with architecture revealing layers of history.







Clarissa Ribeiro, Mick Lorusso, Herbert Rocha

08 Interstellar: Cross-Scale Space-Scapes

Conceived as a peaceful and playful exploration of the interstellar space, this augmented reality and sound installation invites the audience to access the experiential dimension of space technologies and to explore how the huge amount of data derived from space exploration can be appropriated and integrated into the artist's poetics. Walking through the installation holding an iPad mini, the audience will find themselves immersed in a soundscape populated with 3D models derived from actual microscale images. The 3D models were generated via parametric design strategies from NASA Stardust Discovery-class mission's image database of aerogel samples, which have captured cosmic dust particles. The mission was the first to return samples from a comet and from interstellar space.













Giorgia Lupi
11 Accurat Design

Giorgia Lupi co-founded Accurat, a data-driven design firm with offices in Milan and New York where she is the design director. She received her M-Arch at FAF in Ferrara, Italy, and earned a PhD in Design at Politecnico di Milano. She relocated to New York City from Italy where she now lives. She is co-author of Dear Data, an aspirational hand drawn data visualization book you will find in bookshops in the US (Princeton Architectural Press) and UK (Penguin Random House UK). The original set of postcards has been recently acquired as part of the permanent collection of the Museum of Modern Art. She recently gave a TED TALK on her Humanistic approach to Data, and is presenting the Capstone Address at IEEE VIS 2017.











Demonstrations



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Pedro Cruz Wage Inequality in Portugal



Sustain & Decay IEEE VIS 2017 Arts Program

The IEEE VIS 2017 Arts Program takes place at the Phoenix Convention Center in Phoenix, Arizona during the first week of October 2017.

Sustain & Decay Exhibition Opening Tuesday, October 3rd, 6:30pm-9pm, Room 301-A

Papers Track, Session 1 Wednesday, October 4th, 8:30am-10:10am, Room 101-ABC Session chair: Jeremy Boy

Adapted Dorling Cartogram on Wage Inequality in Portugal Pedro Cruz

Understanding People's Interaction with Neural Sci-Art Manuela Garreton, Karina Hyland, and Denis Parra

Visualizing Causes and Effects of California Sea Lion Unusual Mortality Event (UME)

Yoon Chung Han, Praful Surve, Subin Kim, and Josh Cuellar

Papers Track, Session 2

Thursday, October 5th, 8:30am-10:10am, Room 101-ABC Session chair: Angus Forbes

Spatial Reliefs: Cross-Scale Space-Scapes Clarissa Ribeiro, Mick Lorusso, and Herbert Rocha

Fiber Optic Ocean: Merging Media for Data Representation Ozge Samanci and Adam Snyder

Using the Interaction Geography Slicer to Visualize New York City Stop & Frisk Ben Rydal Shapiro and Francis A. Pearman, II

3D Visualization of Genetic Networks Using Diverse Art Materials Jennifer Weiler and Kat Fowler

Dear Data Studio with Giorgia Lupi Thursday, October 5th, 4:15pm-5:55pm, Room 103-A

VISKids and VISAP jointly present a special event with the VIS capstone speaker Giorgia Lupi, an award winning information designer who co-founded and is design director of the data-driven design firm Accurat. Giorgia is co-author of Dear Data, an inspirational hand-drawn data visualization book. She brings the spirit of this book to VIS in a live participatory visualization session. Giorgia will guide participants through the process of manually visualizing data through drawing, following the visual language of different abstract paintings.

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