

IEEE VISΔP'21

DIS/CONNECTED

IEEE VIS 2021 Arts Program

Virtual, October 24-29, 2021

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DIS/CONNECTED

The works and performances featured in the virtual exhibition and documented in this catalog speak to the theme of Dis/connected. We invited and received submissions that reflect the many different ways in which the dis/connection is formed, discovered, created, enacted, and changed by visualizing data in all broader meanings and scopes.

Feeling a connection is a core human need. As social beings, we naturally gravitate towards and seek out genuine connections with others in our natural environment and social communities. When neglecting such needs, we often put the health of ourselves, our communities, and the world at risk. Technology has helped people overcome obstacles of distance, language, and social status to stay connected, and yet our society is divided as a result of cultural barriers, religious beliefs, or simply different political positions. During the Covid-19 pandemic, our abilities to maintain connections with others are further tested. While we are connected through technology, issues such as health equality and social justice have revealed the disconnections and divisions among us. Understanding such disconnections in our polarized world and building relations that lead to mutual understanding and respect have become a pressing mission of our communities.

Within this year's theme "dis/connected" we invited visualization works that question what the meaning of the dis/connections is in a broader spectrum. VISAP '21 proposes a space to reveal causes of disconnection, investigate ways of building and maintaining connections with others in our changing societies, cultures, and environments. While these themes are best explored, as many art exhibitions, through physical interaction with both the pieces and other audience members, for the second year in a row VISAP takes place virtually. This has prompted authors to think about creative,

alternative ways of presenting their work and engaging their audience. We thank the artists that persevered through challenging situations to complete their works, as well as those who spent their invaluable free hours reviewing and piecing the VISAP '21 program together.

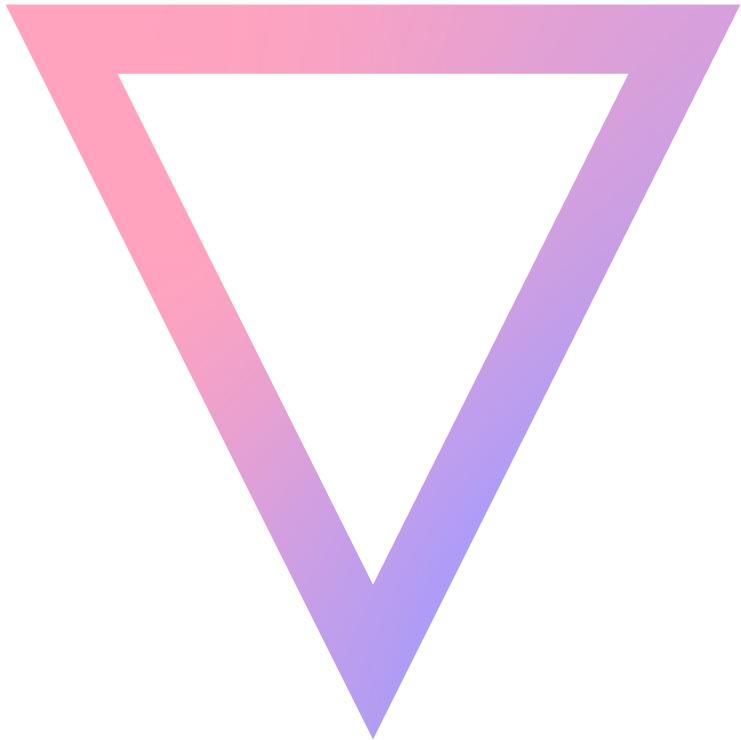
Now in its ninth year, VISAP continues to thrive as a proud associated event to IEEE VIS thanks to a large web of supporters. This year was an especially collective effort as we all dealt with the dual challenge of moving all events online and fiscal constraints. We are thankful for the ongoing logistical support of the IEEE VIS Conference Committee -- particularly the generous assistance of Brian Summa, Luis Gustavo Nonato, Will Usher, Gautham Chaudhary, Maria Valez, the Tech and Web Committees, and the student volunteers; the VISAP Steering Committee and outstanding group of expert reviewers that form the Program Committee; and the willingness of our artists and designers to adapt their submissions to a very different situation. We gratefully acknowledge the students who stepped in to help us with the VISAP visual identity, web and social media presence: Bon Adriel Aseniero who designed the visual identity and website, Nicole Wei who designed the beautiful catalog for this year's exhibition, and Sakina Damani who kept VISAP at the forefront of people's minds with regular social media posts.

Yoon Chung Han and Charles Perin
VISAP'21 General Chairs

Rebecca Ruige Xu
VISAP'21 Exhibition Chair

Bon Adriel Aseniero
VISAP'21 Design Chair

<https://visap.net>



IEEE VISAP/21

Exhibition

Not Suitable for Breathing

Zhouyang Lu

2021

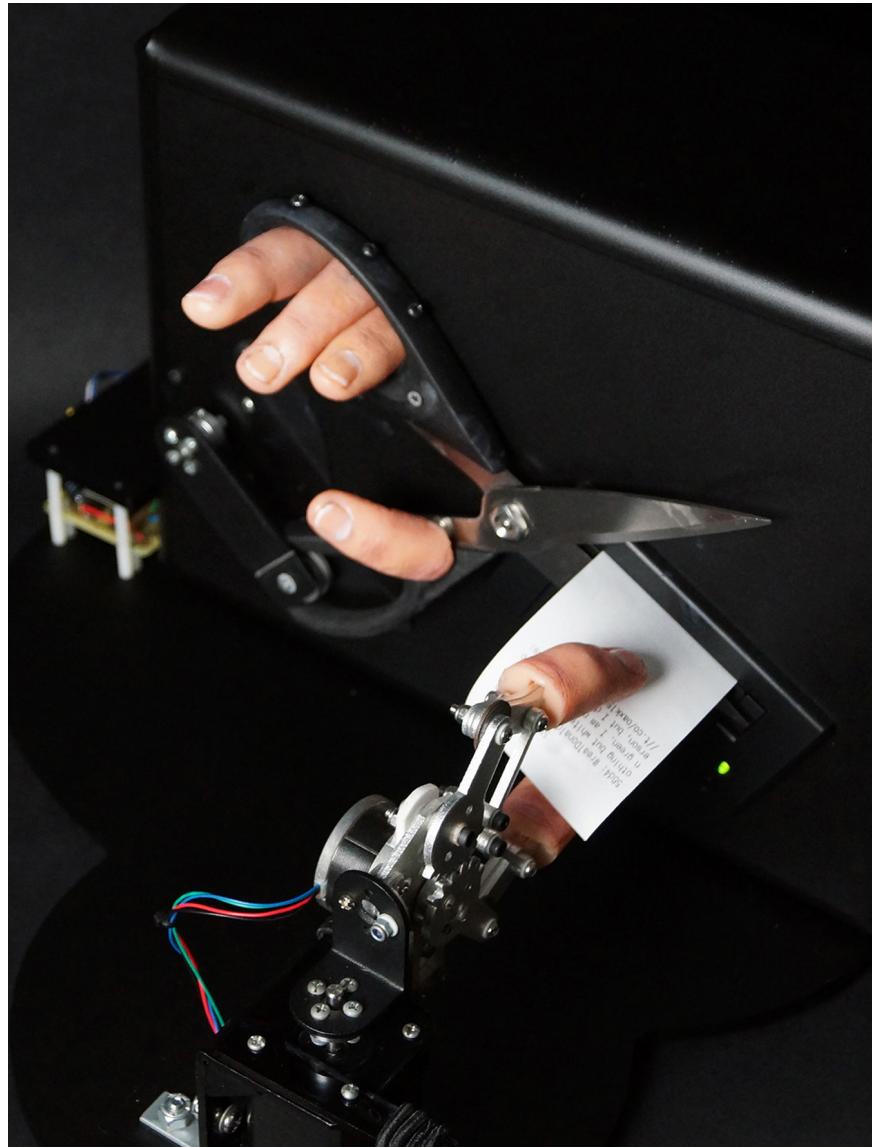
Many people do not realize, nor connect emotionally to the daily COVID-19 mortality rate that they see and hear reported in the news. They do not personally know the names of the persons represented in the death toll. The numbers do speak to the lived experiences of those afflicted with and treating the disease. Behind the data are medical personnel who are afraid of infection and have been reluctant to take off their protective clothing when spending time with their loved ones at home. There are critically ill patients whose lungs are connected to machines. They are still unable to breathe. For many, their only option has been to self-isolate and die alone.

Not Suitable for Breathing is an art installation that visualizes Canadian COVID-19 mortality data through physical objects, projected animation, and sound. The installation consists of white rice paper bags, medical infusion stands, a system of air pumps and spotlights. The air pumps are

programmed to inflate and deflate the bags, according to the daily number of COVID-19 deaths from Canada. Hence, the breathing of the paper bag visualizes such information. The data showing the date and daily death count is projected on a 270-degree screen using 3 projectors, with an animation showing the increase in the number of deaths using an icon of the coronavirus. The 9-channel soundscape plays an assemblage of news reports from different countries mixed with the sound of a person breathing, water, medical machines, and synthetic sounds.

Visualizing the number of COVID-19 related deaths through this project helps viewers to understand that COVID-19 has affected everyone throughout the various sectors of society. Thus, not only governments and health institutions but everyone shares a responsibility to reflect on and help stop the spread of this pandemic.





Invisible Lives

Hye Yeon Nam, Zak Berkowitz
2021

Invisible Lives uses a computational system to evoke understanding and spark a discussion about racism and the recent social movements Black Lives Matter and Stop Asian Hate. It explores how racial biases are often freely expressed on online platforms where authors can hide behind anonymity. While we are connected online, we are also divided by biases. Biases separate people by gender, race, language, culture, and appearance. Online we are simultaneously connected and disconnected. Invisible Lives not only represents sensitive social issues but also voices the feelings of the targeted groups and reveals the lack of conversation about these issues.

Invisible Lives receives data including ID, date, time, sentences, and hashtags from Twitter in real-time, filters by keywords of Stop Asian Hate and Black Lives Matter using Python, and prints sentences on paper from a thermal printer. The process is implemented with Raspberry PI, Arduino microcontroller, stepper motors,

and motor drivers. As sentences are printed, robotic hands with silicon fingers cut the thermal paper, leaving a pile of printouts on ground. As the fallen papers piled higher and higher, the audience can pick up the papers to read, take, or throw away. Amongst the pile of diverse messages, one may find examples that seek to share positive messages from the movements.

The aim of Invisible Lives is to raise awareness and start discussions, not for the audience to remain in frustration. By confronting the audience with a live stream of the on-going social movements of Black Lives Matter and Stop Asian Hate, the installation poses controversial questions about the origins, function, transmission, and lineage of prejudice. Since these robots resemble parts of the human body, yet are controlled by computational and mechanical systems, Invisible Lives reveals the different meaningful and reflective layers between human and machine.

Roads In You

Yoon C Han

2020

Roads in You is an interactive biometric-data artwork that allows participants to scan their veins and find the roads that match their vein lines. The vein data as one of the fascinating forms of biometric data contain uniquely complicated lines that resemble the roads and paths surrounding us. The roads resemble how our vein lines are interconnected and how the blood circulates in our bodies in various directions, at various speeds, and in different conditions. This new artwork explores the line segmentation and the structure of veins and compares them to roads in the real world. The participants can also export the data and keep them as a personalized souvenir (3d printed sculptures) as part of the artistic experience.

Through this project, users can explore the correlation between individuals and environments using the hidden patterns under the skin and the vein recognition techniques, image processing and artificial intelligence. This project also has the potential to lead the way in the interpretation of complicated datasets while providing aesthetically beautiful and mesmerizing visualizations.

Project website:

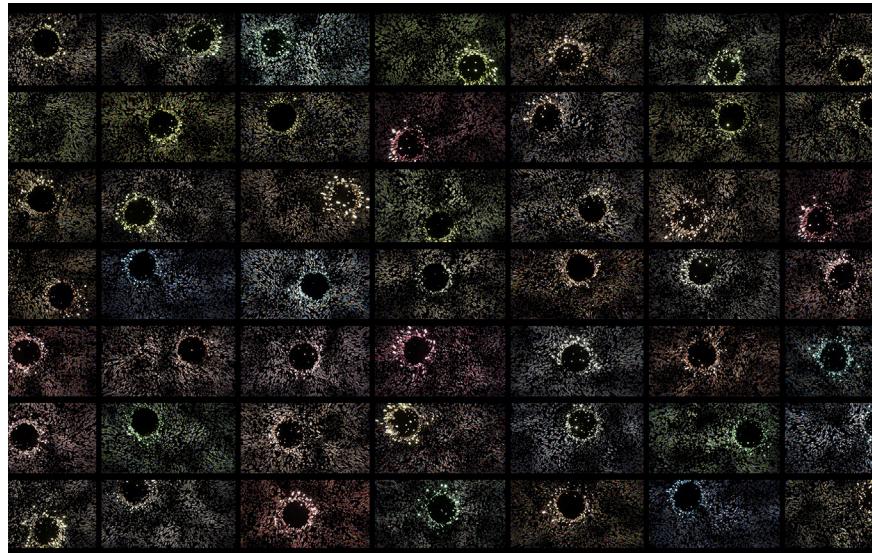
<http://yoonchunghan.com/roadsinyou/>



Delhi, India



Seoul, South Korea



Invisible Pixel: Short Video Narratives from a Machine Perspective

Junlin Zhu, Wenxuan Zhao, Yingjing Duan, Juanjuan Long
2021

Short video software has become a new agricultural tool for Chinese farmers to alleviate poverty in recent years. The Internet connects the urban and rural public cultural spaces, social media transforms personal expression into public communication, and the public rediscovered individual narratives in remote areas.

With the popularity of short videos, how will technological innovation further affect social media? Can the current short video-based individual narratives be objectified with algorithms? In what form will it be presented? Will it be more attractive? With such thoughts and purposes, we try to simulate the data experience of social media from a machine perspective to respond.

Invisible Pixel is a web page based on China's Internet poverty alleviation background. It selected 60 IDs information from the program

Happy Village Leaders launched by the short-video platform Kwai, including five content types: specialties, tourism, life, techniques, and charity. We input the video texts of IDs into the Deep-daze model to generate images to build a visual portrait of IDs. The web page has a linear structure divided into three main views: ID map, Pixel tunnel, and Machine view. Viewers can switch between the daily viewing interface and the machine view by clicking and long-pressing the mouse.

At this stage, the machine has been able to develop its own imagination based on the dataset and make an accurate visual description. The resulting images may not meet conventional aesthetic standards, but offer the possibility of an artificial intelligence present in our future daily life.

Project website:
<http://flowingboundary.com/IP>

FaceType: Expressing our Spoken Expression

Kevin Maher, Fan Xiang, Liang Zhi
2021

In the installation FaceType, visitors experience the emotion, cadence, and emphasis in their speech in vivid generated type. FaceType connects our facial expression with Chinese calligraphy, using dynamic emotional changes as a common point between these strangely different means of expression.

Letter shape, brush stroke, spacing and speed as to perform "data-ink" reflecting audience speech in a live process. Intuitive mapping of these factors were developed for a non-Western audience in mind, one versed with understanding of how calligraphy is used for expression. The strokes of the font were developed in collaboration with Chinese calligraphers, whose work often incorporates emotion-laden brush strokes.

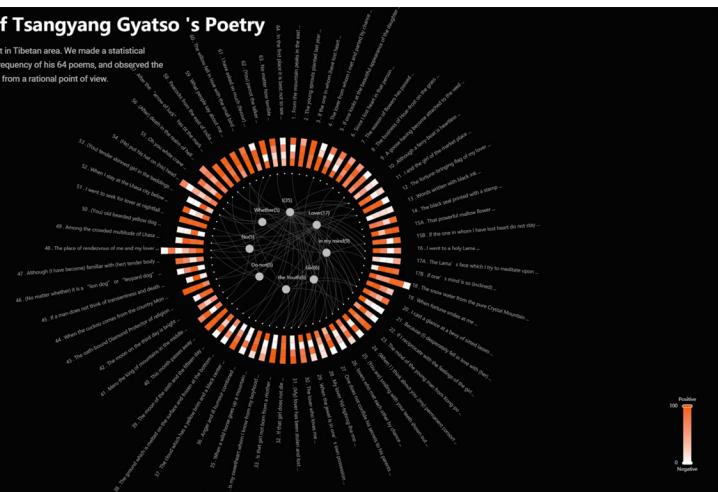
During the installation showing, nearly half of the audience interacted with the work through the microphone and camera. FaceType takes the emotional intensity and valence of facial expressions as well as the emphasis and cadence in visitor speech to "write" animated strokes documenting their spoken expression.





Visualization of Tsangyang Gyatso's Poetry

Tsangyang Gyatso is a famous poet in Tibetan area. We made a statistical analysis of the emotion and word frequency of his 64 poems, and observed the emotional expression of his poems from a rational point of view.



Decoding and Encoding of Tibetan

Anqi Song, Xintong Song, Yuhao Chen,
Guangyu Luo, Qiansheng Li

2021

This work takes Tibetan characters as the main body, and produces an interactive web page with data visualization and narrative. Our work will interpret the cultural value of Tibetan from the perspective of data to establish the bridge of Sino-Tibetan cultural exchanges. The web page is divided into three parts. The first part of the website is "deconstructing Tibetan characters", which aims to let people know the basic knowledge of the Tibetan. Analyze the origin and structure of Tibetan characters. Through the interactive page of matching strokes with signboards and Tibetan word formation games, you can quickly understand the Tibetan language knowledge and enter the Tibetan life.

The second part of the website is "to deconstruct Tibetan calligraphy through data visualization". We designed a comparative experiment on Tibetan writing and Chinese writing. We use wearable devices to collect data on brain waves and muscle changes of experimenters who write Tibetan calligraphy and Chinese calligraphy,

as well as data such as images, videos, and writing time. We process and analyze the original data to visually show the difference and connection between Tibetan and Chinese calligraphy.

The third part of the website is "deconstructing text". Tsangyang Gyatso, the most representative folk song poet in Tibet, China with his most classic work named "The Love-songs of 6th Dalai Lama Tshangyang Gyatsho". We make the visualization analysis and emotional interpretation of 64 poems, And combine word cloud diagrams, relationship diagrams, tree diagrams, etc. for visual presentation. We observe the emotional expression of poetry from a rational point of view.

The whole website progressively transmits information. It tells a data story from Tibetan characters to Tibetan culture in an innovative way. We want to use data visualization to build a bridge between Tibetan and Chinese cultures in order to promote the spread of Tibetan culture.

Spectrographies: Decomposition of Music into Light

Baltazar Pérez, Ilana Levin

2021

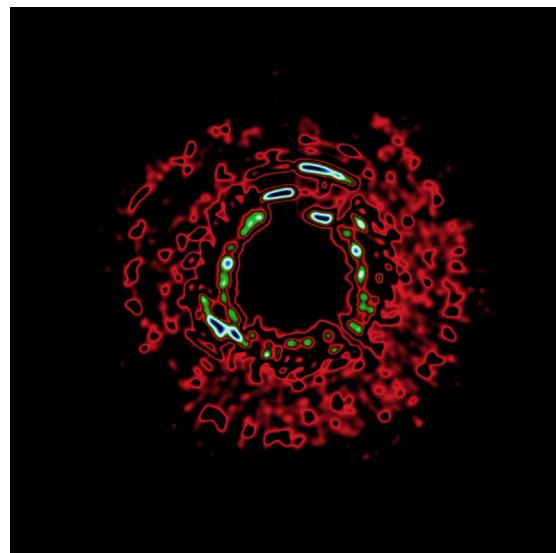
Since designing cover art for music albums was pioneered by Alex Steinweiss by the end of the 30's, music has become inextricably associated with the artwork that serves as its medium. Music distribution was forever changed and his designs went on to inspire future covers such as Pink Floyd's *Dark Side*. Now that music distribution has turned mostly digital, transitioning to the new "radio" format of streaming, the image artwork has lost part of the importance it had to make people identify and connect to music in the vinyl and CD eras.

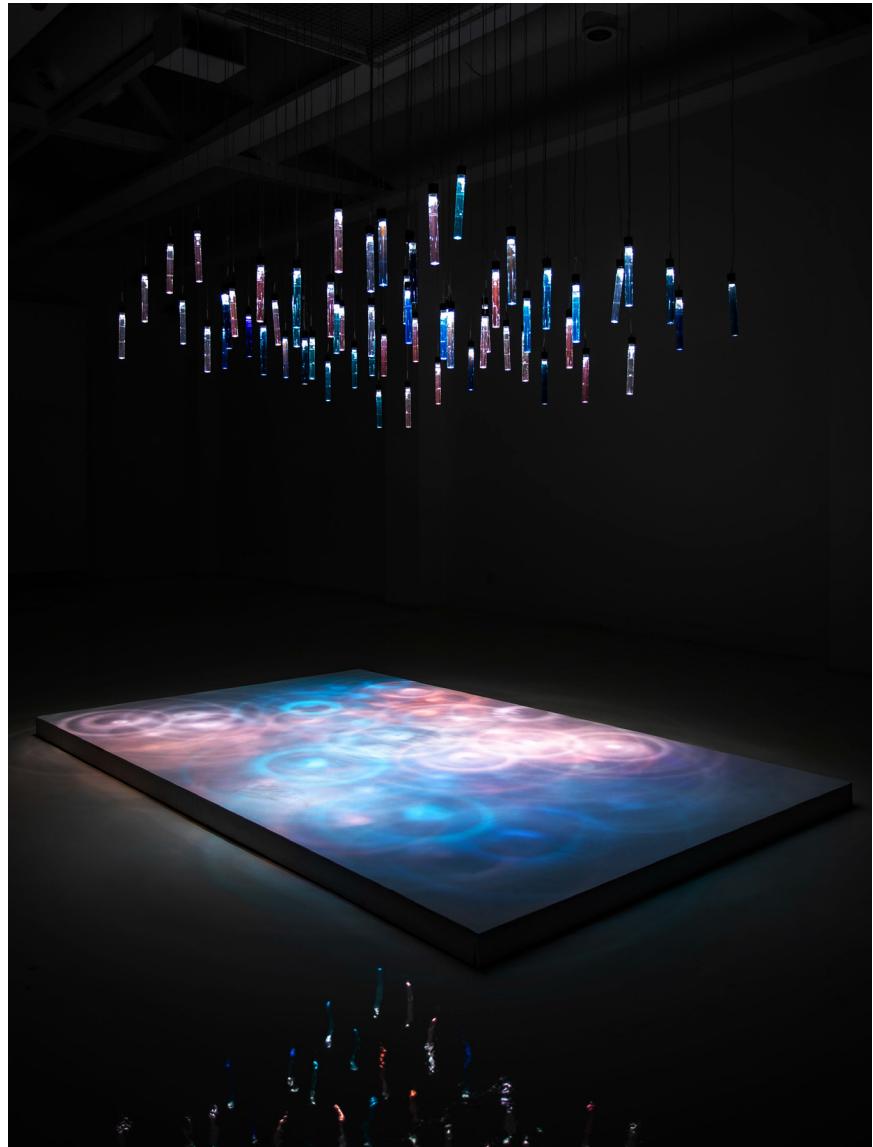
Spectrographies: Decompositions of Music into Light started out as an aesthetic experiment to remix famous album covers by digitally fusing sound and artwork and developed into a new way to represent and embody music, leading to a reinterpretation of the concept of cover art and physical album in the digital distribution age of music. The project works through a semiautomated process which transforms an album into

a graphical edition made from its own tracks which, as photographs in a photo album, can be independently collected. A pictographic legend inspired by the Voyager Golden Record accompanies the enveloped edition of a full LP.

The technique developed for *Spectrographies* is grounded on the spectrogram (the decomposition of a signal in time into its constituent frequencies) and thus the resulting images work as a biometric fingerprint, or iris, of the song, each being totally unique and linked to its materiality. The only part of the process requiring human intervention is the design of the color schema of an album. *Spectrographies* is also suitable to create animated videos where sound and visuals are played together in a live spectral analysis to produce a synesthetic experience which transfers to its static form.

Instagram: [@spectrographies](#)





Glacier's Lament

Jiabao Li

2021

Glaciers are sentinels of climate change. They are the most visible evidence of global warming today. This series of works embodies the stunning beauty, rapid change, fragility, destructive power, and magnificence of glaciers. At the same time, they challenge the audience with the dramatic, irreversible ecological damages from climate change.

There are four color cards in PANTONE for glacier blue. However, in real glaciers, this blue color is variable and dynamic. As glaciers are disappearing, this unique blue is also disappearing. We sampled and blended the blue color from glaciers in Alaska and hung them in recycled glass vials. When one glacier calving happened, one color vial fell down. At the end of the exhibition, all 60 vials fell down, forming a painting on the canvas beneath.

In Glacier's Lament, we used data from glacier melting in the past 60 years to compose music and dance with local musicians who have witnessed the recession of the Mendenhall glacier over their lifetimes in Juneau, Alaska.

We filmed the artists performing the piece on the glacier, collaborating with the glacier's own sounds.

Glacier's lament attempts to express and meld the feeling of loss of ephemeral beauty of glacier with the factual evidence of climate change. The goal is that in synthesizing these two realities (the factual and the felt), the work can reach audiences beyond those directly impacted by the loss of glaciers before it is too late. At the same time, it is a love letter to an already diminished nature and mourning of that loss. Glacier's Lament and The Disappearing Blue seek to make the impersonal data personal, and the personal experience of a changing environment heard. They recreate aesthetic dynamics of the loss of nature.

Side-view States

Emily Fuhrman

2021

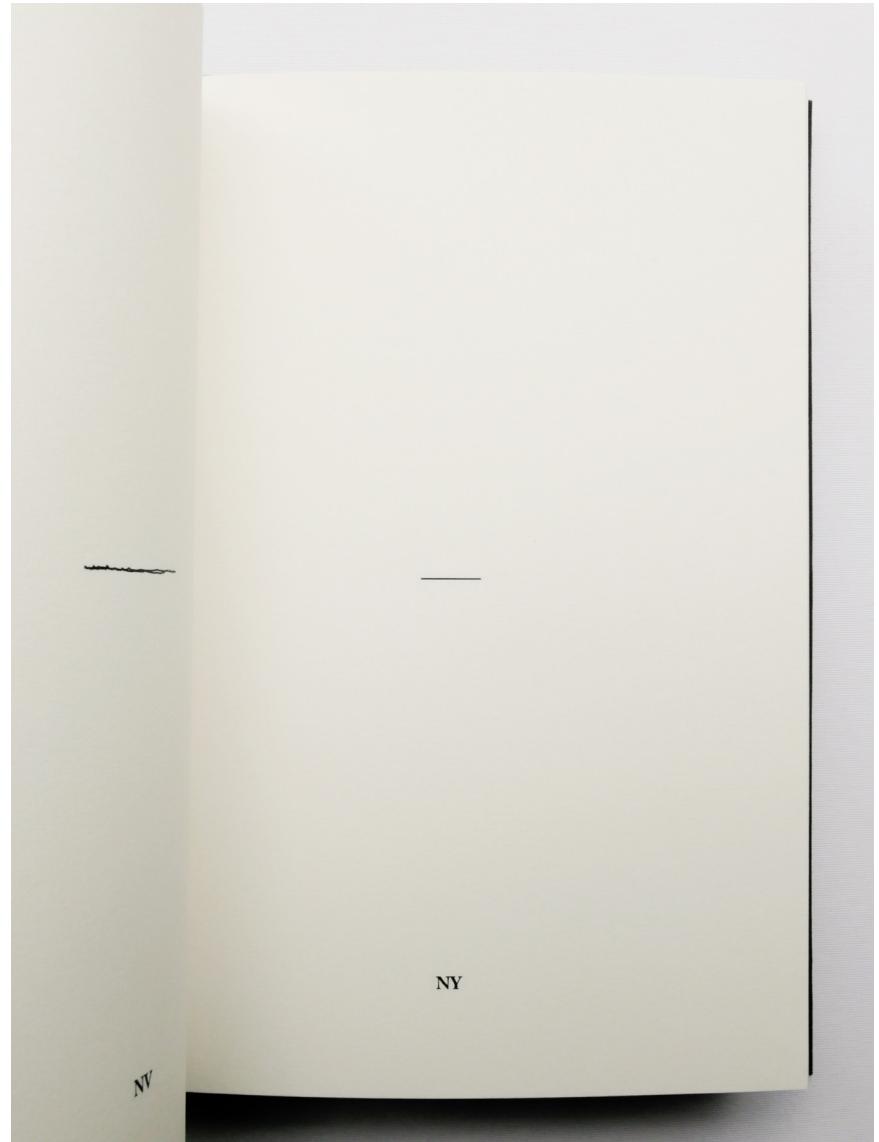
On maps of the United States, state boundaries enclose flat polygons, independent of the ground beneath. Viewed from above, the borders between state territories differently follow natural barriers, approximate the juncture of a grid, and mark the edges of the land that abuts the ocean. The lines that define them trace two-dimensional outlines not subject to the vagaries of terrain, representing instead the legal and subsequent cultural definitions of where one territory ends and another begins.

The traveler between U.S. states tends to experience state borders as points, not lines, encountered at the point of intersection: hearing a programmed welcome announcement through a personal GPS system when crossing from New York to New Jersey, for instance; standing in Cincinnati, looking across the Ohio River to Kentucky; or seeing

a "Welcome to California" sign when crossing the Oregon border by car. During the COVID-19 pandemic, the concept of statehood became fragile, almost ridiculous, in contrast to the hyper-localized geography to which so many confined themselves for safety. State boundaries, already an abstract concept, served primarily as grouping methods for daily statistics detailing the presence and progression of the virus.

This project explores cultural boundaries as data-driven artifacts unmoored from direct experience. It presents an atlas of state boundaries programmatically lifted from the physical terrain, then rotated to collapse the distinction between region and line.

Project website:
<https://emilyfuhrman.co/interactive/Y2021001/>





Midwest Events



Mississippi Flooding

Surface Tension

Caitlin & Misha
2019

Surface Tension is an artistic visualization driven by fresh daily streamflow data from the United States Geological Survey (USGS). Water supports life but can also drown and destroy. People are mostly water, but the melting ice caps threaten our very existence. Harnessing this elemental force requires a balancing act and this artwork is a reflection on humanity's fraught relationship with freshwater.

Water is often depicted as blue and beautiful, and the project problematizes this metaphor by delving into the human relationship to water and how we impact the water we need to live. As an element that is constantly in a state of flux, water is shared among people and this visualization is a response to how intrinsically linked we are to water and to each other via water. We decided to focus on freshwater, which people drink and interact with every day. All of the surface water on Earth is interconnected, and the disturbances at the specific points ripple out and interfere with each other, influencing one another and combining into an aggregate pattern of interdependence. The open source project uses publicly accessible (FAIR) data, was commissioned by NC State University, and funded by the Andrew W. Mellon Foundation.

The mapped "blobs" are the percentile data from 11K sensor stations which specifies a 'percentile' of streamflow (each site's value compares current water level/movement to historical data for that site). Since the project caches government data you can visually compare the current and past days. For example here is June 19 2021 (during the ongoing western USA drought): <https://tinyurl.com/556hvzs8>

Compare that to a past day or record flooding (May 3 2019):
<https://tinyurl.com/8c4t9zz4>

Otherwise going here shows it for the current day you visit it:
<http://surface-tension.caitlinandmisha.com/>

About:
<https://caitlinandmisha.com/surface-tension>

Untitled Interspecies Umwelten

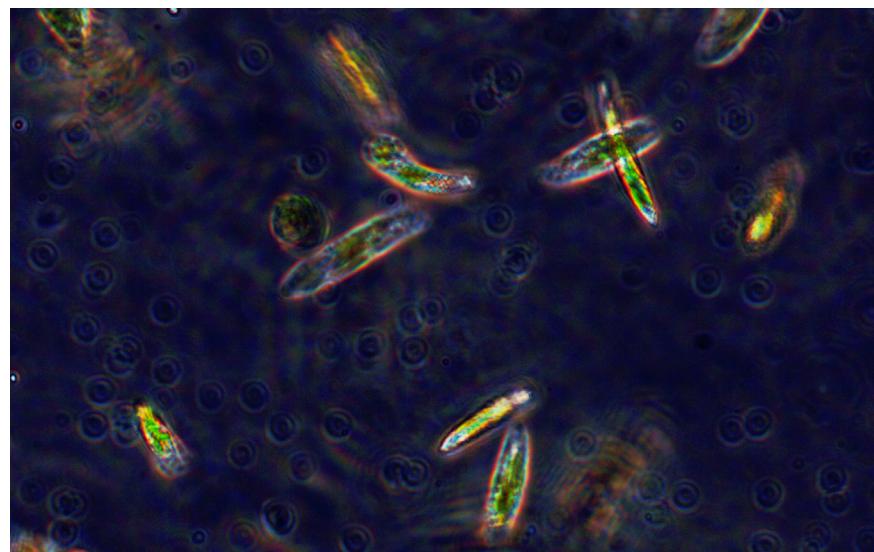
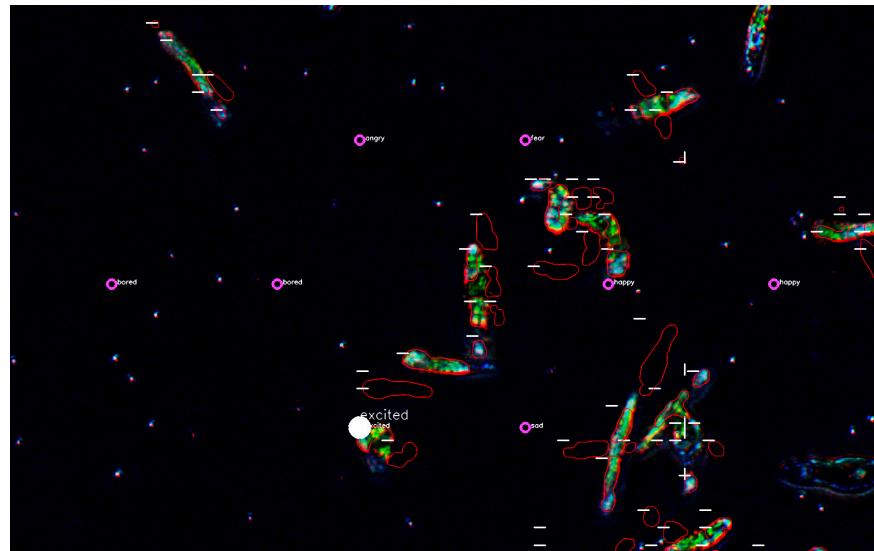
Joel Ong
2021

The project *untitled interspecies umwelten* is an artistic research project exploring expanded and computer-mediated experiences of conversation with another species. Through strategies in data viz, computer vision and AI-generated text, the project proposes the speculative intermingling of the natural and cultural worlds of bio-semiotics and extra-verbal language. Its goal is to develop an interspecies futurity through which the collaborative practices with multiple species of plants, animals, fungi and microbes may inhabit the field, scientific/engineering laboratories and studios of computational practices (*in silico*).

In addition, the work is motivated to explore two emerging mythologies. The first is a familiar one - developed through prescient understanding of nonhuman systems (be it computer AI, or nonhumans) and the perspective of them as analogues for human minds. Kate Crawford speaks against this oversimplification of intelligence as an elision of the human as embodied, relational and set within wider

ecologies. The second, is the myth of language as anthropocentric, verbal and utilitarian. Nature abounds with communicative structures beyond our comprehension and human-determined logic. By using simple computer systems with customizable parameters of 'seeing' and 'listening', could we formulate modes of communication that construct an interspecies *umwelt* - a multitude of semiotic traces that we may respond to?

untitled interspecies umwelten observes a *E.gracilis* community under the microscope. This freshwater alga has been well-documented for its unique morphological and behavioural qualities e.g. phototoxic (moving towards light) and metaboly (the ability to alter their shape in reaction to specific stressors). In a controlled experiment, these behaviours form a vocabulary of intent and are subsequently matched to words/emotions in a pre-selected database of text. *E.gracilis* thus steers a conversational AI system and its responses to a human conversant as a documentation of poetics between animal, machine and human communicative processes.



Papers

Deep Connection: Making Virtual Reality Artworks with Medical Scan Data

Marilene Oliver, Gary Joynes, Dr. Kumaradevan Punithakumar,
Peter Seres

Deep Connection is an installation and virtual reality (VR) artwork made using full body 3D and 4D magnetic resonance (MR) scan datasets. When the user enters Deep Connection, they see a scanned body lying prone in mid-air. The user can walk around the body and inspect it, lie underneath and walk through it. The user can dive inside and see its inner workings, its lungs, spine, brain. The user can take hold of the figure's outstretched hand: holding the hand triggers the 4D dataset, making the heart beat and lungs breathe. When the user lets go the hand, the heart stops beating and the lungs stop breathing. Deep Connection creates a scenario where an embodied human becomes the companion for a virtual body. This paper maps the conceptual and theoretical framework for Deep Connection such as virtual intimacy and digitally mediated companionship. It also reflects on working with scanned bodies more generally in virtual reality by discussing transparency, the cyberbody versus the data body, as well as data privacy and data ethics. The paper also explains the technical and procedural aspects of the Deep Connection project with respect to acquiring scan data for the creation of virtual reality artworks.

Creating Meaningful Connections through COVID-19 Data Manifestation

Karin von Ompteda

This paper proposes that the physical manifestation of data can help people to meaningfully connect with the COVID-19 pandemic. Four data objects are presented and analyzed, created by third-year graphic design students at OCAD University. The projects are developed through the design practice of data manifestation; the communication of quantitative information through objects, installations, and sensory experiences. Designed in the autumn of 2020, these projects stop time, offering people an opportunity to reflect on what has happened (and is happening). They illustrate the potential of data manifestation to connect people to the shared experiences of the pandemic, as well as its disproportionate impacts. They further demonstrate the capacity of data manifestation to connect people to incomprehensible magnitudes of loss. Concern by Binhwa Cho explores the fear of infection; Yellow Mask by Lynn Liang takes on anti-East Asian discrimination; A Blinding Truth by Michael Zhang examines COVID-19 case numbers in the United States; Mourning Globe by Minah Lee translates global deaths into a contemplative object.

Visualizing Life in the Deep: A Creative Pipeline for Data-Driven Animations to Facilitate Marine Mammal Research, Outreach, and Conservation

Jessica Marielle Kendall-Bar, Nicolas Kendall-Bar, Angus G. Forbes, Gitte McDonald, Paul J. Ponganis, Cassandra Williams, Allyson Hindle, Holger Klinck, Markus Horning, David Wiley Stellwagen, Ari S. Friedlaender, Roxanne S. Beltran, Daniel P. Costa, Terrie Williams

In this paper, we introduce a creative pipeline to incorporate physiological and behavioral data from contemporary marine mammal research into data-driven animations, leveraging functionality from industry tools and custom scripts to promote scientific insights, public awareness, and conservation outcomes. Our framework can flexibly transform data describing animals' orientation, position, heart rate, and swimming stroke rate to control the position, rotation, and behavior of 3D models, to render animations, and to drive data sonification. Additionally, we explore the challenges of unifying disparate datasets gathered by an interdisciplinary team of researchers, and outline our design process for creating meaningful data visualization tools and animations. As part of our pipeline, we clean and process raw acceleration and electrophysiological signals to expedite complex multi-stream data analysis and the identification of critical foraging and escape behaviors. We provide details about four animation projects illustrating marine mammal datasets. These animations, commissioned by scientists to achieve outreach and conservation outcomes, have successfully increased the reach and engagement of the scientific projects they describe. These impactful visualizations help scientists identify behavioral responses to disturbance, increase public awareness of human-caused disturbance, and help build momentum for targeted conservation efforts backed by scientific evidence.

Pictorials

Glacier's Lament

Jiabao Li, Dr. Cooper Galvin

Glaciers are sentinels of climate change. They are the most visible evidence of global warming today. This series of works embodies the stunning beauty, rapid change, fragility, destructive power, and magnificence of glaciers. At the same time, they challenge the audience with the dramatic, irreversible ecological damages from climate change. In Glacier's Lament, we used data from glacier melting in the past 60 years to compose music and dance with local musicians who have witnessed the recession of the Mendenhall glacier over their lifetimes in Juneau, Alaska. Each note is one season in a year. In the winter, the glacier is frozen, so the pitch is low. In the summer, the melting rate rises, so the pitch is high. Towards the end, the melting overflows into spring and autumn, and the melting in the summer becomes faster. We filmed the artists performing the piece on the glacier, collaborating with the glacier's own sounds. There are four color cards in PANTONE for glacier blue. However, in real glaciers, this blue color is variable and dynamic. As glaciers are disappearing, this unique blue is also disappearing. We sampled and blended the blue color from glaciers in Alaska and hung them in recycled glass vials. When one glacier calving happened, one color vial fell down. At the end of the exhibition, all 60 vials fell down, forming a painting on the canvas beneath.

Affective Palettes for Scientific Visualization: Grounding Environmental Data in the Natural World

Francesca Samsel, Stephanie Zeller, Daniel F. Keefe, Dr. Greg Abram

As computing capacity increases and data grows in both size and complexity, we are capable of understanding our surroundings with increasing nuance. Visualizing this often-multivariate environmental data presents complex visual scenes to be navigated, parsed, analyzed, and communicated. We draw from both the natural world and artistic color theory to present 1) a new color system, designed to establish an affective connection between big environmental data and its original source material, 2) a tool for extracting these workable palettes from natural imagery, and 3) a selection of pre-made linear colormaps and discrete color sets drawn from natural environments.

Wanderlust: 3D Impressionism in Human Journeys

Guangyu Du, Lei Dong, Fábio Duarte, Carlo Ratti

The movements of individuals are fundamental to building and maintaining social connections. This pictorial presents *Wanderlust*, an experimental three-dimensional (3D) data visualization on the universal visitation pattern revealed from large-scale mobile phone tracking data. It explores ways of visualizing recurrent flows and the attractive places they implied. Inspired by the 19th-century art movement Impressionism, we develop a multi-layered effect, an 'impression', of mountains emerging from consolidated flows, to capture the essence of human journeys and urban spatial structure.

DaRt: Generative Art using Dimensionality Reduction Algorithms

Rene Cutura, Katrin Angerbauer, Frank Heyen, Natalie Hube, Michael Sedlmair

Dimensionality Reduction (DR) is a popular technique that is often used in Machine Learning and Visualization communities to analyze high-dimensional data. The approach is empirically proven to be powerful for uncovering previously unseen structures in the data. While observing the results of the intermediate optimization steps of DR algorithms, we coincidentally discovered the artistic beauty of the DR process. With enthusiasm for the beauty, we decided to look at DR from a generative art lens rather than their technical application aspects and use DR techniques to create artwork. Particularly, we use the optimization process to generate images, by drawing each intermediate step of the optimization process with some opacity over the previous intermediate result. As another alternative input, we used a neural-network model for face-landmark detection, to apply DR to portraits, while maintaining some facial properties, resulting in abstracted facial avatars. In this work, we provide such a collection of such artwork.

Explore Mindfulness without Deflection: A Data Art Based on the Book of Songs

Yifang Wang, Yifan Cao, Junxiu Tang, Yang Wang, Huamin Qu, Yingcai Wu

The Book of Songs is regarded as the origin of Chinese literature and has a prolonged impact on Chinese culture, aesthetics, and morality. In this work, we have analyzed the 305 poems in The Book of Songs from different dimensions. We aim to learn how various poetic imageries connect abstract themes and subjective emotions at the micro level, and how the poems connect people today and ancestors to understand the universal, everlasting, and poetical human lives at the macro level.

Program

Online Exhibition

<https://visap.net/gallery>

Online Opening Reception

Tuesday, October 26, 2pm-3:15pm CDT

Schedule:

2:00pm	Introductory remarks
2:10pm	VISAP Fast-Forward artwork previews + website walkthrough
2:20pm	Four Artist Performances (Performance artists: Joel Ong, Zhouyang Lu, Hye Yeon Nam, Kevin Maher and Fan Xiang)
2:45pm	Live Q&A with artists and performers

Visualizing Life in the Deep: A Creative Pipeline for Data-Driven Animations to Facilitate Marine Mammal Research, Outreach, and Conservation (Paper)
Jessica Marielle Kendall-Bar, Nicolas Kendall-Bar, Angus G. Forbes, Gitte McDonald, Paul J. Ponganis Scripps, Cassandra Williams, Allyson Hindle, Holger Klinck, Markus Horning, David Wiley, Ari S. Friedlaender, Roxanne S. Beltran, Daniel P. Costa, Terrie Williams

Creating Meaningful Connections Through COVID-19 Data Manifestation (Paper)
Karin von Ompteda

Affective Palettes for Scientific Visualization: Grounding Environmental Data in the Natural World (Pictorial)
Francesca Samsel, Stephanie Zeller, Daniel F. Keefe, Greg Abram

Glacier's Lament (Pictorial)
Jiabao Li

Invited artist talks: Caitlin & Misha (Caitlin Foley and Misha Rabinovich)
Live Q&A for Papers, Pictorials, and Artist Talks

Papers And Pictorials

Session 1: Environment, Nature and Data

Wednesday, October 27, 12pm-1:30pm CDT, Online

Data in Public (Keynote)
Jer Thorp

Abstract

When is the last time you saw a bar graph in a park? Read a scatter plot in a public square? Listened to a data sonification in a museum? In this talk Jer will share work designed to create real, functioning data publics. From data performances at the Museum of Modern art to data sculpture in the world's busiest public place, these projects seek to change the way that the public interacts with and understands information.

Speaker Bio

Jer Thorp is an artist, writer, and teacher living in New York City. He is best known for designing the algorithm to place the nearly 3,000 names on the 9/11 Memorial in Manhattan. Jer was the New York Times' first Data Artist in Residence, is a National Geographic Explorer, and in 2017 and 2018 served as the Innovator in Residence at the Library of Congress. Jer is one of the world's foremost data artists and is a leading voice for the ethical use of big data.

Jer's book 'Living in Data' is published by Farrar, Straus, and Giroux and is in bookstores now.

Session 2: Human, Culture and Algorithm

Thursday, October 28, 12pm-1:30pm CDT, Online

Deep Connection: Making Virtual Reality Artworks with Medical Scan Data (Paper)
Marilene Oliver, Gary Joynes Joynes, Dr. Kumaradevan Punithakumar, Peter Seres

Wanderlust: 3D Impressionism in Human Journeys (Pictorial)
Guangyu Du, Lei Dong Peking, Fábio Duarte, Carlo Ratti

DaRt: Generative Art using Dimensionality Reduction Algorithms (Pictorial)
Rene Cutura TU Wien, Katrin Angerbauer, Frank Heyen, Natalie Hube, Michael Sedlmair

Explore Mindfulness without Deflection: A Data Art Based on the Books of Songs (Pictorial)
Yifang Wang, Yifan Cao, Junxiu Tang, Yang Wang, Huamin Qu, Yingcai Wu

Live Q&A for Papers and Pictorials

Invited artist talks: Emily Fuhrman, Song Anqi, Xintong Song, Yuhao Chen, Guangyu Luo, Qiansheng Li, Junlin Zhu, Juanjuan Long, Yingjing Duan, Wenxuan Zhao, Ignacio Pérez-Messina, Ilana Levin

Live Q&A for Artist Talks

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