



2021-2022

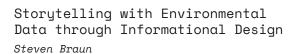




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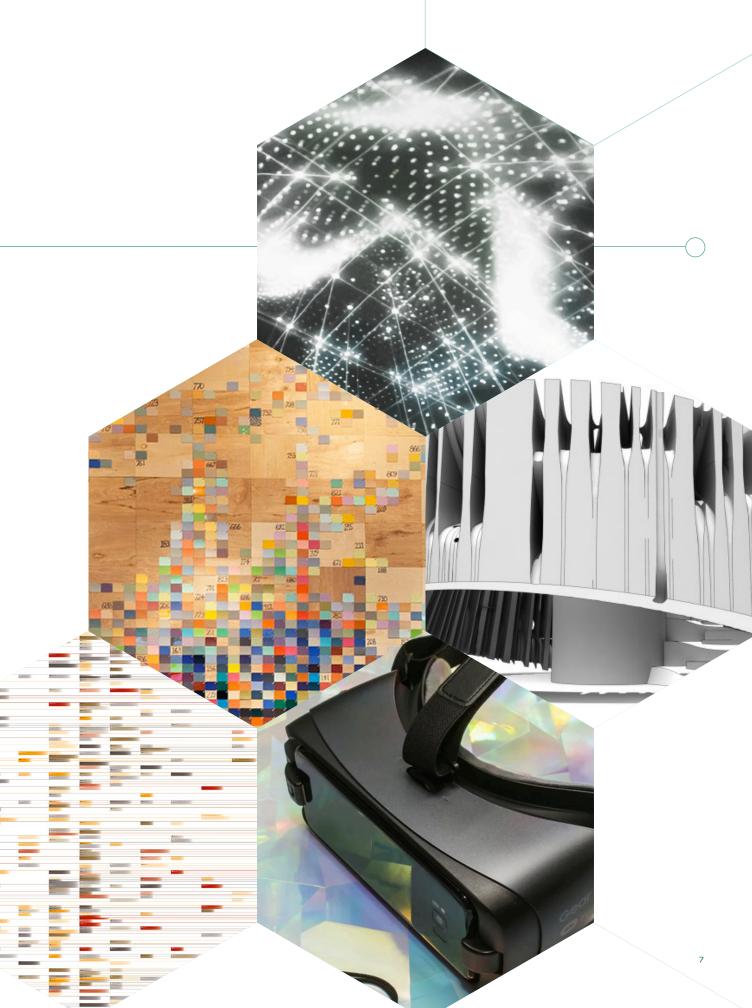
Rethinking the Future of Sustainable Design



Sponsored by Artistic Excellence Programming Grant 2021-2022 from College of Humanities and the Arts, San José State University

As a continuation of the "Data+Al+Design" program that has been successfully conducted in AY 2020–2021, this second edition of the program will focus on how data visualizations can be used to understand the past, present, and future of various environmental issues. The issues include marine plastic pollution, air pollution, trees in urban area, energy consumption, and more. Furthermore, students will understand how artificial intelligence (Al) technologies and material science can address environmental-friendly solutions and creative approaches for data-driven design.

A total of six guest speakers who are researchers, designers, and engineers from various fields will visit SJSU and share their insights and experiences on visualizing environmental data and creative solutions for climate change in conjunction with data, design, and technology.





"I'm constantly asking myself... how can we use visualization as a medium for rendering both the material and sort of the textual quality of that human experience? How do we make that experience actually visible?"

Steven Geofrey Braun

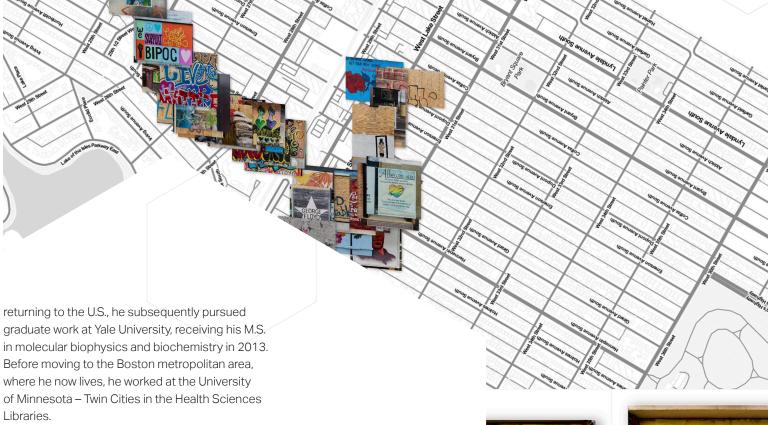
fluidencodings.com

Assistant Teaching Professor/Designer in Residence for the Center for Design at Northeastern
University, College of Arts, Media and Design, Department of Art + Design

BIO

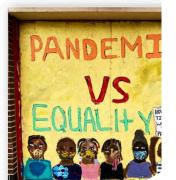
Steven's work is interdisciplinary, drawing on interests and experiences across the arts and humanities, social sciences, and natural sciences. Inflected by strong leanings towards computational approaches in digital humanities, this work is heavily informed by his experiences living in and studying Japan. Through his creative practice, Steven explores themes of representation, narrative, language, and human experience, seeking to address the varied possible responses to one question in particular: What does it mean to employ visualization as a medium in which radical representation can deconstruct privileged, canonical, and dominant perspectives? To explore this, Steven's work focuses primarily on the use of data visualization, computation, and design to deconstruct texts, where a text is anything that can be read and interpreted, serves as a set of coherent signs and symbols, and functions as something that is situated and composed: novels, poetry, song lyrics, film screenplay, musical score, cinematography, historiography, urban layout, archival data, the visual design of websites, and beyond.

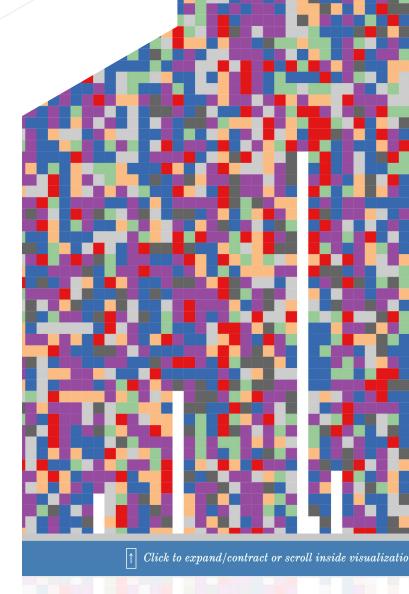
Steven received his B.A. (2011), summa cum laude, in chemistry (with distinction) and Asian studies (with distinction) from St. Olaf College. After graduating, he lived in Kyoto, Japan as a Fulbright Fellow, carrying out computational biophysics research at Kyoto University. After



Steven has worked at Northeastern University since the end of 2015; prior to joining the faculty of the College of Arts, Media and Design, he served as the Data Analytics/Visualization Specialist in Snell Library.

Outside of his work, Steven enjoys many hobbies, including cooking and baking, playing the clarinet,





The Hiroshima Archive and Voices

I study and experiment with information visualization and design as a technology of seeing.



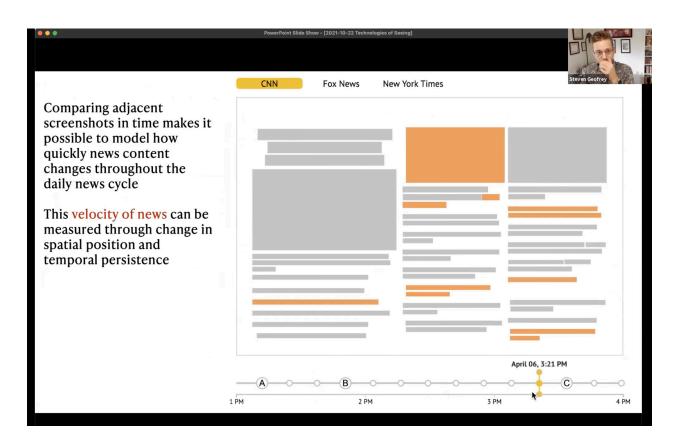
LECTURE

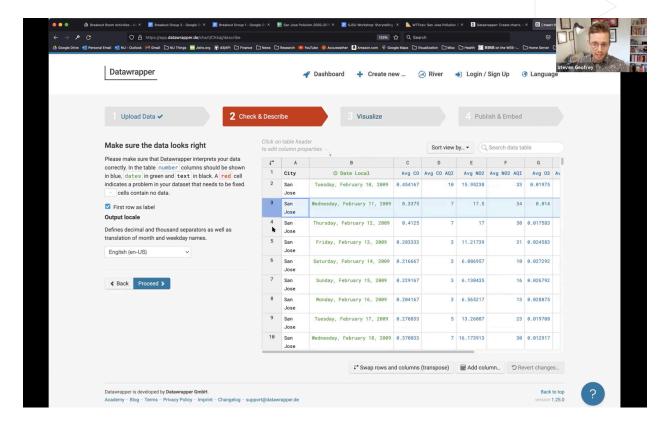


Technologies of Seeing: Visualization as Textural Practice

11AM October 22, 2021

Professor Braun's lecture emphasizes the "technology of seeing," or the power to render something visible, and the process of rendering requires design decisions. He displayed examples of his projects where he has taken different types of texts and created visual mediums of representing those texts. These projects can include literal works of texts (books, articles) or more abstract forms of text such as movies. Texts are broken down into pieces of information through exploration, questions, and analysis so that they can be reorganized and/or reinterpreted through the design process and visualization that allow better accessibility to the audience.





This workshop allowed students to take multiple data sets of pollutants in different cities and create meaning with them through their own ways of visualization. Through a step by step process, Professor Braun instructed students to first answer questions on the data to help interpret and understand the data. Afterwards, students took the data of two cities and put them through a graph visualizer to view differences in levels and distributions. This allowed students to ask their own questions about why these data sets were shaped the way they are and why they were different between different states, inducing the need to research to solve these questions and create further visualizations to create a storytelling medium.

WORKSHOP



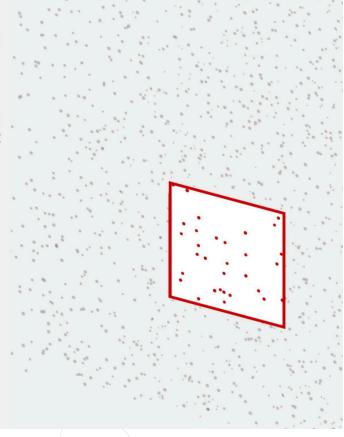
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Storytelling with Environmental Data through Informational Design

12PM October 22, 2021

Human experience is fluid, multidimensional, and multimodal

If data document something real about human experience, how can visualization be used to render the material and textual quality of that experience visible?

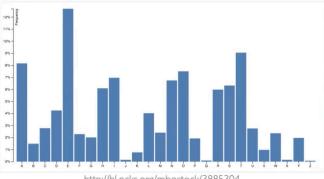


Steven Braun





Bar Chart

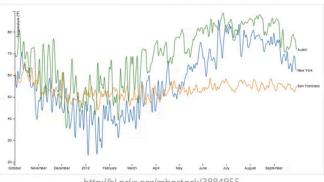


Revealing comparisons

http://bl.ocks.org/mbostock/3885304

Multi-Series Line Chart

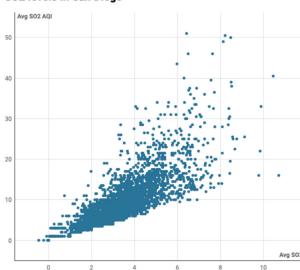
Changes over time



http://bl.ocks.org/mbostock/3884955

SJSU Workshop: October 22, 2021

SO2 levels in San Diego



- Download the CSV version of your data and load it into the <u>WTFcsy</u> tool at <u>Databasic</u>
 Investigate the distributions of the variables in your data, paying particular attention to
 the variables for CO, O3, NO2, and SO2 and the air quality indices for these particular

The shape distributions seem more varied. CO, CO AQI, NO2, NO2 AQI, and O3, are more spread out, with the first three having a dramatic decrease and the last two being more consistent in the values. O3 AQI, SO2, and SO2 AQI, are much more clustered, in compariso to the other distributions. Most of the values are in the lower ranges.









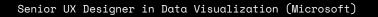
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Images and projects from lecture (left) Speaker presentation and student work from workshop (right)



"When I work on a design project, I focus on how I can convey exact meanings and frameworks [that] allows audiences or users to consume the data to have their clear storytelling or messages."





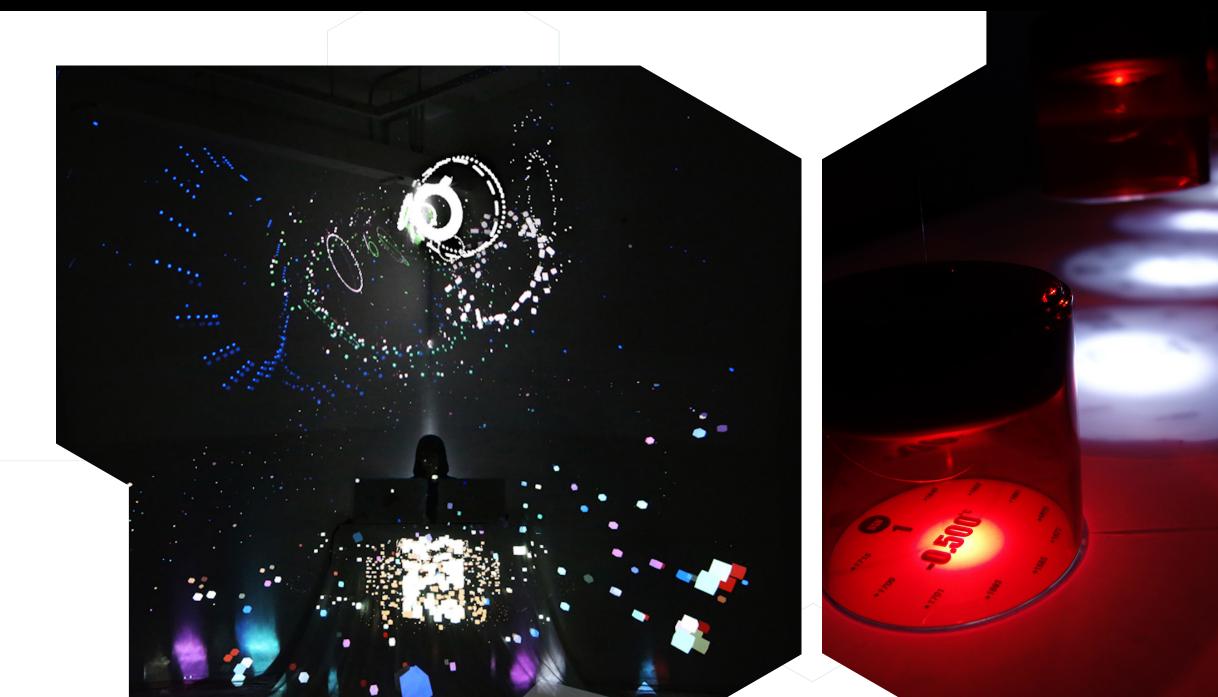
BIO

Hyemi Song is a designer, an artist, and a researcher. She is interested in data as a language for human communication and relevant practices associated with Information/Data Visualization, Data Sonification, Human-Computer Interaction, Visual Analytics, Data-Driven Self-Expression, and Walking as an artistic language.

In the professional field, based on her specialties (Data Visualization and UX/UI Design), she has extensively worked with international companies and institutions, including Microsoft, Naver, Samsung, Korea Telecom, RISD, MIT and more.

Her works have been featured in international awards, publications, and exhibitions such as Information is Beautiful Awards, IEEE Arts Program, Fast Company, Monthly Design Magazine, iF Design Awards, The Guardian, Raw Data: Infographic Designers' Sketchbooks, Seoul Design Olympiad, among others.

She received an MFA from Rhode Island School of Design and worked as a Data Visualization Specialist at MIT Senseable City Lab. Currently, she is working on various data-driven projects at Bohyemian Lab (Founder) and Microsoft (Senior Designer for Al platform: Machine Learning) in Redmond.



In the nature of things: Art about mobility, lightness and freedom. Simple creative acts of walking and marking about place, locality, time, distance and measurement. Works using raw materials and my human scale in the reality of landscapes - Richard Long-



LECTURE



Data and Human Communication

6PM November 10, 2021

Song's lecture focused on how she uses data to enhance human communication. The projects she presented used data from various sources and interpreted the data through various visual means. Her sources of data vary from her own personal diary entries to a multitude of Twitter posts, and data based on walking in New York Central Park. Many of these projects are spurred on by questions, followed by the collection and categorization of data, and finally encapsulating her conclusions through visualization. Her visualization methods are experimental, for example the 3D interactive environments created for her collection of works and sound and light immersion in her project Solar System, but emphasizes user experience and the ability to tell the story through the medium.





Data analysis & processing (5+15mins)



- 1. Reading your texts
- 2. Adding emotion labels to the table

A	В	С	D	E	F	G	н	1	J
Diary entries (selected sentences)	Years	Months	Days	Days of the We	Hours	Minutes	Emotions		
							Positive	Negative	Neutral
I'm afraid that people who know me as I usually am will di	1944	August	1	Tuesday	9		49	Υ	
I'm finally getting optimistic. Now, at last, things are going	1944	July	21	Friday	20		43 Y		
My parents have always spoiled me rotten, treated me kin	1944	July	15	Saturday	15		42	Y	
To fight the boredom and have something to do, I chattered	1944	July	8	Saturday	8		52		
If you know that about yourself, why not fight it, why not de	1944	July	6	Thursday	9		50		
Everything's all right here. Spirits are improving, our super	1944	June	30	Friday	13		19		

To do...

- 1. Reading the diary entries carefully.
- 2. Marking a "Y" tag in the Emotions column.
- 3. Customizing sub-features from Positive/Negative/Neutral to others such as Angry etc if you want.

2021-11-12 14:18:04

The workshop follows a simplified version of Song's process of creating her project, The Temperature of My Mind, but using diary entries of students or a sample of Anne Frank's diary. Song guided students through the steps of data preparation, data analysis and processing, sketching, visualization, and presentation.

WORKSHOP



Measuring the Temperature of My Mind

2PM November 12, 2021





"Usually when people think of data, its this cold, unpleasant, black, dark topic, and people just want to hide. It's the topic that they just don't want to think about. I think this conversation about data is going to turn upside down. I actually want my data."

Laurie Frick

lauriefrick.com

Data Artist

BIO

Laurie Frick uses data to examine what we can know about ourselves. In her hand-built installations, drawings and small works she experiments with how we will consume the mass of data increasingly captured about us. Evidence of her engineering background and long-history in high-tech are seen in the deep data analysis and detailed explanations of how this future will unfold. Her work about the future of data were recently featured on NPR's All Things Considered, Atlantic and Wired Magazine; she has been invited to talk at Google, SXSW, Stanford and TEDx. Recipient of numerous residencies and awards, including Samsung Research, Yaddo, Bemis and Facebook. She holds an MFA from the New York Studio School, an MBA from University of Southern California and studied at NYU's ITP program that melded art and technology into her current data work. Recent installations include public art in downtown Austin, CapitalOne, Facebook and Texas A&M. She has shown at numerous galleries in Los Angeles, New York and Texas with an upcoming show for 2022 at the Science Museum in Oklahoma City. Born in Los Angeles, she lives and works in Austin, Texas.







LECTURE



12PM March 17, 2022

Laurie Frick's lecture focuses on using data about mood, exercise, and personality to turn them into vibrant, carefully crafted art using various materials. The results look like abstract paintings and beautiful sculptures. Laurie wants to help create a future in which self-delusion is impossible. She thinks this shift is inevitable once people wake up to the transformational power of big data. In her lecture, she also introduced the public arts she created. Data may seem abstract, but Laurie aims to make it personal. She says the moment in time where the data that's gathered about us is astronomical. Her lecture enlightened SJSU students about how data can turn into not only beautiful art pieces but visually compelling measurements of personal narratives through big data.





Laurie gave a very exciting workshop about visualizing mood with papers as a hands-on art workshop. The workshop started with Digital Moodjam exercise (http://moodjam.com/). Students signed up on the website and created simple abstract patterns about their current moods. It's a simple way to create vertical or horizontal line patterns by selecting colors that reflect their moods. Students created the patterns intuitively and learned about how to express their moods visually. Based on the first exercise, students were given colored papers to create handcut paper moodjam in a small size. Laurie also gave slideshows about color associations, emotion, and color in squares with examples from abstract painters, artists, and designers. Students used colored papers to cut patterns for time tracking data and combine them with mood to choose colors for activity categories. The final results were beautiful and showed a variety of data visualizations. BFA GD students created absolutely stunning results that impressed Laurie very much.

WORKSHOP



The Secret for How to Turn Your Everyday Life into Artful Pattern

1PM March 17, 2022





Frick giving instructions for the workshop (above) and students working (bottom)



Student work (upper left) and Frick examining the results (bottom left)











"I'm attached to the word 'artifact' in a very different way in terms of something that has its own presence separate from any type of mediation—in something that is very physical and material."

Joshua Stein

radical-craft.com

Professor of Architecture (Woodbury University)

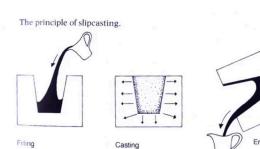
BIO

Joshua G. Stein is the founder of Radical Craft and the co-director of the Data Clay Network, a forum for the exploration of digital techniques applied to ceramic materials. Radical Craft is a Los Angeles-based research and design studio operating between fields of architecture, art and urbanism. Radical Craft advances design saturated in history (from archaeology to craft) that inflects the production of contemporary urban spaces and artifacts, evolving newly grounded approaches to the challenges posed by virtuality, velocity, and globalization. Recent projects engage earthen materials that resist easy manipulation, whether in raw or consolidated states. Stein has taught at the California College of the Arts, Cornell University, SCI-Arc, and the Milwaukee Institute of Art & Design. He was a 2010-11 Rome Prize Fellow in Architecture, and is currently Professor of Architecture at Woodbury University.





Joshua Stein Joshua Stein



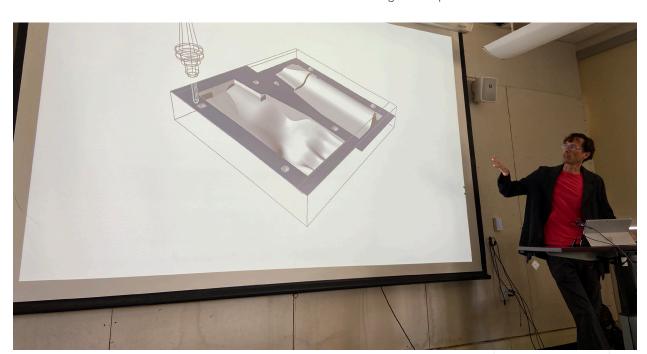




Artifacts, Data, and Otherwise

11AM March 23, 2022

Joshua Stein introduced his practices on data exploration using digital techniques and ceramic materials. He explained his studio, Radical Craft, and various projects, including Isochronic Mountain Buffalo, the Geological Atlas of the Built Metropolis, and Quarry Cast. Isochronic Mountain Buffalo is a topographic model that documents the collective time devoted to moving from the periphery of the city to its center, specifically Buffalo City Hall. The Geological Atlas of the Built Metropolis reimagines the city's seemingly discrete architectural objects as a continuous geological landscape that traces material trajectories backward in space and time, suturing the city with the sites of extraction and production and the laboring populations it has historically attempted to push outside its identity. This Quarry Cast identifies the large-scale, land-form sculptures inadvertently created through the human process of mineral extraction as it "liberates" a precise form from the "overburden" of the surrounding landscape.





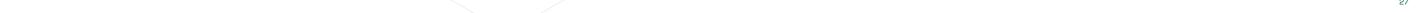
Joshua Stein had a great workshop with Interior design students and graphic design students. They used the current state of the seven reservoir data in Santa Clara County and cast the data with interior design students. Graphic design students came up with ideas about incorporating augmented reality design on the sculptures.

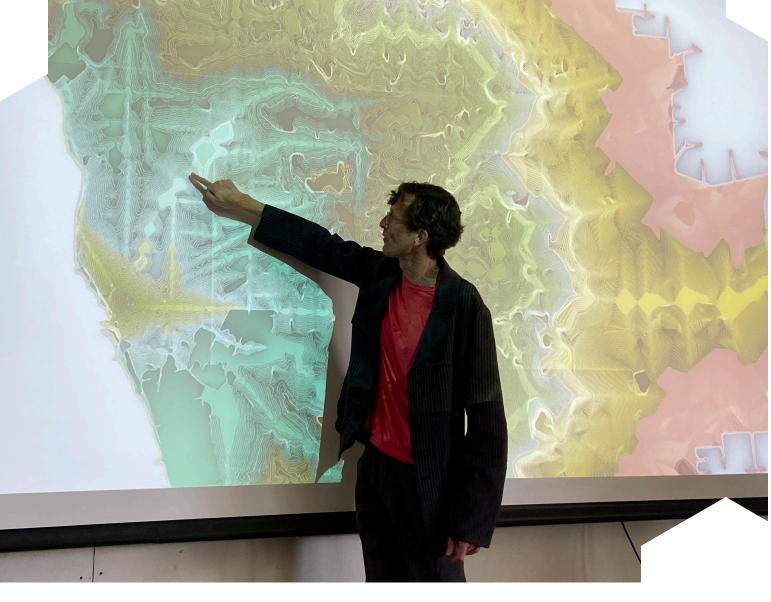
WORKSHOP



Radial Craft Workshop

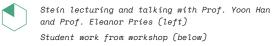
Starting March 22 til the First Week of April











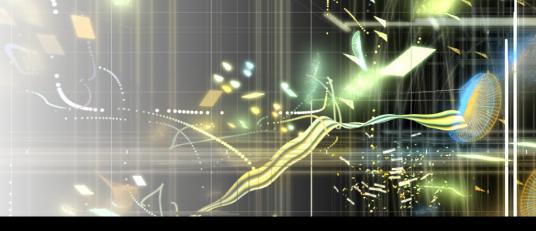








"How can we create new kinds of connections between layers and parts? What are the data driven narratives? What are the data driven materials—forms in the virtual space? How can we use algorithmic approach to create new kinds of indeterminacy and transcend choice operation?"





Weidi Zhang

zhangweidi.com

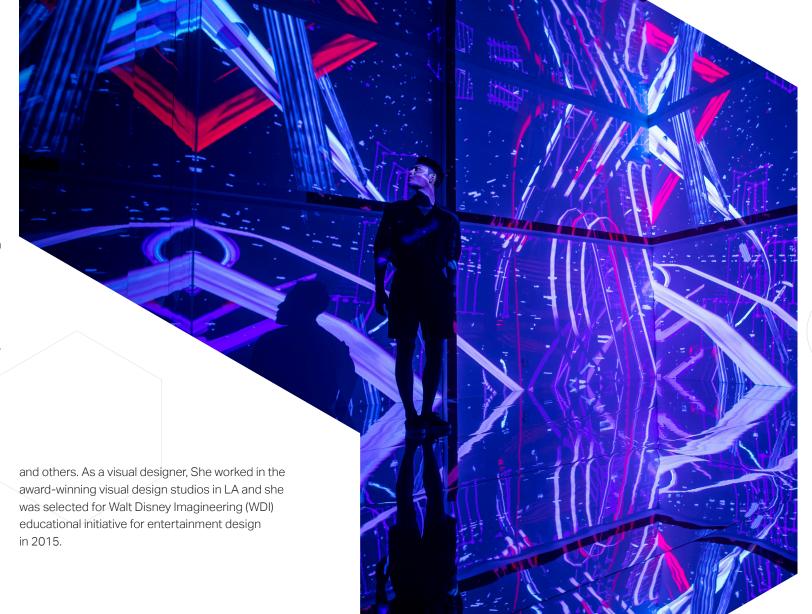
Ph.D. Candidate (UC Santa Barbara) and Lecturer (Ohio State University)

BIO

Weidi Zhang is a new media artist/researcher currently based in Los Angeles. She was born and raised in Suzhou, China, a beautiful historical city renowned for its unique architectural style of Chinese gardens. Inspired by a Chinese garden design strategy-Borrowed Scenery-she observes and frames her surrounding environments as an ever-changing multi-layered assemblage.

Currently, she is a Ph.D. candidate in the Media Arts and Technology Program and a graduate researcher in Experimental Visualization Lab at UC Santa Barbara. She taught at UC Santa Barbara and The Ohio State University. She holds her MFA degree in Art + Technology at the California Institute of the Arts and a BFA degree in Photo/ Media at the University of Washington, Seattle.

Her interdisciplinary art and design research investigates A Speculative Assemblage at the intersection of immersive media design, experimental data visualization, and interactive AI art. Her works are featured at international awards, exhibitions, festivals, and conferences, such as the Best In Show Award in SIGGRAPH Art Gallery [US], Prix Trames Sonore Award in Society For Arts and Technology [CAN], Juried Selection in Japan Media Arts Festival [JP], ISEA, shortlisted for Lumen Prize [UK], Times Art Museum [CN], SwissNex Gallery, SIGGRAPH ASIA, CVPR, IEEE VISAP, Zeiss-Planetarium Jena (GE), Planetarium 1(RUS),





Data Authorship & Data Oblivion

When we try to <u>preserve</u> or <u>delete</u> our own stories in the digital landscape, Do we still have the authorship of them?

Are they in a constant shift of meaning and representation?

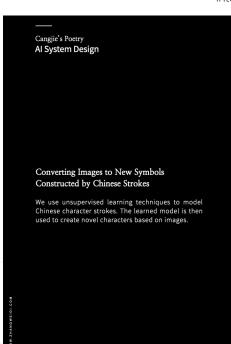


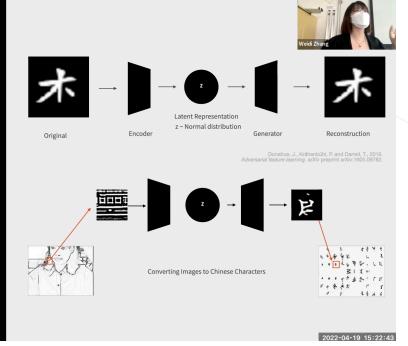
LECTURE

A New Assemblage: Image-Data-Based Interactive Visualization of a Human-Machine Reality

3PM April 19, 2022

Weidi's lecture was a highly inspiring one for students who have never done virtual reality or mixed reality projects. Weidi introduced various VR projects with background, research, and storytelling. One of her projects, "Cangjie's Poetry," is an intelligent multimodal system designed as a conceptual response to the future semantic human-machine reality. Weidi's team trained a neural network to learn the constructions and principles of over 9000 Chinese characters. After successfully training, Cangjie can interpret images through the lens of Chinese characters and produce new symbols constructed by Chinese strokes. Weidi shared various interesting stories, insights, and knowledge about mixed reality, artificial intelligence, human-computer interaction, and speculative assemblage, which is at the intersection of immersive media design, experimental data visualization, and interactive AI art as the artist defined.







Weidi Zhang gave 3 hours workshop about creating Bauhaus Style Composition in Virtual Reality (VR) by using Unity software. This workshop was for students who have never done any VR design before. Students first understood what VR is and learned the basic functionalities and interface of the Unity software. Students created various 3D models based on Weidi's demos and examples. The outcomes are surreal worlds and stunning images in VR!

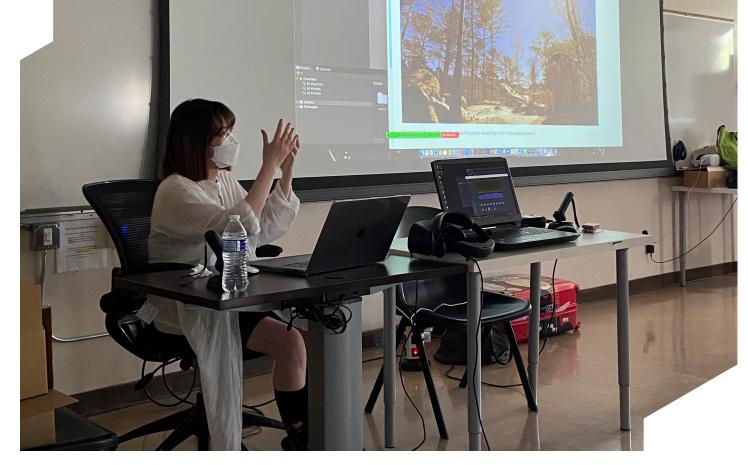
WORKSHOP

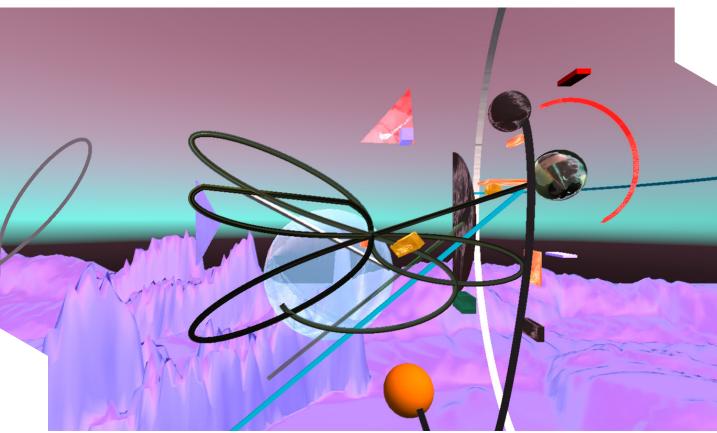


Visualizing a Bauhaus Style Composition in Virtual Reality

3PM April 20, 2022

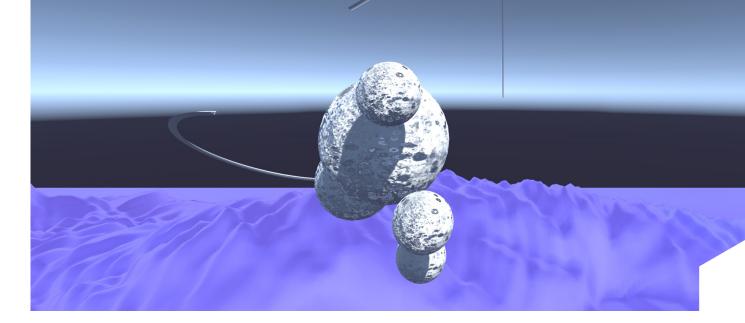
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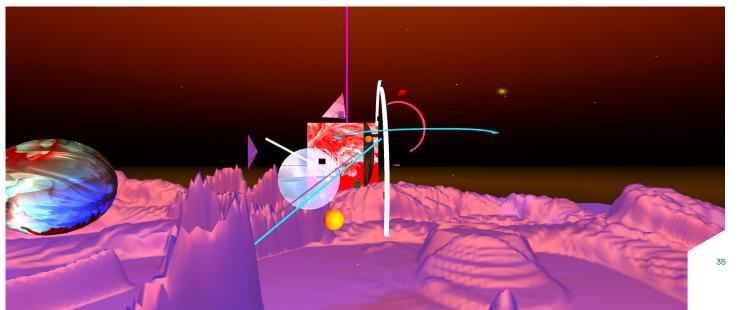


Zhang presenting in front of students (upper left)
Student work from workshop (lower left and right)











"As a designer, I need to consider not only on screen user interaction design—I also consider what's beyond the device that users have to interact."



Eunjoo Kim

linkedin.com/in/eunjookim

UX Design Lead at Google

BIO

Eunjoo Kim is a UX designer and design strategist with over 25 years of experience leading teams and delivering the latest in UX design across major global technology companies including Samsung, Motorola, Qualcomm, and Google. As an innovative and consistently forward-thinking professional, she has led the advancement of UX designs in new emerging product categories including voice assistant(AI), wearables, augmented reality, and mobile. Additionally, She was shortlisted as one of the top 18 women leading the way in wearable tech and VR in 2016, and top 50 wearable tech gamechangers for 2016 by Wearable magazine. She is passionate about humanizing technology to design for everyone. She holds an M.Des in Human-Centered Communication Design from Illinois Institute of Technology.





DON'T FORGET HUMAN BIASES...

DESIGN FOR EVERYONE

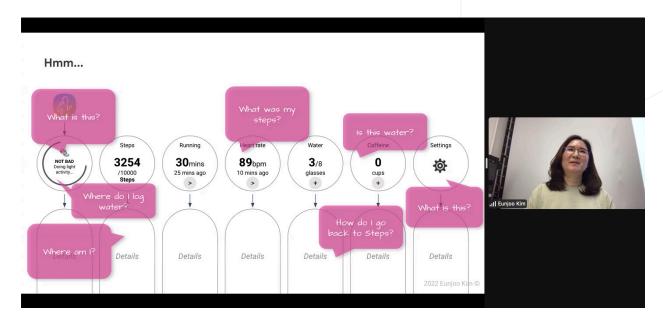


LECTURE <

Future of UX

5PM May 23, 2022

Eunjoo Kim's lecture consisted of four parts: Wearables, Machine Learning, Conversation Design, and Al. She explained important problems and issues on each topic and introduced her practices and design works at Google. According to her, Conversation design incorporates natural, real-world conversational behaviors into the interactions between users and a system. She used an interesting example (ordering a sandwich at Subway) and emphasized how important intuition and human interaction are in the conversation design. In user experience design, the conversation design should cooperate with users to be more personal, emotional, and transparent as it's hard to self-troubleshoot.





1. WEARABLES

DESIGN FOR USABILITY

2. MACHINE LEARNING DESIGN FOR EVERYONE

3. CONVERSATION

DESIGN WITH
COOPERATION

DESIGN FOR HUMAN

4. AI



Coming Back Together!









Acknowledgements & Organizers



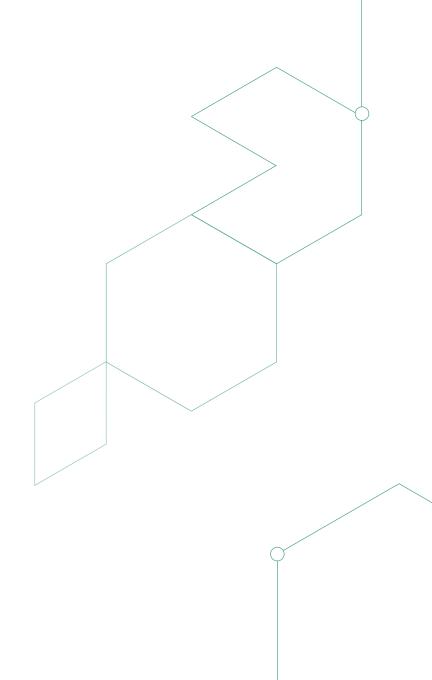
This program is sponsored by Artistic Excellence Programming Grant (AEPG) AY 2021-2022 from the College of Humanities and the Arts at San José State University. We appreciate the generous support for this program. Thanks to the support, students learned a lot about various interesting topics and had chances to meet with international scholars, artists, designers and researchers. We thank all the guest speakers and mentors to make all the events inspiring and insightful for our students. We appreciate their time, efforts and considerations for these great events. We also thank all the participants for the lectures and the workshops. We hope to see them again in future guest speaker lecture and workshops. Lastly, three student assistants, Chako Shinmoto, Mary Elaine Gutierrez, and Grace Kusuma worked hard on the visual identity design, website design and catalog design. Great job and thank you for your hard work!







Student Assistant
Grace Kusuma (BFA Graphic Design Student)





data-ai.design

This guest speaker lecture series was sponsored by the Artistic Excellence Programming Grant 2020-2021 from the College of Humanities and the Arts, San José State University.