

What are autographic visualizations?

The term refers to **things that create a record or trace of something that's happened to them**—how they are used by people, or how something in the surrounding environment affects them (they are forms of *indexical* visualization, if Peircean semiotics is your thing). Sometimes the trace is accidental or incidental, or solely a side-effect of a property of the materials. But it can be designed intentionally, and perhaps can reveal patterns which would otherwise be invisible.

Our Design for Environments students have taken this prompt as a starting point and created a wide range of interactive projects which build on and expand the idea, addressing everything from physicalizing a person's heartbeat through ferrofluid, to a VR physicalization of race and privilege. We have sonification of sunsets, new kinds of educational building blocks, ways to experience laughter, 3D printing as a real-time visualization of a human-machine conversation, synchronized breathing, a physicalization of the thread of a conversation, and design fiction extrapolating from your digital traces.

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Lockton, D., Ricketts, D., Aditya Chowdhury, S., Lee, C.H. (2017). 'Exploring Qualitative Displays and Interfaces'. CHI EA '17: ACM CHI Conference on Human Factors in Computing Systems, Denver, Colorado, 6-11 May 2017. Extended Abstracts, 1844-1852.

Offenhuber, D. (2020). Data by Proxy — Material Traces as Autographic Visualizations. *IEEE Transactions on Visualization and Computer Graphics*, vol. 26, no. 1, pp. 98-108.

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environments.imaginari.es

Autographic Visualizations

The logo for Imaginarie's Lab at Carnegie Mellon University. It features the text "imaginariés lab" in a blue, lowercase, sans-serif font, with "Carnegie Mellon" in a smaller, blue, uppercase, sans-serif font below it. The word "imaginariés" has a stylized graphic element above it consisting of several small squares arranged in a grid-like pattern.

The logo for Carnegie Mellon Design. It features the text "Carnegie Mellon" in a blue, uppercase, sans-serif font above the word "Design" in a larger, blue, uppercase, sans-serif font.

Exhibition: March 5, 2020



Scenes from the first half of the semester, including our workshop with Marion Lean (RCA) on data materialization

Thanks to everyone who's helped with the projects and the exhibition in different ways, including Dina El-Zanfaly, Temple Rea, Josiah Stadelmeier, Tamar Zea-Wolfson, and the Frank-Ratchye STUDIO for Creative Inquiry.



Sabrina Zhai, Miranda Luong, and Meijie Hu
Synchronized Breathing

Breathing is generally an innate bodily motion; our bodies may breathe, but our minds rarely place thought into the action. Drawing inspiration from the experiences felt by a person when lying their head on another person's chest, we magnify the motion of breathing by bringing this normally isolated experience into a collaborative space. Through this breathing exercise, we hope to bring about moments of synchronized breathing between partners and incite people's exploration into their breathing motions.

Jason Zhu
Heartbeats

I'm addressing how we might physicalize a person's heartbeat by exploring the properties of ferrofluid and electromagnetism. The aim is to create an experience that enables people to better understand a previously invisible phenomenon.

Gautham Sajith
The Color Line

I'm addressing the topics of race and privilege, an often-invisible phenomenon (especially for those in positions of privilege) which is physicalized through the Color Line activity. Through exploring the properties of a shared digital answer database, and a virtual reality visualization, the aim is to arrive at an experience which physicalizes the Color Line activity and allows people to embody the emotional and moving effects of the activity even in cases when they may not be able to be in a shared room with that many people.

Danny Cho

Arachne

I'm addressing the topic of **conversation dynamics**. Through exploring the properties of thread and voice recognition via an Arduino, the aim is to arrive at an experience that encourages the audience to reflect on their behaviors in a conversation, and savor it even after the actual conversation, in physical form.

Connor McGaffin

Contractions of the Diaphragm

I'm addressing the topic of **laughter** through exploring the properties of an isolated moment of lighthearted surprise. The aim is to arrive at an experience where people contextualize their own laughter among a collection of other people's to see the beauty of laughter more objectively.

Matt Nam

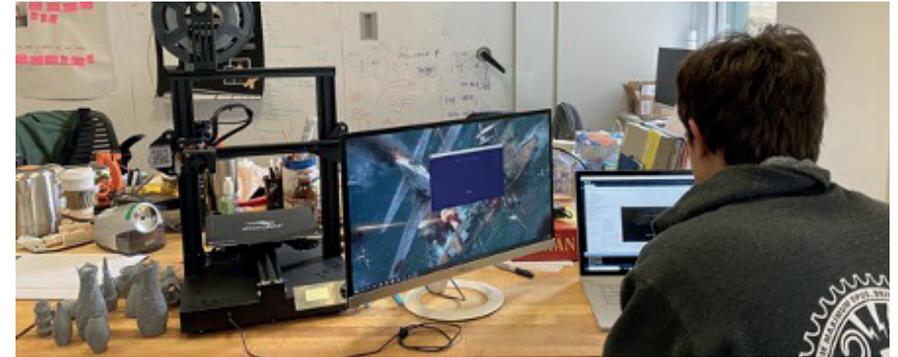
Digital Traces

I'm addressing the topic of how **digital traces** become the source of generating algorithms to match users to advertisers on social media platforms. This process creates a representation of the computational inferences regarding my values and societal forces that nudge my decision making. Taking a list of advertisers on Facebook, I began to create fad artifacts based on the different products and services of companies in order to visualize my values into a novel form that speaks a new design language. These fad products are generated representations of me because social practices such as engaging in the use of products are reflections of social norms, helping us to gain insight into a person's profiles.

Facebook Advertisers

List of advertisers that has been matched with my account based on personal information available through Facebook

eForo Category- Finance Product/Service- Social trading and multi-asset brokerage company that focuses on providing financial and copy trading services	11STREET Category- Shopping Product/Service- Online shopping platform based in Seoul, South Korea	GNC Live Well Category- Health/Nutrition Product/Service- Health and nutrition related products retailer	Innisfree Category- Cosmetic Product/Service- Cosmetics brand based in Seoul, South Korea
NYTCooking Category- Media/Food Product/Service- Subscription service of the New York Times. It is a digital cookbook and cooking guide	Grubhub Category- Food/Delivery Product/Service- Food delivery of local restaurants	CheapOair Category- Travel Product/Service- Mexican inspired food franchise brand	Tacobell Category- Food Product/Service- Men's cosmetic brand
BestBuy Category- Electronics/Shopping Product/Service- Multinational electronics retailer	Farfetch Category- Fashion Product/Service- Online fashion shopping website for luxury brands	Gremlin Category- Tech/Business Product/Service- Chaos engineering platform service	Polo Ralph Lauren Factory Store Category- Fashion Product/Service- All gender retail range to luxury fashion brand
The Action Network Category- Sports/Entertainment Product/Service- In-depth sports betting content platform	goPuff Category- Food/Delivery Product/Service- Stock and convenience store delivery service	NFL Category- Sports/Entertainment Product/Service- American football organization	Times Journeys Category- Media/Travel Product/Service- Educational travel program by The New York Times journalists
Frame.io Category- Tech/Creative Arts Product/Service- Cloud service for	PylmageSearch Category- Tech/Education Product/Service- Image search engine blog written by Adrian Rosebrock. Subscriptions to courses and other educational materials	Health eCareers Category- Business/Health Product/Service- Career platform specialized for medical industry	Vimeo Category- Media/Streaming Product/Service- Ad-free video platform
		Banggood Category- Shopping	LinkedIn Learning Category- Education Product/Service- Website offering video courses taught by industry experts in software, creative, and business skills
			Uber Category- Tech/Transportation Product/Service- Peer-to-peer ride-sharing service platform
			Samsung Category- Shopping
			The New York Times Category- Media/News/Politics Product/Service- Multinational news organization
			Design Files Category- Creative Arts Product/Service- Digital resources and assets for designers
			SEENSE Category- Fashion/E-commerce Product/Service- Luxury fashion shopping website
			Segment Category- Tech/Business Product/Service- Customer data platform
			RVCA Category- Fashion Product/Service- Sports apparel brand
			Blizzard Entertainment Category- Game/Entertainment Product/Service- Game developing company
			HelloFresh Category- Food/Delivery Product/Service- Home-cooking subscription service
			PostMates Category- Food/Delivery Product/Service- Food delivery service
			Lyft Category- Transportation/Tech Product/Service-



Davis Dunaway and Vicky Zhou

Human Vase

We are addressing **human and computer conversation**, through exploring the properties of physical artifacts representative of "human-ness" within conversations. Specifically, we want to explore this by having two humans watch a 3-D live print, which will reflect the level of "right" and wrong. The aim is to arrive at an experience that sparks conversation, and makes us wonder where the future of human conversation lies, and where do automated bots play into this, if at all?

Amber Lee

Sound of the Sky

I'm addressing **audibly supported visuals** by deriving sounds from images through software and human interpretation. With the aid of image-reading software, sounds can be generated by scanning images (linearly) to detect patterns in lightness and darkness. However, software lacks the human ability to interpret colors (and their transitive emotions). To address this gap, the software-generated sounds are matched with harmonies from a color-coded key derived from human interpretation. The sounds and crowdsourced images will be paired for viewers to experience as if hearing the images themselves.

Nick Marotta

A Window Into Child's Play

I'm addressing **participation and collaboration in children's play** through exploring the properties of play blocks. The aim is to arrive at an environment that glanceably communicates the dynamics between children, giving adults and playwrighters access into the complex social dynamics at play and the ability to address them more tangibly.