

Christian is the founder of Schema Design, a design and visualization firm based in Seattle, Washington. Christian has always had an artistic inclination, and majored in art in high school. However, when it came to college, he chose to study business out of fear that he wouldn't be able to find a job otherwise. After two years of studying business, he decided to take the risk, move to New York, and pursue design. At Parsons School of Design, the program focused on information design, a topic that really resonated with Christian. Having pursued business for a few years, he had the left-brain-right-brain dichotomy and information design gave him a way to combine those two hemispheres of the brain. After graduating from Parsons, Christian went to Yale Graduate School to study graphic design, where he was able to figure out what he wanted to do with the craft and technical skills he acquired at Parsons.

During his time from Parsons to Yale, he met and formed relationships with many people that influenced him greatly to start his own business. Three people in particular stand out to him. First, at Parsons, he met a designer from Hong Kong, now based in New York, who introduced Christian to Yale's graphic design program and inspired him to apply. At Yale, Christian's thesis advisor and eventually his co-worker had a considerable impact as well. Christian worked for an Italian designer based in New York during his undergraduate years at Parsons and even after that, and Christian says that if there is one person who really inspired Christian to start a business, it would be him.

In 2019, Christian presented a TedTalk about data visualization, and in his presentation, he talked about his project, *Invisible Cities*. This project measured social data from Twitter and found patterns between tweets, allowing people to discover and see social data as a physical landscape. The idea to create this project came from Christian's personal backstory. Growing up, Christian felt disconnected from any culture. Although he was born in Germany, he never felt connected to German culture, and similarly, in the U.S., he has always felt like an outsider. Christian knew that there were others who experienced a similar struggle, and when he went to college in the U.S. he had the chance to explore individual expression and reflect inward to see how he could connect this feeling to information design. This is when he started getting into data visualization. *Invisible Cities* was the outcome of his graduate thesis, although at the time he started the project, he was already teaching graduate courses at New York University. This project focuses on patterns within cities, the notion of urbanisms, large systems, and how these three factors could be represented. His idea was that cities could be looked at in a different way-- through its architecture and the behaviors of its inhabitants.

As mentioned above, Schema Design is a design and data visualization firm, and what they care about is creating data driven experiences that can help people create knowledge and make better decisions to take action. Data visualization is composed of two main components: storytelling and discovery. Storytelling gives someone the ability to communicate a message in a very visceral way, so that people can internalize the message and respond to it in a more emotional and direct way. Humans are visual

creatures, and we view the world through our eyes, and this is something that Schema Design uses to its advantage when creating data visualization experiences. The second component, discovery, focuses on creating open-ended platform space-- for example, invisible cities-- so that people can explore and uncover their own stories within that information. Discovery is especially important because we are so often spoonfed pre-digested facts and stories, especially during this politically polarized time, that there is real power in being able to find your own story aside from what everyone is telling you what you should believe in.

Data visualization at its core is about taking measurements from something that is happening in the world and aggregating it to where we can see patterns. This is exactly what Christian's role is in the Bhungroo Irrigation project. What he was interested in was to find a way to bring the stories to life-- those who were interviewed by Professor Christoff and Jamie Sommer-- in a way that could feel more discoverable by a broader audience. In particular, Christian wanted people to not only be able to read about the individual stories, but also see what some of the commonalities between the individuals are. For example, looking at the gender breakdown, or the literacy rate in order to enrich the overall experience and allow the audience to directly engage with the subject matter.

There have been many changes in the data visualization field since Christian started working in this area, about 20 years ago. In the beginning, data visualization started off with static formats such as infographics, where stories would be told through diagrams, pictures, and maps. Around the time he was graduating from Yale, he started to see more interactive connections and the creation of interactive tools that enabled people to create projects that had never been seen before. These tools made it possible to think about data visualization in different ways-- it was no longer about experimentation, but more about making better decisions to take action. Overall, the positive side to changes in data visualization methods is that people now have a greater data literacy, but the less positive side is that the field has become more solidified. What he means by this is that in the past, methods of data visualization were much more experimental, causing people to create interesting work that no one had ever seen before; now, people tend to fall back on the conventional and established methods. Thus, Christian wants to keep pushing the envelope on what is possible through his business; and continue to explore the experimental side of data visualization.

Design thinking and data visualization are the two ingredients for creating data driven, self-guided experiences because it's all about building platforms that people can use to discover their own stories. On the one hand, there is the component of figuring out how data is represented, and on the other hand, there is the component of dealing with usability and how people engage with digital systems. The intersection between these two ingredients and education comes to the point that data visualization is ultimately about the creation of knowledge-- understanding our world better by extracting meaning from

the environment around us and forming hypotheses that will guide our actions. Ultimately, data visualization is a way for us to conceptualize the world around us and our own role as individuals in the world that we created for ourselves.

