



**My Life with Screens:
An AutoEthnography through the Third Eye**



by Tuba Ozkan

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An AutoEthnography through the **Third Eye**

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Abstract

An average American spends around ten hours per day consuming media, mostly by either passive or active interaction with screens. How we receive and share information, and communicate and interact with others, has also been reformed by the behavior around interacting with screens. It's remarkable that — given everything we do with and perform on screens — people are now spending almost half of their life staring at digital screens. How problematic is this habit? What impact does it have on individuals' behavior, state of mind, and relationships? How can we become more aware of (monitor) and critical about our own daily interactions with screens?

"My Life with Screens: An Autoethnography Through the Third Eye" is a critical design practice with resulting artifacts that reveal an example of how much — and the quality of — time some of us watch screens. At the methodological center is a discursive design product, the Third Eye: A smart wearable that acts as an augmentation of human vision. Computer vision and AI technologies allow it to detect when its wearer is interacting with a screen, record the time spent in this activity, collect that and other related data, and analyze it.

Digital screens are omitted from this work's design, framing the resulting artifacts as part of an experimental media archaeology that reveals the presence of the screen through its absence. By recording the screen's content without context the study rejects the power of the screen. At the same time, the screen's value is idealized, as its digital content is repurposed and preserved (denying its disposability) using analog media and precious instruments.

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1. Introduction

“My Life with Screens: An AutoEthnography Through the Third Eye” is a critical installation piece that aims to impulse audiences about the time they spend by interacting with digital screens.

At the beginning, the intensity of my personal daily experience with digital screens drive me to think critically about our habitual relation with digital interfaces. Learning the fact that an average person spends almost half of the day (which refers to half of the life) by staring at a screen made me question the behaviour of screen interaction in a more general context and I found myself examining ontology of screens. Why do we need the screens? In the last decades, how we receive or share information, communicate and interact with others, entertain ourselves has been reshaped by the behavior of interacting screens. In other words, accessing various forms of information is the overall goal of screen interaction today.

People have been delivering information by using different mediums for centuries. For instance, a cave drawing or an ancient tablet have been the mediums for providing information as like as today’s smart phones, televisions, laptops etc. The major difference between analog and digital forms of transmitting information is the density of the content. While a cave drawing is containing curated and limited information about a specific topic, a digital screen is like a virtual window opening to a world of an infinite amount of information. The infinite content affects the behavior of viewer in different ways. It can cause a lack of attention to own environment or the viewer’s concentration on the content can be distracted easily by a different window popped up on the screen.

This project aims to examine how our everyday interaction with screens is changing our behaviors of receiving information and reforming our attention on the environment. There

are three core outcomes of this project. Third Eye itself is a wearable which works with a camera and Raspberry Pi. When Third Eye is activated by the user, it takes photos every thirty seconds, sends those images to Google Cloud by using Google Vision API, receives AI's responses, if there is a display in the photo stores the image, and if there is no display in the photo, deletes the image. On the other hand, Monotonous-Scope is an experiment to externalize the data collected by the third eye, it visualizes the data (photos of screens) collected by the third eye through a tangible object. The third outcome is an exploration on the nature of movement-image. By shooting videos during my performance while wearing the third eye in many different contexts, I had a collection of movement-images. To show this content in a video-like analog form, I wanted to use lenticular material which displays different images according to the position of the viewer. By placing different frames from the videos on the surfaces of objects and adding lenticular effect on top of some, Artefact tries to reproduce and make a collage out of those videos in an analog form. Both objects are an analog exploration of digital screens and aim to give audience an opportunity to physically interact with the curated content.

2. Rituals Around Technology & Screen Culture

People spontaneously adapt technological improvements to their daily life and technology becomes harmonized with the culture inevitably. How does technology shape our daily habits?

2 .1. Black-Boxed Experiences

David Bell emphasizes the fact that technological artifacts are normalized and become embedded in their users' everyday life.¹ Technology reformulating how people live and experience their environments, while constantly producing its own culture. All technological ideas are subjected to an industrial progress, and transformed into minimal devices meeting users needs.² Complexity of technological systems are packaged as black-boxes to function properly for solving everyday problems. Black-boxes are everywhere, at home, at workplaces, at streets, in our pocket etc. (Figure 1) From smartphones to TVs, laptops to household appliances, the practice of everyday life has been redefined by rituals around black-boxed technologies.

¹ David Bell, *Science, Technology and Culture*, McGraw-Hill Education, 2005.

² The term black-box has been used in engineering to ease the complex machinery and systems of a technological device. According to Latour# the user of a black box does not need to understand the inner machinery and logic behind the technology, knowing the inputs and expected outputs is enough to interact with the black-boxed device for an ordinary user. Eventually, the user becomes the consumer of technology.

Bruno Latour, *Science in Action: How to Follow Scientist and Engineers Through Society*, Cambridge Harvard University Press, 1987.



Figure 1: Black-boxed devices.

The lexical meaning of term ritual is “the established form of a (religious) ceremony, a system of rites; an act or series of acts regularly repeated in a set precise manner”³ Catherine Bell defines ritual as “particularly thoughtless action - routinized, habitual, obsessive, or mimetic - and therefore the purely formal, secondary and mere physical expression of logically prior ideas”. For F.Staal, ritual is “pure activity without meaning or goal”, on the other hand Levi-Strauss describe it as “a favoured instance of a game”.⁴ Although rituals originally ties with religious acts, in this paper they refer to non-religious rituals which have been shaped by modern culture and lifestyles.

While religious and cultural rituals provide very different experiences, these experiences demonstrate a common pattern. In the most general sense, rituals require ceremonial act, communal involvement, repetition, and spatiality. All these features can be seen in the rite of watching TV with family on Sunday nights as well as the rite of visiting the church with family on Sunday mornings (Figure 2).

³ Merriam Webster, October 2017

⁴ Catherine Bell, *Ritual Theory, Ritual Practice*, Oxford University Press, 1992.



Figure 2: Weeknight Dinners by Lois Bielefeld.⁵

Black-boxed technologies that we engage with in modern life stimulate individual physical acts. Screen engagement does not provide interactions with others physically. Even though, we can interact with people through screens virtually, and this interaction might include most of the necessary features that has described in the definition of ritual, because of the lack of spatiality and embodiment, it can not sustain all the features of a complete ritual. But how can everyday technology provide socially rich communal rituals for users that contains physicality as well?

Looking at the different technological household devices from a cultural perspective reveals their power of shaping lifestyles. For instance, Bell describes a refrigerator as a device changed how we store and consume food. It became an important part of modernized domestic life. It functions as a device that keeps things cooler and frozen, and

⁵ <http://www.huckmagazine.com/art-and-culture/photography-2/lois-bielefeld-photography-weeknight-dinners-usa/>

it does its job well. On the other hand, its stainless steel vertical surface transform a memory wall in time which has been covered by notes, photos, magnets, postcards etc. by family members. In this example, there is nothing related with functionality, it relates with culture and lifestyle. A refrigerator emerges some ritualistic actions around itself and defines a space for the physicality of memories that ties with family and friends.⁶

Zatgowska gives the example of dishwasher. He describes the fact that how a domestic device like a dishwasher have a potential to change the acts of family members, the dynamics of the work sharing politics in the family. Her findings prove that this machine has a great impact on the culture of Polish families.⁷

A television gather family members around on Sunday nights and become a sacred object, a dishwasher redefine family politics, a refrigerator reshape how we store our memories, a tablet changes how we play games with our kids, a smartphone describes our social relations with others etc. What should we expect next?

2 .2. Life with Screens

Everyday usage of technology has been reduced to a futile relationship between people and black boxes through their smart screens (phones, personal laptops, tablets and some other smart electronics). It affects how we act bodily and socially and how we respond to our environments.

“While typing on a laptop... our conscious is primarily occupied by the content of what we are typing on the laptop, we do not vividly experience our fingers on the keyboard. We use the body, but we rarely reflect upon it.”⁸

⁶ David Bell, *Science, Technology and Culture*, McGraw-Hill Education, 2005.

⁷ Magdalena Zatgowska, *Society, Culture and Technology at the Dawn of the 21st Century - Washing Machine and dishwasher: Towards to Cultural Transformation of Polish Households*, Cambridge Scholars Publishing, 2010.

Screens are main interfaces of everyday technological devices. Over 36 percent of the world's population is projected to use a smartphone by 2018.¹⁰ The number of smartphone owners in US reached %77. The phones are the main interactive surfaces people use everyday. While the smart phones and laptops are becoming a big part of our daily interactions, being online anytime anywhere becomes a normal phenomenon. Accordingly the screens are redefining human's phenomenological existence (Figure 3).



Figure 3: Everyday interaction with screens.¹⁰

⁸ Frédérique de Vignemont, "Bodily Awareness," The Stanford Encyclopedia of Philosophy (Summer 2016 Edition), Edward N. Zalta (ed.), <http://plato.stanford.edu/archives/sum2016/entries/bodily-awareness/>.

⁹ "Number of smartphone users worldwide from 2014 to 2020 (in billions)," Statista, Accessed May 9, 2018, <https://www.statista.com/statistics/330695/number-of-smartphone-users-worldwide/>

¹⁰ "Smartphones out on subway Hong Kong". Zdnet, Tyler Falk, August 15, 2013, <https://www.zdnet.com/article/smartphones-are-officially-more-popular-than-feature-phones-worldwide/>

The screens help us to reach information effectively while making us more individualistic at the same time. Because of the nature of the behaviour of looking and interacting with screen, human are losing their attraction to the environment during this behaviour. It usually makes a person blind to outside stimulus, more open the stimulus appearing on the screen like notifications from social media.

You might probably had that awkward moment with at least one of your friends. That moment of trying to talk or contact with him/her when s/he is right next to you but completely on his/her phone. This innocent interface intended to make our life easy and practical, becomes a concrete wall between our body and our environment. On the one hand smart phones and laptops are like an extension of our body and mind today, they are an access to the virtual pools of relations and infinite information, while limiting our body experience drastically. "The screen is the locus of lost dimensions of space and technological transformations of time. It modifies our relation to space, a surface-mount for its "accelerated virtualization".¹¹

The importance of the body experience toward the mind has become the subject of phenomenology since Cartesian dualism began to be examined by philosophers like Husserl and Merleau - Ponty.¹² The phenomenology of embodiment offers that the body is an alive center of experience and sensations play a key role to explore the environment.¹³ Beside the general acceptance, Merleau- Ponty suggests the togetherness of conscious and body by mentioning that "The body is not one more among external objects."¹⁴

¹¹ Anne Friedberg, *The Virtual Window*, MIT Press, 2006.

¹² Russell Keat, "Merleau-Ponty and the Phenomenology of the Body" (Unpublished Manuscript, University of Edinburgh, 1982), <http://www.russellkeat.net>, 1-2.

¹³ Elizabeth A. Behnke, "Edmund Husserl: Phenomenology of Embodiment," *Internet Encyclopedia of Philosophy*, 2016, <http://www.iep.utm.edu/husspemb/#H5>.

¹⁴ Maurice Merleau-Ponty, Trans: Donald Landes, "Phenomenology of Perception," (London: Routledge, 2012)

Noe asserts that “perceiving is a way of acting and perception is not something that happens to us, or in us, it is something we do... The world makes itself available to the perceiver through physical movement and interaction” as similar with the phenomenologists.¹⁵ From a phenomenological perspective, the world is not available that much to the perceiver anymore because high amount of screen interaction weakening human’s relation with their surrounding bodily.

A recent report shows that the average American spends more than ten hours in a day with consuming media during the first quarter of the year 2016. Additionally, the American teenager (13-18 year-old) consumes about 9 hours of entertainment media, meaning they interact directly or indirectly with screens of black-boxed devices for nine hours a day.¹⁶ Spending almost half of the day staring at a screen offers a limited relationship with the entire body. While the body is also a medium for experiencing technology today, everyday technology creates connections with the mind more than the body. The screens, offer a way of interaction with technology but at the same time allow a limited experience with regard to the senses of seeing and touching. Additionally, screen based interaction with devices reduces the potential of physical interaction between people while increasing individualism and virtual social interaction. It brings some beneficial and harmful results for communal human relations from a social and cultural perspective.

All these thoughts and discussions triggers a critical question: What is the goal of a screen? The simplest answer to this question is “to deliver information” for helping people to connect with information, each other or other devices.

¹⁵ Alva Nöe, “Precis of Action in Perception,” (Psyche 2006: Volume 12 Issue 1), <http://www.theassc.org/files/assc/2624.pdf>, 1-2.

¹⁶ Nielsen Company. “The Total Audience Report Q1 2016,” Nielsen Company, Accessed October 8, 2017, <http://www.nielsen.com/us/en/insights/reports/2016/the-total-audience-report-q1-2016.html>.

2 .3. Analog Screens vs Digital Screens

“The changing technologies of ‘delivery’ alter the effect of moving images in ‘display’... we still need to ask questions about the altered and altering effects of screen that are mobile and fixed, that bring images and sounds in varied sizes and shapes, that permeate our spaces public and private, that sit in our desktops, in our living rooms, on our laps, or are hand-held, accompanying us on airplanes, in automobiles, to desert islands - with us here, there, everywhere”

Before the digital screens became mainstream, people used various mediums and analog methods to deliver information for centuries. Questioning the purpose of digital screens required me to reconsider the analog ways of transforming knowledge. If the main purpose of interacting with a screen is accessing information, can we consider a cave drawing, an ancient tablet or a book as a screen? If we claim that they are also screens, what are the main differences between a digital screen and these analog screens?

Because analog screens contain physicality in their nature, they might promise a richer body experience while digital screens provide fairly limited interaction and body experience. However, the drastic contradiction between these two types of screens comes from the intensity of the content. Physical limitations of an analog screen always require to contain a curated content. That gives the audience/viewer a chance to engage with the content properly by spending an estimated time. On the other side, viewer is able to engage with infinite content through digital interfaces. As they’ve tried to adapt to the reality of existing in front of an infinite content, they might become less aware of their body, and space-time or they might lose their deep concentration and clear understanding on the screen while addictively staring and interacting with the dense content. All these scenarios end up with causing a cognitive dissonance on viewer (Figure 4).

¹⁷ Anne Friedberg, *The Virtual Window*, MIT Press, 2006.

I believe, there is an emergency for questioning and redefining the interaction with screens for the seek of the future of human and human, human and environment and human and machine interaction. This project has intended to make a self-critic based on personal daily experience through digital displays. By recording the screens that I am interacting with during a day without context and then revealing these moments through an analog medium ironically, I aim to make audience question their own everyday relationship with digital displays by bringing a major problem into view: How infertile and boring is interacting with digital interfaces.

To gather this monotonous data of self, I decided to attach a camera close to my eyes, which basically becomes a third eye to my body. By empowering the camera with computer vision technology, I was able to eliminate the moments that involves screen interaction. To overcome some technical obstacles, I had to research and understand current computer vision and artificial intelligent technologies.



Figure 4: Ancient Tablet as an Analog Screen vs. Digital Screen.¹⁸

¹⁸ A clay Tablet, British Museum, 2016.

MacBook Pro Retina with Google home page on the screen stands on, Dreamstime, 2018. <https://www.dreamstime.com/editorial-stock-photo-macbook-pro-retina-google-home-page-screen-stands-simferopol-russia-july-biggest-internet-search-engine-com-domain-image42447998>

3. Computer Vision and Artificial Intelligence

Artificial Intelligence and machine learning are demanding technologies which bring a lot of discussions along with. There are a few mainstream approaches to the potential futures on AI, all commonly accept that AI and machine learning will change the world in the following decades.¹⁹ In one scenario AI will be used for the goodness of world and help human to create a better world to live together in peace. The second scenario has based on a more dystopian story, AI becomes the main power with its post-human abilities and destroys human-being. Elon Musk, the co-founder of the research company, OpenAI, who is working to build safe artificial intelligence, is one of the well known supporter of this apocalyptic scenario. While the first scenario seems to be extremely naive, the second one as pessimistic as it is. Another approach is based on the idea of superintelligence which avoids to take extremely optimistic or pessimistic side, which offers a future where human intelligence and artificial intelligence will work together in harmony. Supporters of the idea of superintelligence claim that AI would work best when pairing with human and, the results can be good or evil.²⁰ Even Though all these scenarios are possible at some level depending on how human adapt AI in life , the third one seems to be the most realistic one: A future where human meets with the machine and creates the ultimate but imperfect "Deus Ex Machina".

3.1. The Present and Future of Computer Vision

Digital assistants (Siri by Apple, Alexa by Amazon etc.) have already started to become a part of people's daily life by refining their interaction with spaces and others. Additionally, computer vision became a core element not only for behavioural analysis,

¹⁸ Barack Obama, Neural Nets, Self Driving Cars and the Future of the World, Wired Online, Last Modified: November 2016, <https://www.wired.com/2016/10/president-obama-mit-joi-ito-interview/>

¹⁹ Hof, Roberd D., Man and Machine, Last Modified: March 28, 2016, <https://www.technologyreview.com/s/600989/man-and-machine/?set=600969>

Additionally, computer vision became a core element not only for behavioural analysis, also for augmented reality applications that we use daily based on our smartphones. Even Though technology seems to be developing rapidly, a lot of drawbacks exists in the practice of AI development.

While computer vision, as well as voice recognition, has become a baseline for the development of artificial intelligence, I find crucial to ask this question: Is what we see, what computers see? To find an answer to this question we might need to look at how people perceive their environments. This has been essential to many fields for centuries including biology, psychology, and philosophy. In theory, we have a detailed model of how our visual perception system works. However, as many other functions of brains, we do not have a clear description for how we actually perceive and process the visual stimuli at the backend or what kind of relations we build within our memory based on visual inputs.

Though we have a detailed understanding of how we see things, we are not able to mimic the same “looking, processing, seeing” experience for computers. Besides, we were able to develop a rough visual understanding system for computer. Computers do not see a dog, a screen, a car, a human or a shape from their perspective. They only perceive mathematical data of their surroundings, how are different qualities of light being emitted: color and position. The computer can know the location and RGB value of each pixel of the image it is looking at. This mathematical data still does not mean anything to the computer.

Developers have been creating manual algorithms to give a meaning to the mathematically formalized visual information based on pattern recognition. In the last decade, improvements in deep learning technologies carry the computer vision technology into another level. Computer Vision is no longer based on manually written static algorithms, it is based on trained neural networks. While training neural networks

require a great amount of data, leading technology companies like Google, Amazon, Facebook etc., which have already been mining data of their users, have also become the leaders on AI technologies. These data resources have also been opened to the public use in the last few years. For instance, Google opened its Cloud Vision API to all developers in February 2016. Additionally, Google Cloud Auto Machine Learning tool, which allows its users to easily upload their dataset to Google and train their own program to recognize images according to their personal needs, has also become public on 2017. While computer vision technologies become more open to common usage, different questions arise around possible user scenarios. How reliable are the datasets used to train artificial intelligence? In which scenarios are we going to use this technology? What do we want to and need to recognize by using computer vision?

To answer the first question we should look at detailly how the datasets are occurred to train AI. All the online information users are uploading to the cloud technologies transforms into data packages to train artificial intelligences. The images that users upload to social media which are a kind of digital reflection of our daily experiences teaches to the computers what a human-being look like, physically and psychologically. While the amount of data increases, the accuracy of AI also goes up. Since there is still not a sophisticated relationship between AI and the visuals, as like as a person have, depending on the case, responses of AI can seem shallow or meaningless to people. On the other hand, computer vision provides a unique opportunity to detect quantitative data on visuals. It can perfectly determine some specific features of visuals which are invisible to human eye. When it is trained for a specific task, detecting quantitative data on an image is an easy task for a computer. With rightly written program, It can easily recognize how many people are taking NY train in an hour. In addition, it can also detect smallest changes in an environment which are impossible to detect with naked-eye. What if computer vision becomes a part of human vision as an extension of human body and perception?

3. 2. Cyborg Futures: AI as a Third Eye to the Human Body

"What do we know of the world and the universe about us? Our means of receiving impressions are absurdly few, and our notions of surrounding objects infinitely narrow."²¹

Vision is most developed and sophisticated sense of human body. It has strong relation with environmental experience, learning and memory. At the same time, human visual system has its own limitations. While it evolved for specific tasks, it might completely blind to some other details of environment. Empowering human vision with AI is one of the most possible scenarios for creating a togetherness between AI and Human Body Intelligence.

The origins of concept third eye date back to ancient times. The third eye refers to an invisible eye that provides a power to the person to see beyond ordinary realm. The third eye expands the human's limited perception and enable a higher spiritual consciousness.²² In theory, having a third eye is like having an extended intelligence that gives you a super-power; power to perceive the world differently and detailly. Tom Gruber asks this question in a speech; "How smart can our machines make us?"²³ I want to specify this question by asking: "What if computer vision and AI augment the perceptions of human body?"

Image recognition is one of the strengths of AI. A camera can detect many details that human eyes cannot. The body camera areis not a new idea. However, empowering a camera with computer vision promises many more possibilities in terms of improving human perception of the environment and the self. I am using this emerging technology as a tool to reveal the data of my everyday behaviour and interaction. For conceptualizing AI as an organic part of human body, I am using the term "third eye".

²¹ H. P. Lovecraft, From Beyond, 1934

²² Alberto Giacometti : Myth, Magic, and the Man Wilson, Laurie 2003 Yale University Press

²³ Tom Gruber "How AI can enhance our memory, work and social live?" TED Talk, 2017.

4. Process of Critical Making

To make this project come true, I experimented with various technologies and mediums. During the process of making, these were my steps: Researching on current AI technologies and understanding its working mechanism, challenging with physical computing components and testing various electronics that work with the technology and small enough to be a part of a wearable product, using 3D Printers in an experimental way by printing on fabric, designing an aesthetically and conceptually integrated setup for the final show, and producing these pieces.

4.1. Prototypes and User Tests

To understand the limitations and possibilities, I experimented with computer vision technologies which are available in the market. By using Google Vision API, I was able to access Google's trained datasets and get responses on images I was uploading (Figure 5).

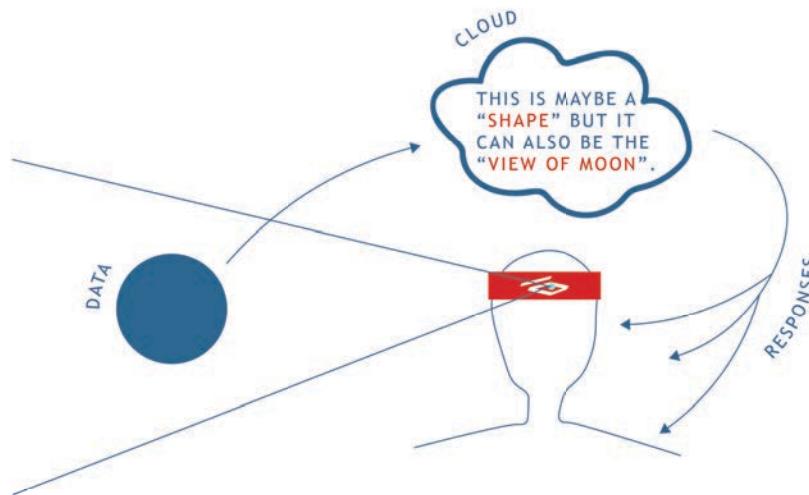


Figure 5: Diagram, Working Principle of the Third Eye.

Phase 1 : Experiments on Concept and Computer Vision

During the first phase of my prototyping process, I challenged myself with both, concept development and technology. First I made a 3D printed crown where I placed a camera and Raspberry Pi on top of the head of users. I used Node.js and Google Vision API to recognize and label images taken by the camera. I tried to understand the drawbacks of the technology and my personal limitations in terms of adopting myself to these technologies. I tested this prototype by closing the eyes of the user and leading them to use the camera to capture images from their surrounding. The pictures were sent to Google Cloud, and I read the responses out loud to the user simultaneously. This prototype proved that when user had more freedom on using camera they felt having more control on the experience. Otherwise they were not quite sure what kind of photos the camera was taking. At the end, when I showed them the photo and the responses on the screen, they were able to relate themselves with the experience better (Figure 6,7,8). In other respects, the responses which were sent by Google Vision API were not always relatable, sometimes making no sense to the audiences. This experiment revealed the restrictions of technology clearly. While artificial intelligence was good at categorizing specific visual elements in the image, the responses was not as sophisticated as expected in general.

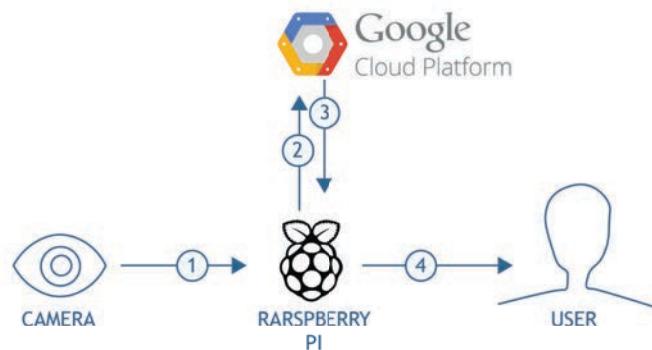


Figure 6: Diagram, Working Principle of the Third Eye.



Figure 7: First Prototype and User Tests.

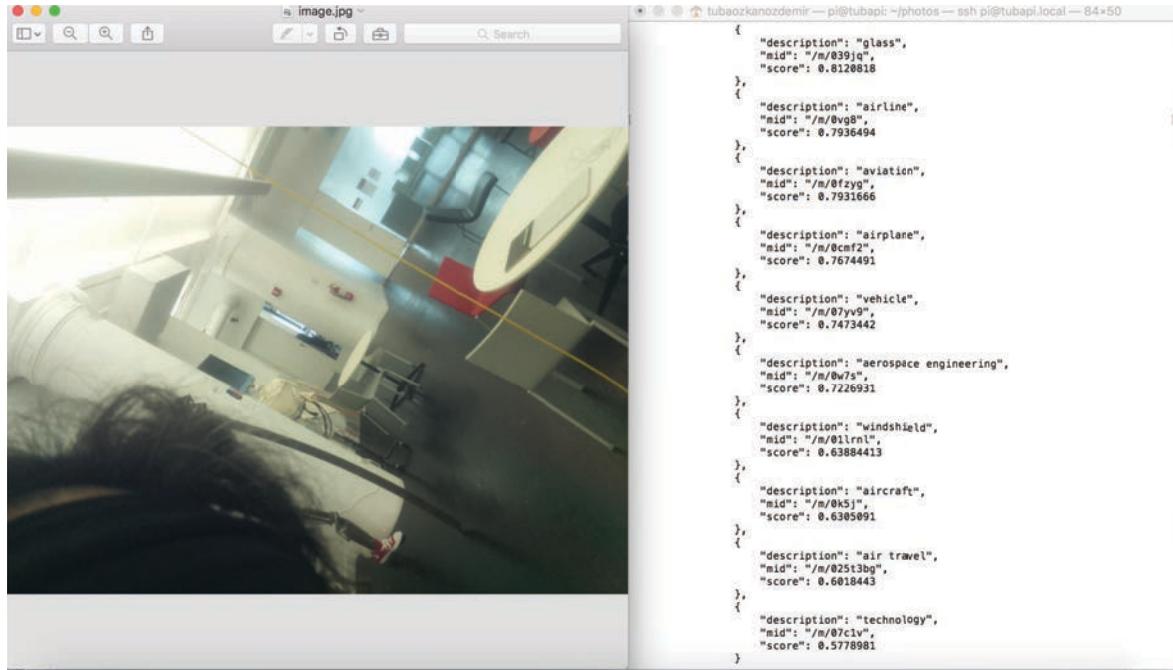


Figure 8: One of the photos taken by user and responses by Google Vision.

Phase 2: Development of Aesthetic and Technical Prototype

After then, I created a more flexible wearable and changed the material I was using for my next prototype (Figure 9). By using fabric as the main material, I formed it like a bandana. It was able to fit with people's head having different hair style and head size with this way. The layers of bandana gave me opportunity to hide all my hardware as well. I tried to use smallest computer and components that I can find, a Raspberry Pi Zero, a Raspberry Pi Camera and a Lithium battery. Users were able to take pictures by pressing a button hidden inside the fabric, and the photos and responses were published visually on a website simultaneously. I challenged with many technical drawbacks to make the experience smoother (Figure 10).

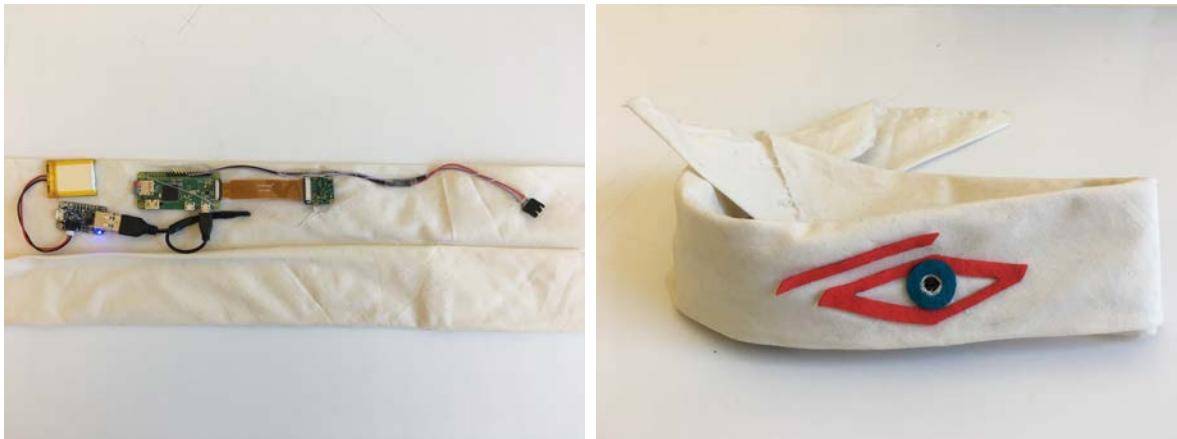


Figure 9: Third Eye in the form of bandana.

The most critical feedback I got from the users were about "having control". They questioned their control over this overall experience as a user, and had hard time to find a meaning on the feedbacks they were receiving from AI. They were not sure if AI was empowering their vision, or they were empowering AI by sending the data of their own experience to the Cloud. All these feedbacks helped me to reevaluate the main goals of the project.



Figure 10: User tests.

Phase 3: Experiments on Output

My following prototype was more focusing on the experience of the collected data. How should I be displaying this data to the audiences by examining the nature of screens?

The main goal was exploring different ways than a regular screen based experience to deliver information. In the beginning I had the idea of designing a tangible object that still have displays on. I had 3D Printed an organic shaped-object which is in an ideal size for tangible interaction. It had several e-paper displays on it's surfaces which shows collected images and responses coming from Google Vision API. Even though I was trying to have the output in a tangible form, I was still relying on a digital technology. Eventually, I gave the decision of not using any digital technology to present my content for my installation. (Figure 11,12)



Figure 11: Early prototypes, different sizes of objects displays the data collected by the Third Eye

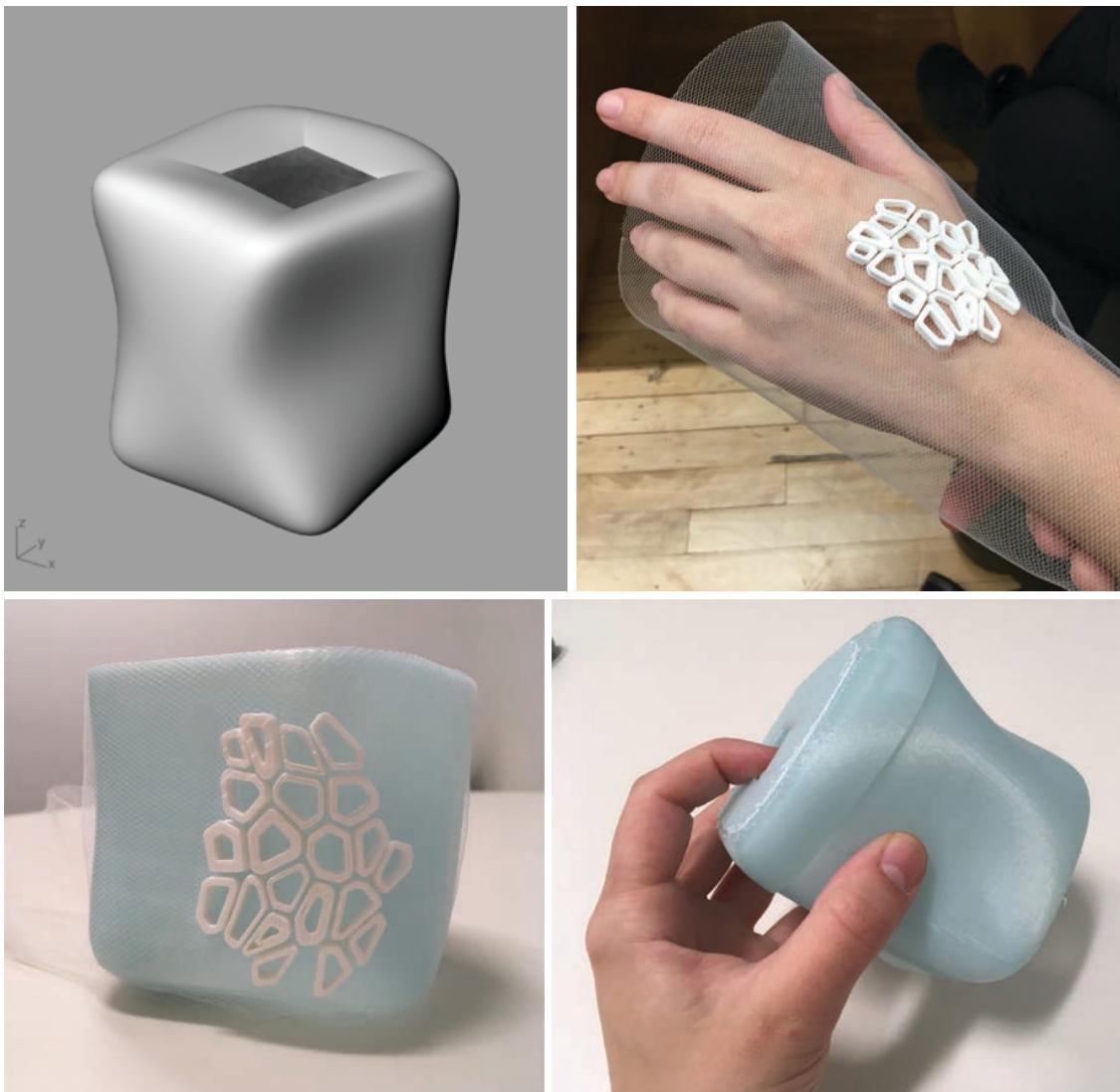


Figure 12: Prototypes with e-paper screens.

4.2. Final Form and Installation Plans

Third Eye:

My previous aesthetic prototype had connotation with traditional visualizations of the concept third eye in mythology. For the final form, I decided to change and re-invent Third Eye's visual language by relating it more with my concept and technology I was using (Figure 13, 14). I wanted my design to have an organic look. This design also represents a futuristic idea in which AI becomes a natural part of human body.

Third Eye itself is a wearable product which works with a camera and Raspberry Pi. The final form is shaped by a cell-like parametric geometry. The camera and other electronics are hidden and blends in organically with the design (Figure 15, 16). 3D Printed structure attached on top of Neoprene fabric, and black fabric also works as a shell for the electronics. When Third Eye is activated by the user, it takes photos every thirty seconds, sends those images to Google Cloud by using Google Vision API, receives AI's responses, if there is a display in the photo stores the image, and if there is no display in the photo, deletes the image. I wore the Third Eye during a day and recorded my performance at different places in the city where I had been during daily life (Figure 17).



Figure 13: Early experiments on the shape factor



Figure 14: 3D Printed geometry on tulle together with Neoprene fabric.



Figure 15: Aesthetic exploration of the Third Eye, inspired by 1920's fashion.

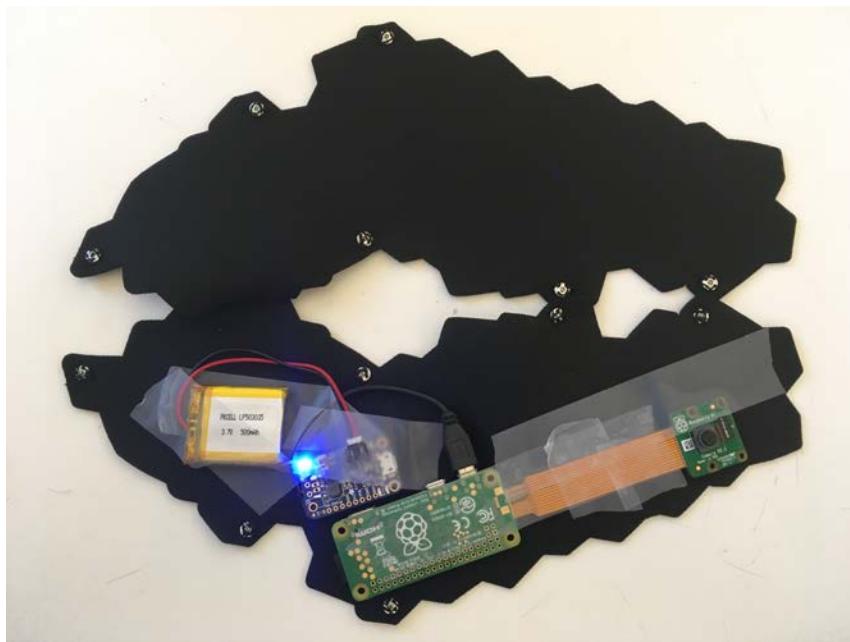


Figure 16: User Tests with Neoprene fabrics and electronics.



Figure 17: Recordings of my Performance with the Third Eye over the course of 5 hours in a day. Locations: NYC Subway, Bus, Park and Streets.

Analog Screens:

By wearing the third eye, I have collected the data of my personal life for revealing ethnography of self. The data has been curated by the computer vision technology. While it specifically records the moments when I am interacting with a digital interface, at the end, it generates all images involving digital displays from my daily experience (Figure 18). By using this data, I wanted to create an absurd installation piece to show people how boring is our everyday interaction with technology. Monotonous-Scope is an experimental tool that externalizes the data collected by the third eye (Figure 19). I wanted to visualize the data (photos of screens) collected by the third eye through a tangible object.

On the other hand, Artefact is an exploration of the nature of movement-image. By shooting videos during my performance while wearing the third eye in many different contexts, I had a collection of movement-images. To show this content in a video-like analog form, I wanted to use lenticular material which displays a different image according to the position of the viewer. By placing different frames from the videos on the surfaces of several cubes and adding lenticular effect on top of some, Artefact tries to reproduce and make a collage out of those videos in an analog form. Both objects are an analog exploration of digital screens and aim to give audience an opportunity to physically interact with the curated content (Figure 20).





Figure 19: 3D Model of Monotonous-Scope.

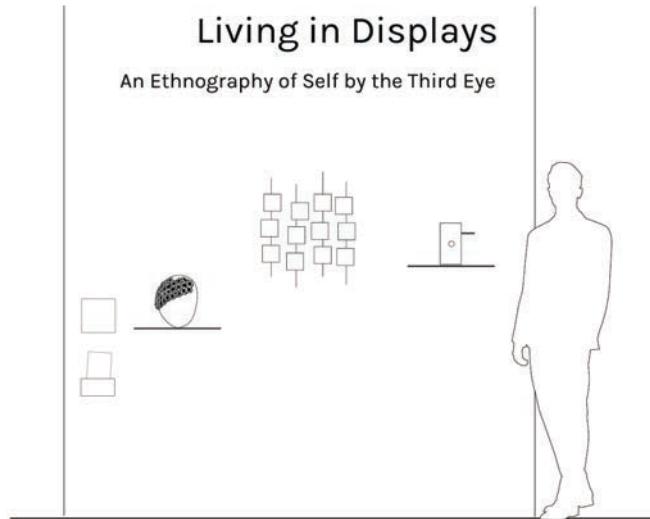


Figure 20: Exhibition Plan.

5. Evaluation

The scope of this project naturally included an evaluation of AI, which I approached as a tool that might extend and empower human understanding of behavior and the environment. In most cases, the human body, itself, is already capable perceiving and processing environmental data, but always within the limitations of body. Empowered by AI, however, a body camera has a lot more potential beyond my experimental application.

The technical part of the project taught me the weaknesses and strengths of current AI technologies. While AI works effectively when programmed for specific missions, it falls short on more sophisticated tasks. As an example, when the Third Eye was receiving top ten responses given by AI to a specific image, those responses did not make sense for the person who was taking the image. For them, responses were irrelevant what they were seeing or perceiving. However, when I programmed the Third Eye only for one purpose, for detecting “displays”, It performed very efficiently.

A Third Eye-like instrument can easily transform into a functional product to assist visually or physically impaired populations, guiding the body through space. It could also serve as a tool for inspiration, interpreting/processing what we see through its semi-autonomous understanding of human, manmade, and natural worlds. On the other hand, it might find a more controversial home in the domains of criminal justice, spycraft, or private life. While all these scenarios are possible, I strongly believe the impacts of each warrant the immediate, serious consideration of and discussion among designers.

In a regular day, we do not pay attention to our interaction with technologies and their impact on our experience of the world. It makes us socially awkward and decreases our environmental and interpersonal awareness. We can easily miss the details of our own

lives while spending half of it staring at a screen. This is problematic. The main goal of "My Life with Screens: An AutoEthnography through the Third Eye" was to create a moment of awareness for audiences and open up a sincere discussion about the long-term physical and social effects of screen time on our species. An autoethnography around this concern turns self-critical and urges both users and designers to consider the possibility for a more human-centric relationship with technology.

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