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Artist's Research Statement

Bachelors in Arts and Humanities

Artist's Research Statement: *The Capacity of Connective Disconnection*

Introduction

As technology continues to develop over time, so do humans. With this concept in mind, a lot of factors come into play: such as Artificial Intelligence (AI), Extended Reality (XR), Human Computer Interaction (HCI), and ergonomics. There are many subcategories that are under these topics, such as Large Language Models (LLMs) and cognitive computation capabilities of the human brain. In this project I will speculate one branch of how future technology will look like.

Concept Ideation

During the concept ideation, I was mainly focused on what I have seen so far as a place to start. For example, I started with the idea of AI—from philosophical standpoints—and XR—from technological and HCI standpoints. With my experience in HCI and AI, I began looking at what kinds of technologies are available today. For example, many of the devices people use have digital screens, which are connected to some computing technology. For example, mobile devices are very popular, especially when it comes to smartphones, tablets, and laptops. There are also new up and coming technologies like the Metaquest 3 that recently came out. Considering a variety of digital screen devices exists, I was wondering what kind of way technology can eliminate that kind of eye strain.

The first idea came to me from an anime called *Sword Art Online (SAO)*, written by Reki Kawahara. This series shows an example of futuristic technology where a head-mounted gear can put the user into an unconscious state to run a realistic simulation by connecting to their

neural network. There are a lot of cases where technology users experience fatigue with the way that computers, VR headsets, and such are physically oriented. For example, one reason to use hand tracking is to get rid of the excess weight of controller tracking in VR setups. The only problem is how the hands are tracked. Usually hands are tracked with a visual camera that has its own limitations. Using SAO's idea of simulated subconscious worlds, the problems of fatigue and limited tracking disappear. This subconscious state of entering the virtual world allows the freedom of the user to move in the way their cognitive capabilities allows them to. For example, if a patient who has muscular dystrophy—which is muscle deterioration over time—cannot move their body the way they want to, then it gives that person the capability to enter a virtual world and move more freely, due to their cognitive capabilities being intact.

Another concept that I was drawn to was the 4 normative theories of philosophy: agent based approaches, consequence based approaches, and deontological normative theories which are composed of negative and positive rights based approaches. The agent based approach is about virtue ethics. Think about what is happening inside of the agent. What is their intent? Is it good or bad? Do they want to harm someone or themselves? With this concept, the way for an agent based normative theorist to think is to judge someone's actions as right or wrong based on their attitude towards the said situation. For example, if the agent wants to cure cancer to help others heal, then that has the right intentions according to this theory. If they want to cure cancer for the purpose of fame and money, then that would be morally wrong. The consequence based approach is like Utilitarianism. With this approach, the best way to measure good is through the happiness outcome of everyone around you. With this mindset, it would be wrong to give someone a gift that gives them anxiety no matter how good the intentions were. Even with decisions like creating a political system where nobody is hungry, the consequentialist needs to

think about how many people would be happy and unhappy from such a decision. For example, market owners might be unhappy that they cannot raise prices or sell any goods anymore, while the ones who were hungry will be happy afterwards. This kind of calculation is meticulous due to the nature of difficulty that comes with calculating “happiness.” Next are the deontological normative theories: positive and negative rights based approaches. The positive rights based approach is more about giving someone what they deserve. For example, this form of theorist would believe in rights to education, employment, healthcare, etc. In this mindset, the theorist focuses on a system that thinks about people’s hypothetical consent which would assume what they would want as basic needs. The negative rights based approach is more so about the rights to be left alone. When an individual infringes on someone else’s rights, then they are in the wrong. Below is a more clear representation of these normative theories.

Agent Based	Consequence Based	Positive Rights Based	Negative Rights Based
What are my intentions for my actions?	What is the cumulative outcome?	What am I owed? What do I deserve?	Am I infringing on anyone’s rights?

The 4 Normative Theories of Philosophy

What caught my attention was how, in the future, AI will be cognitively functioning like a human. If humans themselves can’t agree on certain concepts and idealisms, then how can AI? That is why philosophy plays such an important role in the creation of AI. Without these normative theories, AI cannot have any form of a base to begin thinking about what kinds of personal and emotional decisions it can make—if that is where AI will lead to.

Separating the main idea of futuristic technology into these subcategories, brought about the idea of ergonomics, minimalism, and the goals of creating new technologies. What I have noticed is that many large scale companies make technologies comfortable and uncomfortable purposefully. I say this in the sense that these products are comfortable enough to desire them but

uncomfortable enough to want more in the next update of that device or software. In this mindset, if people are given everything they want in a product, then they will stop making sales after the first purchase.

Setting that aside, my project isn't considering the capitalism that is at hand. It is more speculation of what could be a reasonable result of technological advancement in the future.

Narrowing Down the Idea

With AI, philosophy, HCI, ergonomics, and minimalism at hand, I began to think. What kind of physical material best represents the concept of "the future?" The main material I thought of was metallic and transparent materials. Contrastingly, humans are very organic creatures, so meeting in between these two opposite worlds is where the struggles of HCI and ergonomics reside. Thinking and researching through different information about how AI could take over the future or how robots will kill all humans gave this idea of how people thought of new technology as separate entities from themselves, when in reality people are so intertwined with their mobile smartphone that it can be considered an extension of themselves. I believe that AI will be more of a tool that humans can use instead of a separate entity that is a copy of a human being. For example, it can help a person with smart ways to take care of their garden in the backyard or even fully automate that process. It can also be some kind of platform that allows people to communicate, work, and be entertained at the same time, just like today's computers.

The Project

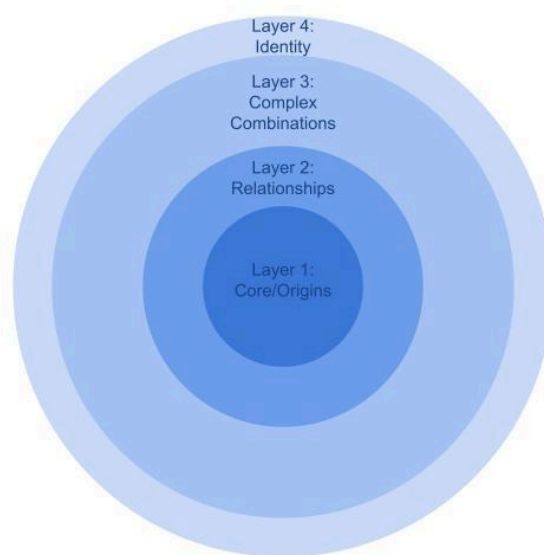
The Capacity of Connective Disconnection is based on two main components: the Peak Process—which will be discussed in the Afterthoughts and Struggles section— and my current interests. I have always been interested in dystopian worlds—like Fahrenheit 451 by Ray Bradbury, 1984 by George Orwell, and The Giver by Lois Lowry. In these literary pieces, the

authors emphasize bringing out each of the world's system and how the community works with certain future technologies. For example, Fahrenheit 451 shows the technology of fireproof houses that surrounds the purpose of burning forbidden books. Lowry, on the other hand, provides a more medically focused perspective of muting people's experiences of the world by eliminating freedom of choice, represented by the absence of color. Orwell also explores a different kind of futuristic technology by extremifying government surveillance.

With these perspectives in mind, I thought about what kind of focus can future tech have? Continuing on, I decided that the comfort—or ergonomics—of the human body and mind is something that is constantly being ignored especially, for example, situations where people have jobs or products that don't value their comfort but it is the best available choice that they have. Additionally, the appearance of virtual reality and proficiency of artificial intelligence is constantly mutating into a more refined version of itself, allowing there to be new horizons of creativity in technology. As Large Language Models (LLMs) are more often used, the more convenient functions get in order to quicken processes that would otherwise be manually done.

How I envisioned this project is a core of abstract ideas as the base of the overall concept. For example, there are abstract theories of philosophy as well as mathematics. In philosophy, there are layers of level of simplicity. In this hierarchy, the more simple a concept is, the more abstract it becomes. For example, if you think about a pencil, then its components can be broken down into what it is inherently. Continuing on, the pencil can be abstracted into a cylinder with a cone, creating this blueprint of what a pencil really is. To further abstract this concept, three dimensional shapes can be disassembled into a flat 2D space, 1D line, and then a point. This concept is parallel to ideas and objects in general. To visualize further, objects are made out of ideas and other objects as we perceive them (since we cannot see outside of ourselves), like the

pencil example. Ideas, on the other hand, can be broken down into its corresponding components such as other more simple ideas and/or emotions and inherent reactions. In order to express the origins of our *nature*, the origins of such *concepts* are at play. After the core is the relationships and synthesis of such states of being. If you have an object, it is not related to another except through the human mind as well as the laws of nature—like physics. This second layer of the onion holds the core ideas together. The third layer is where things become more complicated as the human mind mixes and matches the abundant amounts of thoughts and relationships thereof. This layer is the thickest one of all the layers due to the amount of combinations of ideas there can be. These combinations can then nest over each other creating more and more intricate relationships. Lastly, the fourth layer is about the identity of the individual, which consists of personal experiences and emotions that form into character and personality.



The Layers of Abstraction: Human Mind

One of these Layer 3 concepts is the idea of normative theories. There are four main theories as mentioned beforehand: Agent Based, Consequence Based, Positive Rights Based, and

Negative Rights Based normative theories. These theories give light to how Layer 4 (identity) reaches out into opinions and priorities. As the building blocks stack up, next is the state of current events.

Thus, there are a string of questions. What is technology like right now? What is the past of this branch of technology? How have people predicted the future from the past? With these questions, there are 3 branches to explore: the focus of technological growth, its reactions from history, and the skill of speculation. The focus of technological growth depends directly on the people of power within this scope. What are the goals of the people at top? For example, in the aforementioned novels, the authors created a world based on certain focal goals of futuristic technology: medics, surveillance, and mechanics. With these focal points, there is a higher tier goal, which can be summarized into suppressing one's autonomy.

Once you find that focal point, is when all the building falls into place. For *The Capacity of Connective Disconnection*, I decided on ergonomics as my higher tier goal, having a positive trajectory contrasting suppressing one's autonomy. A background but consistent feature of future technology is the dystopian feel of unfamiliarity as well as excitement. Playing on those emotions, I kept thinking: what is the most ideal way of expressing ergonomics of the human body and mind through technology? One stands out above all else as current technology advances: virtual reality, specifically neuro-connecting virtual reality. Neuro-connecting VR allows strains and any other physical limitations to disappear. Imagine a case where you link your brain to a bird in which you can control it as if it is your own body. You do not have wings yourself or the anatomy of a bird, but over time you will learn how to use this body; as it is common knowledge that humans adapt to new and unfamiliar environments well. Now, instead imagine a link with the body of a gorgon or whatever other non-real creature. With your mind

linked up to a virtual character, you can train your mind to control these new bodies that can allow a physically disabled person to walk again.

Again, my artwork always has a touch of dystopia, which means that there is some level of discomfort from looking at *The Capacity of Connective Disconnection*. The goal here is to allow that discomfort to draw attention to the work and allow for the colors underneath to shine further and do the world-building instead of with a long list of explanations of what kind of world this piece takes place in.

Afterthoughts and Struggles

The main struggle that I faced while beginning this project was thinking about the length and depth that would go into creating such a project that is supposed to “summarize” my experience as an undergraduate at CMU. There are multiple recursive stages of struggles that my project went through: ideating and finding a way to express my interests into one main point, coming to a point that I mostly liked but had one piece missing, restarting the ideation process, and so on until I came to this project’s outcome.

Every time that I create some kind of artwork it is like a sound or light wave that is going back and forth with varying frequencies and amplitudes. With this never ending and generally predictable wave, I can gauge when a piece reaches a local maximum, which could be lower than an absolute maximum. This process is about the Peak Process. When it comes to making the decision to stop working on a project—since any artwork can be worked on forever in theory—there is a list of criteria that needs to be met. The first criterion is for the project to reach a local maximum, or to be “good enough” or “close enough,” to my vision of the final project. That means that every artwork that I complete is a dot within a 2D plane with a circle drawn around it. This circle is the target area, which means that the finished piece is not exactly as I

envisioned it to be from the beginning. As time passes, my skills are honed and that circle grows dynamically slower based on experience and practice. When the work in progress reaches that circle, then the next step is to think about resource constraints, such as time and material availability. If there is not much time, then it is considered a peak. If there are not enough materials to work with, then it is also “good enough.” If I run out of resources before it reaches a peak state, then I cannot do anything except to give forward what I have and, crudely put, own up to it. I have yet to run out of resources, so it is only in theory that I explain that kind of situation. The third step after the Peak Process and seeing that I have enough resources is to think about past experiences and try to predict future events. Think about what patterns of behavior that I have had when it comes to doing the work of finishing or editing my art. For example, if I take a day to shade in one object, then I will give myself a day or two to fix up a part that I noticed was not to my liking. The difficult part of this third step is to “predict” the future. There are many parts of predicting the future: thinking of the past, as mentioned beforehand, as well as thinking about what kinds of emergencies or events could happen that will prohibit me from reaching my new and closer peak in the wave. One thing I can think about is the welfare of my family and friends that could be affected by these decisions. For example, I can think about if there is someone that is sick and could need my help, which would take a huge section of my dedicated time out of the journey to finish the art project. I also consider the workload that I am dealt with, which could push back the project by a week if there is a sudden pile of things to get done.

With these steps, there are many applications that align with the Peak Process. For example, any company’s projects have a goal and a list of resources. With those resources they

devise a Peak Process plan that allows them to complete their goals and reap the rewards while also not putting in any “futile” effort.

I become frustrated with eagerly wanting the best outcome alongside saving myself the unnecessary effort of finally reaching that center point of the circle, which could have been reached with a few more hours or a few more months. That is my main struggle with fine arts, especially because I want to create a work that is perfectly aligned with my vision, which is a skill known to take a lot of practice.

This Project's Next Steps

The main idea of the next steps of this project is to inspire my way of creating 3D artwork. I have been accustomed to creating organic and non-geometric art, which can be seen as limiting my idea making process. This perspective mainly comes from this particular article I read that showed nature had no straight lines, but then I realized that there are invisible straight lines all over the place. Between every two points is a line and between three there is a plane. Abstract concepts are constantly present in everyday life that it becomes unintentionally and sometimes literally invisible. I am constantly trying to expand my mind palace that sometimes I forget that non-complex concepts are the root of everything. Everything is connected by a synthesis of thoughts and relationships, which can let any kind of idea or object be connected to another in some fashion.

Continuing on, I thought about how I am focused on post-future-apocalyptic worlds that seem underdeveloped instead of hopeful of the experiences and diversity that closer future technology will bring. I am constantly thinking about future technologies and so it would be a reflective representation of myself and my thoughts that in turn become my artwork.