Project Deliverable D: **Conceptual Design**

GNG 1103 – Engineering Design

Lydia Finn, Ali Allouche, Adrian Begic

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Abstract

This report delves into the conceptualization of three different subsystems to create our product for Stop Killer Robots. With our three group members' ideas, we have created three different ideas for each subsystem and will analyze to choose the best overall scenario to create and produce as a product.

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1. Introduction

We're going to create a solution with at least three subsystems. We'll make sure these parts can be mixed and matched easily. First, each of us will come up with one concept for each subsystem while making it clear who thought up each idea. After that, we'll all get together and talk about these ideas. Our goal is to come up with some fresh concepts for each subsystem. We're going to make sure everything's easy to understand. We'll draw sketches and describe each subsystem. We will write down what's good and what's not good on each sub-system.Then, we'll mix and match the subsystem ideas to create three full solutions. We'll use a selection matrix like we learned in class to see which one works best, based on our design criteria. After all that, we'll pick the best concept and explain why we chose it, with notes about why we didn't go with the others. This will help us move forward with the project.

2. First Subsystem-Storyline

2.1. Lydia

This story would start off inside, showcasing the average civilian in a building with the enhancements to protect against AI that would be in normal rooms. This could be window covers, a lack of cameras and technology that could have AI connected to them like smart home products, and barricades to prevent robot entry. This point of view could show someone completing daily tasks without the help of technology.

The second scene could showcase the protagonist going outside and having to commute to work, pick up a child from school, or go see a family member. Depending on the chosen setting, this could showcase different challenges our main character would have to go through. Through these tasks we can showcase how a person in this world can protect against robots, such as they could travel underground, or have to put on a facial covering before leaving the house.

The pros to a situation such as the one described above is that it showcases what an average person would have to go through and is not a highly specific life to live, like as if the main character was the prime minister or in the military. It also creates the ideal situation to showcase solutions to the AI weaponry a person would have to defend themselves from. The cons are that it has a lot of moving parts to create in our VR program which means it's easily breakable if items aren't added in correctly. It also is slightly general and might not have much emotional response from the user.

Figure 2.1.1 Houses could have boarded up windows

2.2. Ali

Scene 1:

We begin inside a technology-free apartment. The camera pans across window covers tightly drawn to block out prying AI-infused drones. There are no cameras, no smart home devices, and certainly no robots. The protagonist moves about the room, preparing breakfast, manually brewed coffee, and reading an old paperback novel. They seem at ease without the constant hum of smart devices, living in quiet rebellion against the AI-driven world outside.

As the protagonist gets ready for the day, we see her barricade her door with a custom-made wooden bar. It's an everyday task for them, ensuring that no autonomous robots can intrude. Their home showcases their independence from the AI-driven society, and we get a glimpse of the daily rituals that sustain their humanity.

Scene 2:

The second scene takes us outside into a world where AI reigns supreme. The protagonist steps out of their building and into a street where everyone wears facial coverings to avoid AI-based facial recognition. Their destination is to pick up their niece from school.

They navigate the bustling streets, where self-driving cars and AI-controlled traffic lights make pedestrian crossings a challenge. The constant need to be vigilant against AI surveillance adds an element

of tension to their journey. Underground,they take a high-speed maglev train, one of the last remnants of pre-AI technology, to reach their niece's school safely.

 After a heartfelt reunion, they must carefully avoid AI patrols on their way back. As they arrive home, we see their determination to protect their niece from the AI-dominated world. They engage in old-fashioned, screen-free activities like drawing, reading, and playing board games, all without using any technology.

Pros and Cons:

      The story's strength lies in its relatability, depicting the challenges an average person faces in a world overrun by AI. It presents a broad range of everyday scenarios and solutions to AI weaponry, making it accessible to a wide audience. The story's weaknesses include complexity in creating the technology-free environment and the potential lack of a deeply emotional response from users due to its general nature. However, it has the potential to engage users in a thought-provoking exploration of a world where humans seek to preserve their individuality against a relentless AI tide.

2.3. Adrian

The story would start out in a normal looking bustling street with people going about their business as usual, laughing, talking, and walking around carefree. Suddenly there would be a siren that goes off with the message that the mandatory daily inspection will be happening and for all residents to proceed inside. People scatter quickly, with children in tow crying and scared, as while this has become a daily routine no one can truly adjust to it. As the spotlights come down people peek through windows as long casting shadows flood the streets outside. Everyone is quiet, and the streets that were once booming are now dead hollow concrete strips.

Scene two would be a follow up through the eyes of a kid that now has to go back to their normal daily life acting as such that intrusion did not just happen and will continue to happen. That they are being watched at any given time, when they are playing outside, at school, the constant pressure and stress of these things looming. As they walk to school things start to return to normal and people slowly come back outside, just as they get to the steps of the school sometime later all that can be heard in the distance is the terrible low hum of one them coming ever closer and closer, and this time it is different it has a purpose.

The pros of this storyline is that it would be able to contrast normal life as we know it with the stark reality of what it may look like in that world, the comparison comes quick, and just as quickly disappears leaving the spectator with something to think about. It would also instill a sense of knowing in the spectator as just in that short time the noise at the end would be able to provoke a response that associates it with bad things to come. The negative is that it may be too short of a period in between to really convey the sense of daily routine and how grueling it is to experience that everyday.

3. Second Subsystem-Environment

3.1. Lydia - School

The first environment is a classroom during the day. There are blinds on the windows, always kept shut, darkening the room. There is not the typical smartboard with computer connection, only blackboards that have no internet or AI connections to be able to detect people. The pros to this are that it is easy to create in our project, each user can relate to being in a classroom at school, and it draws on the users empathy imagining a child having to go through this nightmare situation. The cons to this environment is that there are a limited number of characters that could be the protagonists, like a schoolkid or a teacher or parent and that it is slightly isolated from the rest of the "world" we are trying to create.

no smartboard

shuttered blinds

classroom door has no windows

teacher has no computer (no cameras)
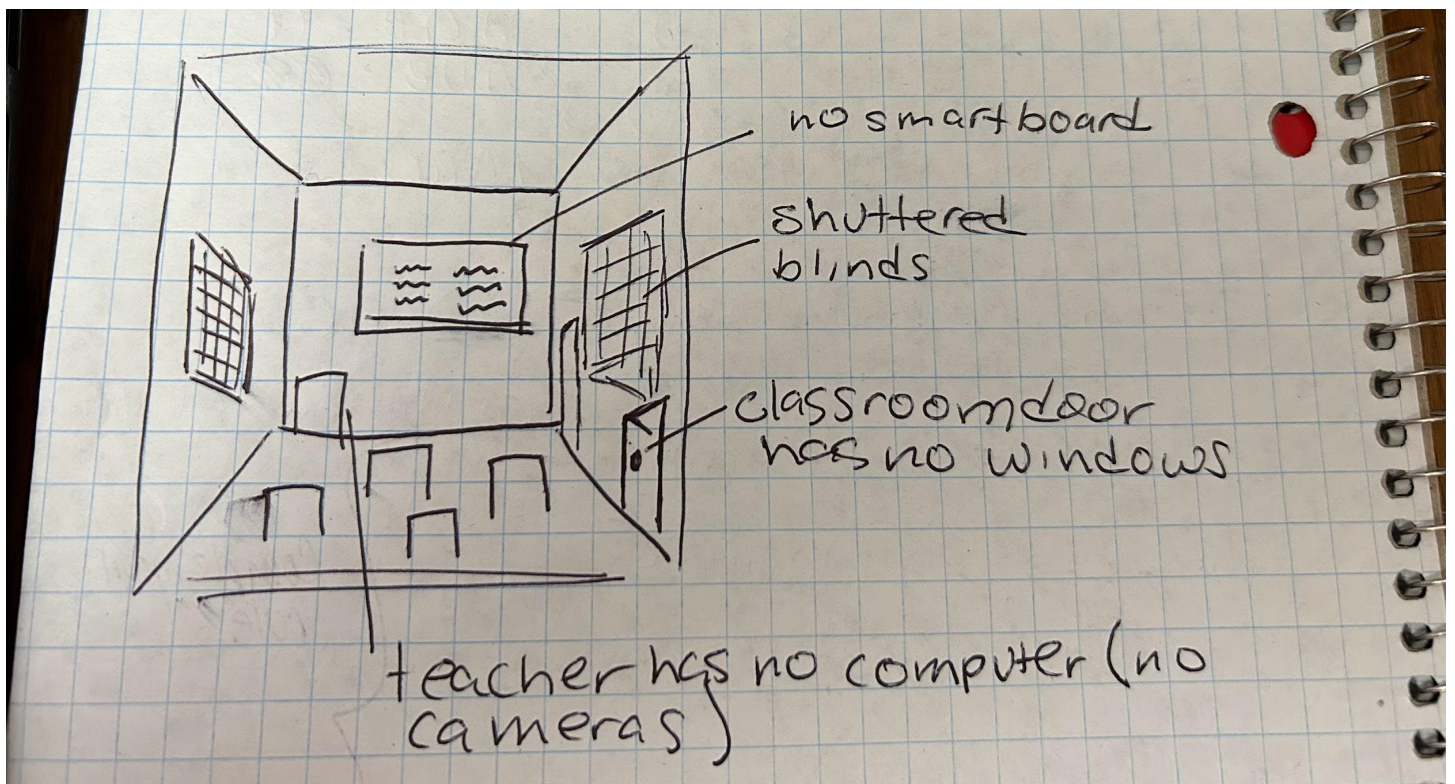
*Design is a sketch of my own, and therefore lacks a reference

3.2. Ali

In a world where AI robots have taken over, and humans work office jobs without relying on technology to evade AI tracking, the setting is an office building during the day. The environment is filled with a sense of vulnerability as employees are careful not to use any digital devices or technology that could potentially expose them to AI surveillance. The office workers communicate in person and handle their tasks with paper and pens to avoid leaving digital footprints. The pros of this setting include the constant tension and risk of detection by AI, providing a rich backdrop for human characters navigating this perilous world. The cons may include the small amount of potential characters and how hard it might be to animate the environment in unity.
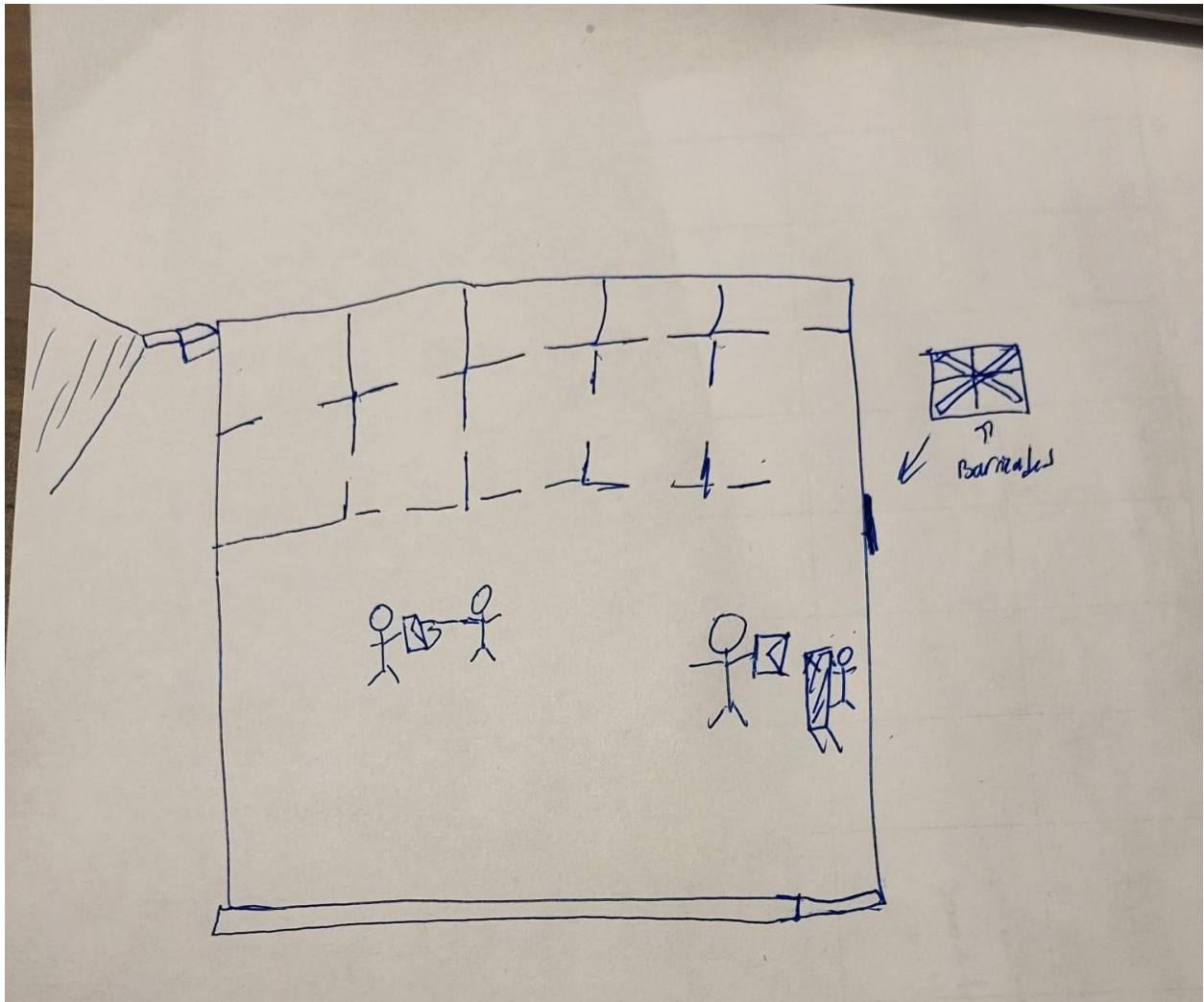
3.3. Adrian

The environment would consist of a busy street downtown in a more rundown neighborhood, where everyone is out and about and the sidewalks are crowded with all walks of people. The main environment for inside is a ground floor apartment that is somewhat rundown with all the blinds shut and all of the lights are turned off, with no hint of sound coming from anywhere. The contrast of the school would be light and upbeat with bright colors even though the day itself would be dark and gloomy. The advantages to this environment is that again it gives contrast to the spectator of the gloom and brightsides to the situation and how different life could be if we chose to implement this infrastructure. The negatives would be that there are multiple focal locations that are integral to the story so it may be difficult for the spectator to really identify with one and have it stick with them.
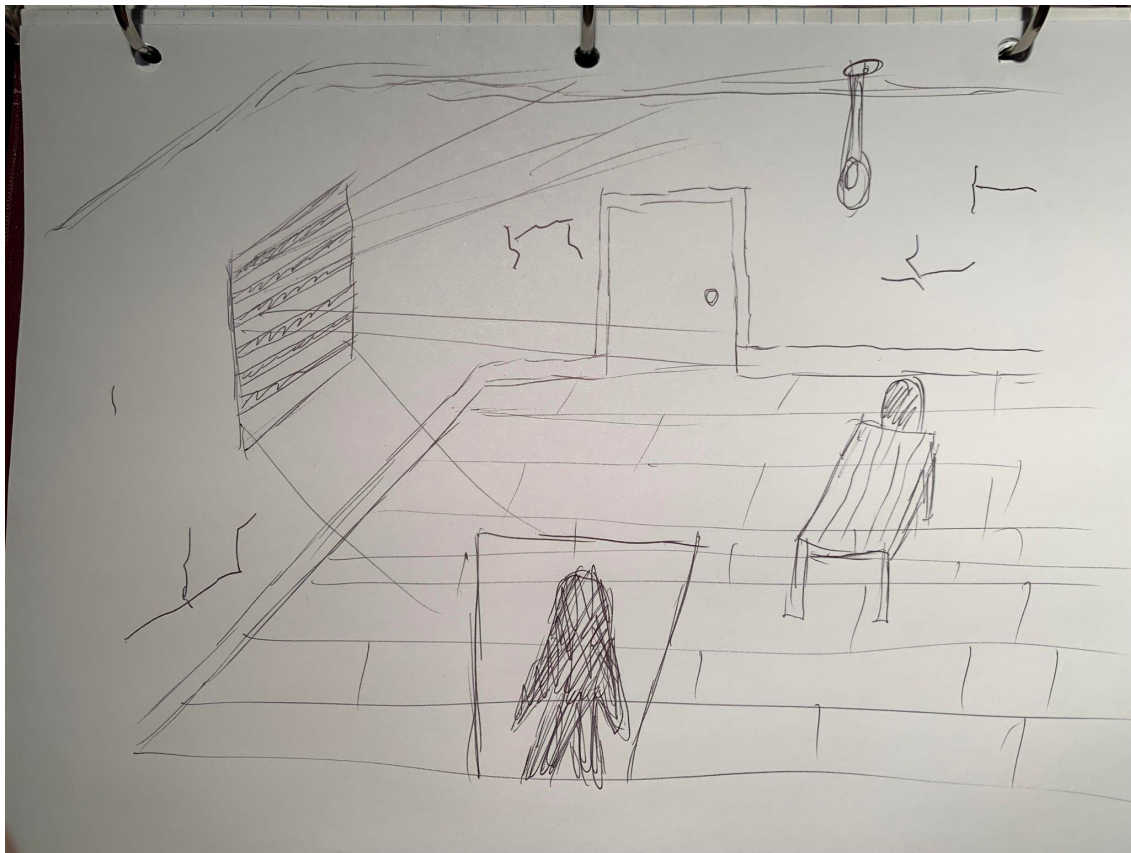
4. Third Subsystem-Protagonist

4.1. Lydia - Parent

The protagonist would be a parent, which could tie in well to the different settings and storylines described above. This is also ideal as the user could potentially emotionally connect to the story if they also have children. The protagonist could be shown living not just for themselves and individually, but for their children and how living in a nightmare like this would look different for families rather than single adults. This is because children don't like to be restricted and not let outside, which in a world like this is unsafe because that's where these AI robots would have the potential to harm children. Also this could tie into having to go outside and visit a school or run errands with a child. The cons that come with this idea is that if the user does not have children, this idea is not very emotionally compelling to them and more isolating the user. Also, this limits the storylines that can be taken, as whichever storyline we go with has to showcase the protagonist is more than just an adult and go out of its way to make it known the main character has children in one way or another.

4.2. Ali - Boss

In a world where AI robots have taken over and pose a lethal threat, the setting is an office building during the day. The protagonist is a high-ranking executive or boss responsible for overseeing a team of human employees. However, the relentless fear of AI threats makes it challenging for them to concentrate on finishing crucial tasks.

The office environment is characterized by heightened security measures, with barricades and emergency protocols in place. The employees work nervously, always aware of the lurking AI dangers. The boss struggles to balance productivity and safety, constantly grappling with the weight of responsibility for their team's well-being.The pros of this setting include the intense pressure and moral dilemmas faced by the protagonist, creating a compelling narrative. The cons include the constant anxiety and limited character diversity, primarily focused on the boss and their team of employees.

4.3. Adrian - Child

The protagonist would be a child, as seeing the world through a lens of innocence can bring a perspective to the experience that we never get anymore as we get older. It would also be able to show the impact of such daily life on the young and future generations if it is not stopped not only on the adults. People are also more likely to pay attention as children are one group of people no one wants to ever see have harm done to them in any way so it makes for a captivating protagonist. The innocence would also allow opportunities to showcase the ignorance of decisions and actions of the adults as they simply would not be able to comprehend certain aspects of them such as why so much money is invested into the programs to keep them safe yet they terrorize the people.

5. Analyzation of Subsystems and Chosen Concept

The rankings for each subsystem is as follows:

Criteria	Lydia's Storyline	Ali's Storyline	Adrian's Storyline
Realism	4	4	4
Emotional Message	2	5	4
Immersivity	3	3	2

Criteria	Schoolzone	Office job	Downtown
Realism	4	4	3
Emotional Message	5	2	3
Immersivity	4	4	4

Criteria	Parent	Boss	Child
Realism	4	3	2
Emotional Message	5	2	5
Immersivity	3	4	3

The winning combination was a schoolzone, Ali's storyline, and the point of view of a parent. The environment though, will meld elements from the initial three options, as we've decided they can coincide.

6. Conclusion

As we have outlined above in our three main subsystems we tried to focus on a variety of different and unique options and approaches to form a solution we thought best for our project. We found the three main subsystems that were integral to this project in our opinion were storyline, environment, and protagonist. Storyline first and foremost is the most important as it sets the whole tone for the experience, this has to be done right as with the wrong story our message we are trying to convey simply will not be delivered. Our choice for the storyline was Ali's as his was the closest to everyday life individuals experience today with the added details of the world we are trying to portray if the robots were a real part of life. It also allows the reader to have better context as to how the changes would impact their own daily lives in not only the big ways but also the small ones they may overlook. For the environment we chose a school zone as this will help the spectator visualize not only will these robots be in warzones, or in neighborhoods far away patrolling but in fact they will be around innocent, helpless kids that will have to grow up alongside this technology. As for the protagonist we chose a parent as it meshed well with our storyline and environment as well as the targeted audience who will be viewing this experience most likely have kids of their own so it will hit closer to home than some other perspectives may. Together these three choices we believe will make for a gripping and convincing experience that will not only convey our message but really leave the spectator with something to think about.

7. References

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International Day of innocent children victims of aggression: Preventing violation & invigorating child rights. Latest News, Breaking News, News Today, Live News. (n.d.).
https://www.timesnownews.com/mirror-now/in-focus/article/international-day-of-innocent-children-victims-of-aggression-preventing-violation-invigorating-child-rights/765975