Bachelor's Project: Quantum Psycho

Project Documentation

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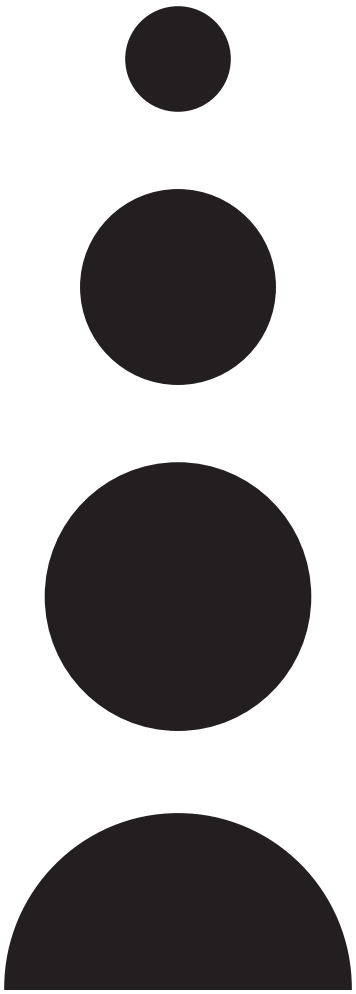

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1.1 The world of Quantum Psycho

In the heart of Night City, chaos has become the prevailing condition. Neon-lit streets now overflow with anarchy following a massive cyber-attack that threw the city into disarray. The aftermath has witnessed an alarming surge in Cyberpsychosis, affecting nearly all MaxTac agents who have succumbed to the effects of the cyber-attack. This situation presents an enigmatic irony within this dystopian narrative.

Amidst the turmoil, two individuals stand as exceptions, seemingly immune to the digital pandemic. Their journey unfolds against a backdrop of uncertainty and upheaval. Guided by the experienced counsel of a seasoned training officer, their mission reverberates through the pulsating streets: restore order by employing any necessary means.
However, chaos persists with unwavering intensity. A series of interconnected events have unleashed horrors born from reckless biological experiments conducted in the city's laboratories. These aberrations, now set loose upon the cityscape, prey upon any living entity, further complicating the mission and plunging the metropolis into deeper jeopardy.

As these individuals navigate this whirlwind with a partner by their side, 'Quantum Psycho' transcends the realm of a mere game; it represents an adrenaline-fueled symphony of survival and strategy. Their resilience amid the chaos will shape the destiny of Quantum City, where the clash between order and pandemonium mirrors the ambiguous boundary between human determination and technological turmoil.

1.2 Title Origin: Quantum Psycho

1.2.1 Quantum: An Evolutionary Chaos

The title “Quantum” in Quantum Psycho represents the essence of a world in constant flux, mirroring the quantum principle of unpredictability. Just as quantum mechanics describe the inherent uncertainty at the subatomic level, the game’s narrative embodies this concept on a larger scale. The term reflects the city’s state, a metropolis thrust into turmoil by a catastrophic cyber-attack, where the fabric of reality and order has been disrupted.

1.2.2 Psycho: Unraveling Minds in Chaos

The term “Psycho” delves into the psychological turmoil experienced within the game’s universe. It encapsulates the mental disarray and chaos that envelops the city, where Cyberpsychosis grips the populace, causing havoc and confusion. The choice of “Psycho” signifies the unraveling of stability, the breakdown of societal norms, and the relentless challenges inhabitants and players face.

1.2.3 Quantum Psycho: A Harmonic Discordance

The amalgamation of “Quantum” and “Psycho” in the title embodies the thematic essence of the game, a clash between the unpredictable, ever-shifting nature of a quantum world and the psychological upheaval resulting from a city in chaos. The title unifies these seemingly contradictory elements, portraying a harmonious discordance that defines the immersive experience awaiting players.

Quantum Psycho is not merely a title but a thematic encapsulation of the game’s narrative depth and immersive world-building. It unites the concept of a turbulent, unpredictable reality (“Quantum”) with psychological turmoil and societal disarray (“Psycho”), inviting players to navigate a world teetering on the brink of chaos and order. The unpredictable meets the unsettling, genuinely immersive gaming experience in this realm.

1.3 Origin of the Idea

The idea comes from two main points. One is my deep appreciation for the Cyberpunk world, tracking technological advancements and venturing into a realm where societal critiques merge with technological innovations. Particularly in the Cyberpunk universe, we witness an even greater rift in the polarized society due to technological progress. The central focus of my thesis revolves around artificial intelligence, raising the philosophical question of where the boundary between humans and machines blurs to the extent where we might relinquish the title of ‘creative’ and become curators rather than creative creators. The big question is, who holds the brush: us, humans, or the machines? Within a setting akin to what we find in Cyberpunk 2020, it might serve as the best example to illustrate these impacts through narrative and, of course, via the project’s development phase. AI and Cyberpunk are closely intertwined themes, like rocket and fuel. One cannot function without the other and produce the same result. This combination perfectly mirrors specific emerging problems through narrative and game development.

Figure 1. Splash Image of Quantum Psycho, the background made by AI

2.1 Preparation

Given the limited timeframe for project development, the primary focus shifted towards establishing an efficient workflow to minimize development duration. The decision entailed presenting a Cyberpunk-style world within a top-down game format, primarily emphasizing time efficiency, followed closely by optimization considerations.

The top-down perspective offered advantages as it reduced the need for intricate detailing due to the player's camera distance from the scene, resulting in significant time savings. Additionally, maintaining an enjoyable gaming experience without overloading memory with massive textures was achieved by opting for lower-resolution textures at this distance while preserving visual quality. Although alternative methods exist to handle larger textures effectively, time constraints remain paramount.

External resources credited to the project were leveraged to expedite game development. Platforms like Cargo provided access to a diverse library of models for a monthly subscription. Moreover, the process was significantly accelerated by utilizing the robust foundational elements from the Dev Voyage template. Despite these aids, the workload remained substantial and became mentally taxing.

Figure 2. Camera distance visualisation

Nevertheless, this method facilitated considerable time savings in the development process. It is not recommended to undertake a similar approach, given that it demanded nearly two months of intense workdays, extending from 8 to 19 hours, with weekends being sacrificed. Despite the challenging nature, the endeavor proved an adventurous experience. If asked whether a similar endeavor would be undertaken again, the answer would be affirmative.

2.3 Overview of the development process

During the development process, I encountered several more minor and significant challenges, partly due to the need to acquire new skills in certain areas. This was most evident when I aimed to achieve material effects for which I still needed to gain the appropriate expertise. Thanks to well-written Unreal Engine documentation, I found solutions relatively quickly that helped me progress with the project within the expected timeframe. Regarding time management, I achieved entirely positive results, which stemmed from learning a lot from past mistakes and trying to avoid them. Thorough planning plays a crucial role in any project. I assessed my capabilities and resources, based on which I created a solid development plan. Despite encountering new things, I had enough time to learn and implement them into the project. The only downside is the short deadline, which forced me to create a very tight schedule.

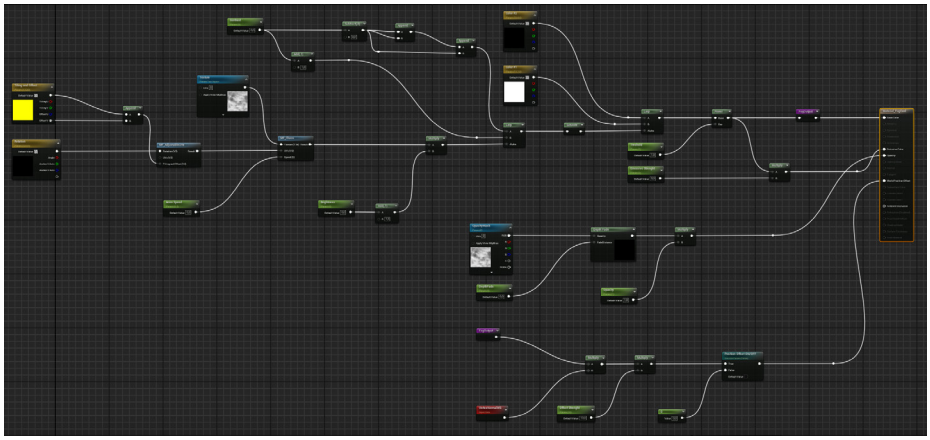

Figure 3. My material for custom fog that achieves the desired effect using two material functions

The main focus of my project was the question of my thesis; namely, I tried to determine how much I remain a creative creator when using AI assistance and where the line is drawn when I only act as a curator in the process. Therefore, I used AI-generated textures for my project and tried to make the most out of this workflow. It's worth mentioning that there are tools I didn't have access to, such as the Atlas software, which would have enabled me to create entirely new levels with the help of AI. Thus, the focus remained more on texture generation.

During development, I learned a lot of new things related to Unreal Engine, such as how to create materials for the user interface or achieve transparent effects when an object obscures the character. I delved into the world of Blueprints, and new doors opened for me regarding game optimization.

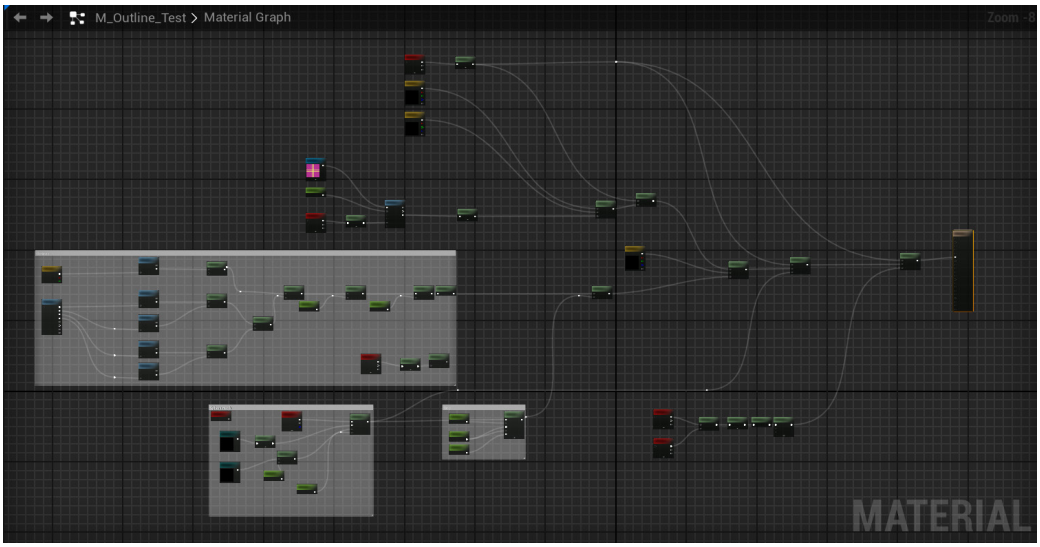

Figure 4. The material I used for the outline scan to achieve the effect of building the virtual world

Back to the question of where the boundary is between me being the creative artist and where the point begins where I am the curator. So, who holds the brush? I have found the answer in the course of development.

AI was present in my development when I created UI elements, textures, and character images. The deadline influenced the process, so in these cases, I was more of a curator than a creative creator, so the result depended on AI's influence. However, one of the best examples was the User Interface design. In this case, when I asked the AI to generate UI examples for me in cyberpunk style, I couldn't use them in the final product. However, it was perfect to give me some direction on where to go with the design issue. So, the creative part was up to me, and I got a solid foundation for it. So, the extent to which AI can replace us in the role of creative creator is absolutely up to us and not the AI's capabilities. AI is still a tool; how we use it is our decision alone.

As you can see, several factors influenced this during my project, such as the upcoming deadline or even the priority of a particular image in the project. On the positive side, I see AI's ability to deliver quick results as being able to help the maker get or work through the correct visual result. An excellent example of AI is the automatic topology generation on a given model. We have plenty of options for this nowadays, but for functionality, it is more of a reasonable basis than a result that can be used in an animation.

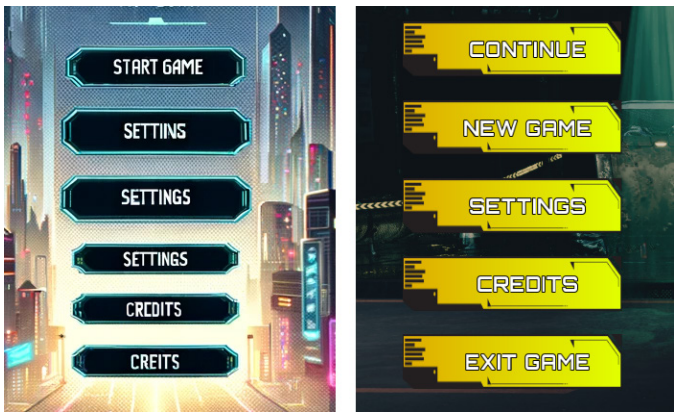

Figure 5. AI-generated UI is on the left side, while the UI created with Adobe Illustrator and Photoshop is on the right side

3. Conclusion

The project reflected technical abilities and extended into the philosophical realm of the creator's role. During development, I concluded that the specific boundary between losing the role of creative creation and transitioning into the role of curator is influenced by numerous factors. It's worth mentioning factors such as deadlines or the level of AI development. In this case, AI isn't yet capable of interpreting abstract sentences during prompt execution, so with complex requests, there's a slim chance of obtaining the desired result. A significant example during my development was when I attempted to create textures for various advertising boards; the AI struggled to generate textual parts, rendering it unusable from that point onward. However, regarding backgrounds or characters, it truly excelled in those cases.

Ultimately, I concluded that there's still a need for our creative input, even when AI assists. From here on, it can't be seen as more than a powerful tool in the toolkit of creativity. Of course, the question arises regarding characters or backgrounds where precise text isn't necessary for generating textures. I realized that in every case, it's our own decision how much we rely on AI-generated textures. If a quick solution is needed, like in my case where there weren't weeks available to focus solely on a particular character's appearance, we could say it was a simple curator role for me. However, if I had more time, I could have used it as an inspirational base and fully developed my character.

The use of AI in game development is a double-edged sword because there's the potential to rely on it heavily, thus losing the creative role. However, it can also be used as a swift and visually effective brainstorming tool, providing inspiration and aiding in concept creation and environmental or character concepts.

It's also worth mentioning that there's little sense in using AI-generated resources, for instance, for creating basic materials, as in the current scenario, we have a vast database that covers almost every existing material. It's unavoidable not to use software like Adobe Substance Designer for more complex materials. Of course, this could change in the future, and perhaps we won't have to wait long for a much more advanced AI to be available to the public, addressing the mentioned problems. Nonetheless, it's our responsibility to use this opportunity creatively or transition into the role of curator.

Figure 6. An example of how AI is not effective for textures containing text, but the opposite is true for characters

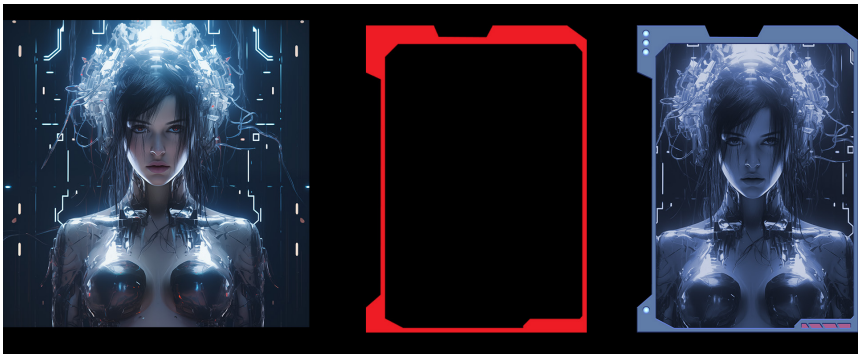

Figure 7. Protrait made by AI and then I made the frame for it in Illustrator and Photoshop

CREDITS

Kitbash3D // Cargo platform - 3D Models

Quixel - Materials

Leonardo AI - Textures, Concept Art

Midjourney- Textures, Concept Art

Game Dev Voyager - Shooter Template

Ovani Sound - Music and SFX

Athian Games: Art of Shader - Film And Special Effects

Jonathon Frederick - Modular Scifi Season 2 Starter Bundle

FX Cat UA: Realistic Starter VFX Pack Vol 2 - VFX

LINKS

itch.io: LINK

GitHub: LINK

Google Drive: LINK

FIGURE INDEX LIST

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Quantum Psycho
Title of Project

Who Holds the Brush? - A Study on Human Control in AI-Enhanced Game Development
Title of Corresponding Thesis

With my signature, I confirm to be the sole author of the work presented. Where the work of others has been consulted, this is duly acknowledged in the work's bibliography. All verbatim or referential use of the sources named in the bibliography has been specifically indicated in the text.

The work at hand has not been presented to another examination board. It was neither in the same nor in a similar version part of an examination in the previous course of studies and has not yet been published yet.
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4 January 2024, Köln
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