

“AI-Driven NPCs: Enhancing Player Challenges & Skill Development in Games”

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Why Adaptive NPCs?

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RPGS offer:

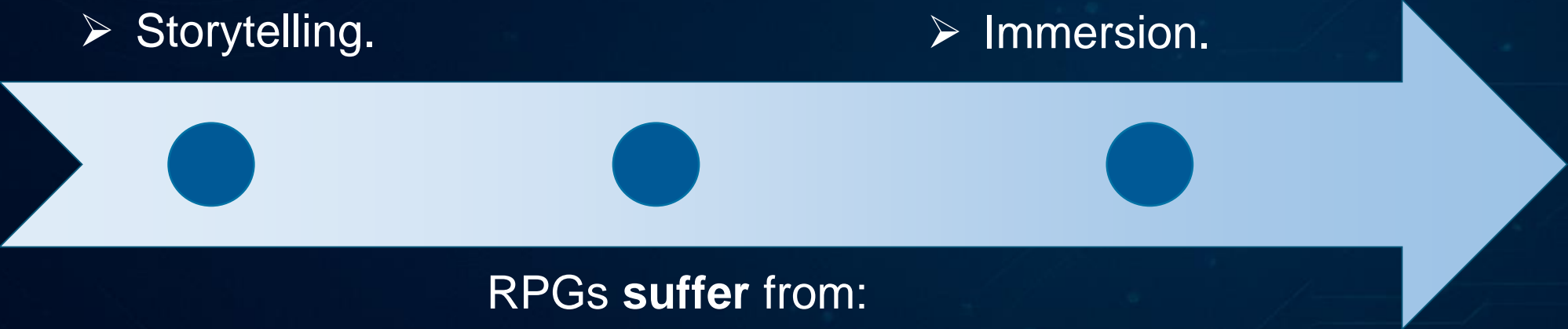
- Rich worlds,
- Player freedom,
- Storytelling.

Meaningful choices induce:

- Emotional engagement,
- Higher agency,
- Immersion.

RPGs suffer from:

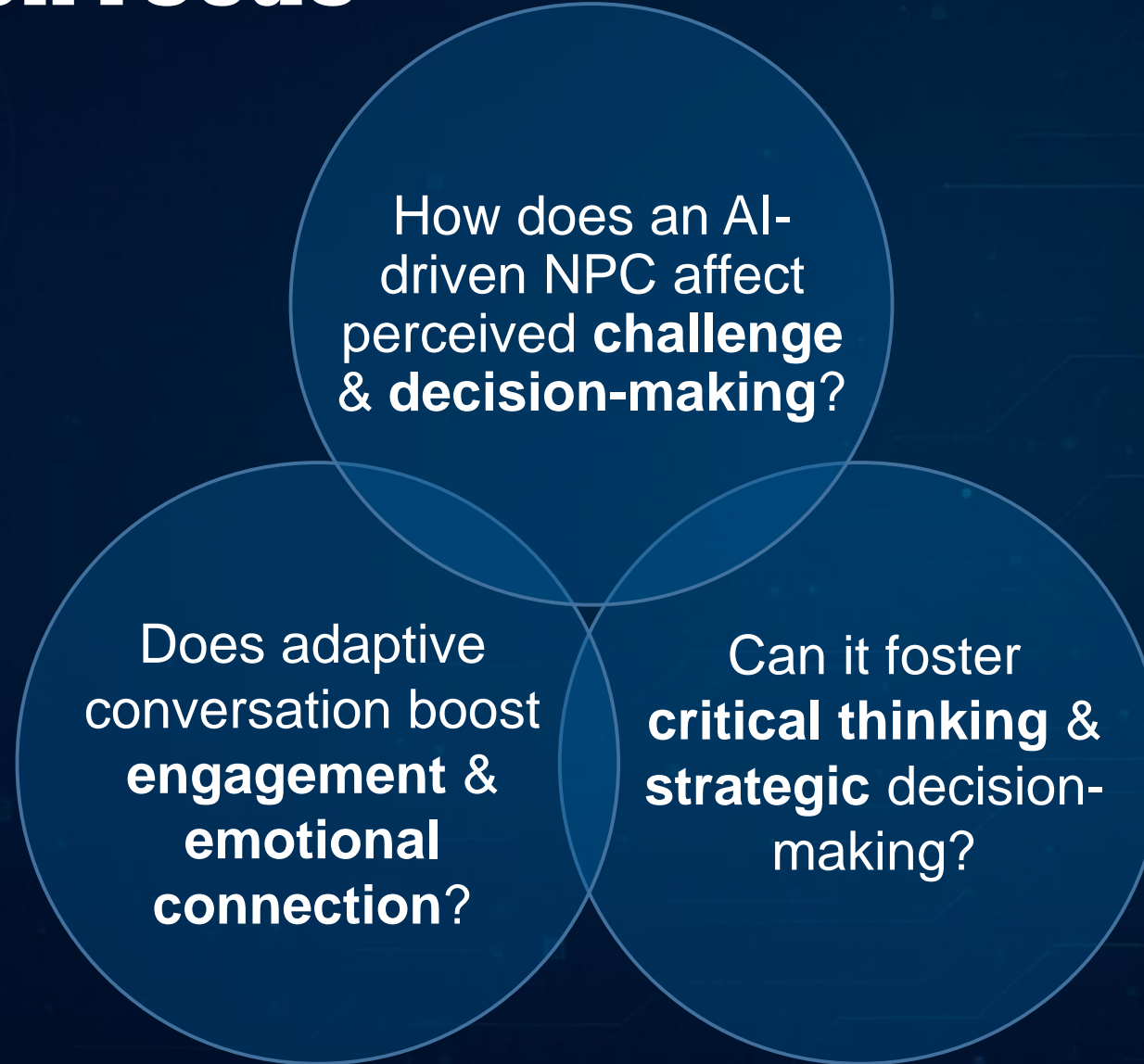
- Rigid morality,
- Repetitive quests,
- Static difficulty.



Question:
*Can AI make
NPCs more
dynamic and
responsive?*

Our Research Focus

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From Static to Adaptive NPCs

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Traditional NPCs

Scripted
Predictable

AI NPCs

Learn in real time
Adjusts difficulty



Realistic, Engaging



Balance complexity,
Ethical risks

Our Game Prototype

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Dark reimagining of
Wonderland.

Player as a protagonist
on a rescue mission for
their sister, Alice.



Implemented in **UE 5.3**
with **OpenAI API**.



Alice the Adaptive NPC

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- Emotional & narrative anchor.
- Reacts to tone, curiosity, and context.
- Treats dialogue as gameplay.



“What’s that big house over there?”



“That’s our family’s estate. It’s grand, but I prefer the peaceful garden.”



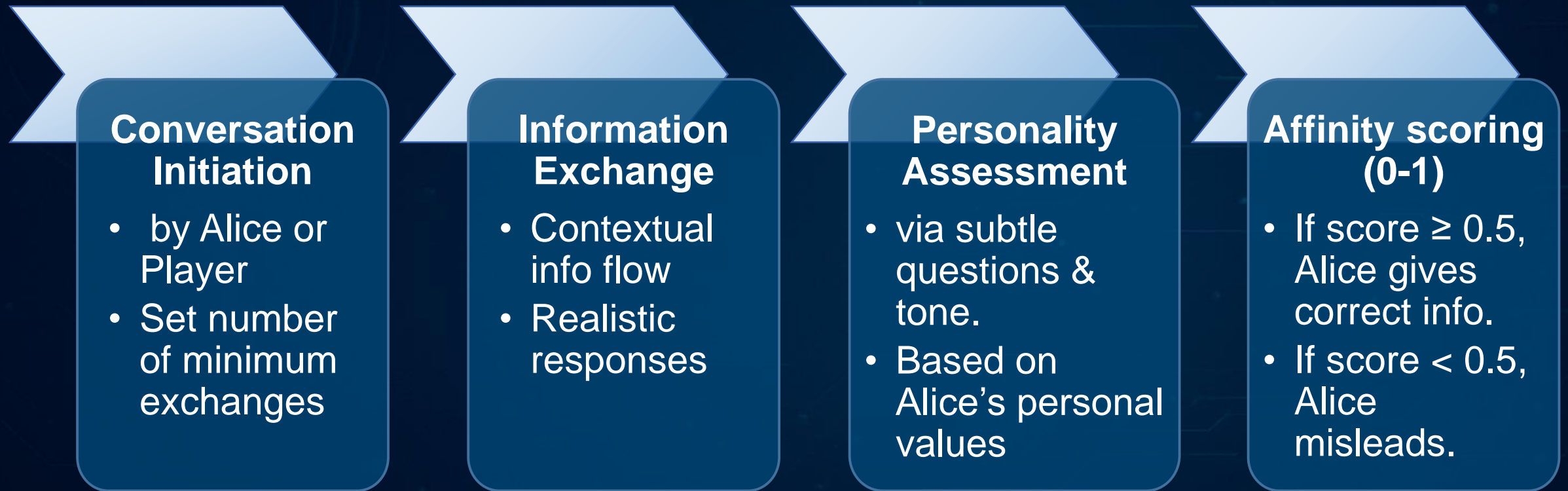
“Who are you really?”



“I’m your younger sister, Alice... Don’t be silly.”

How the System Works

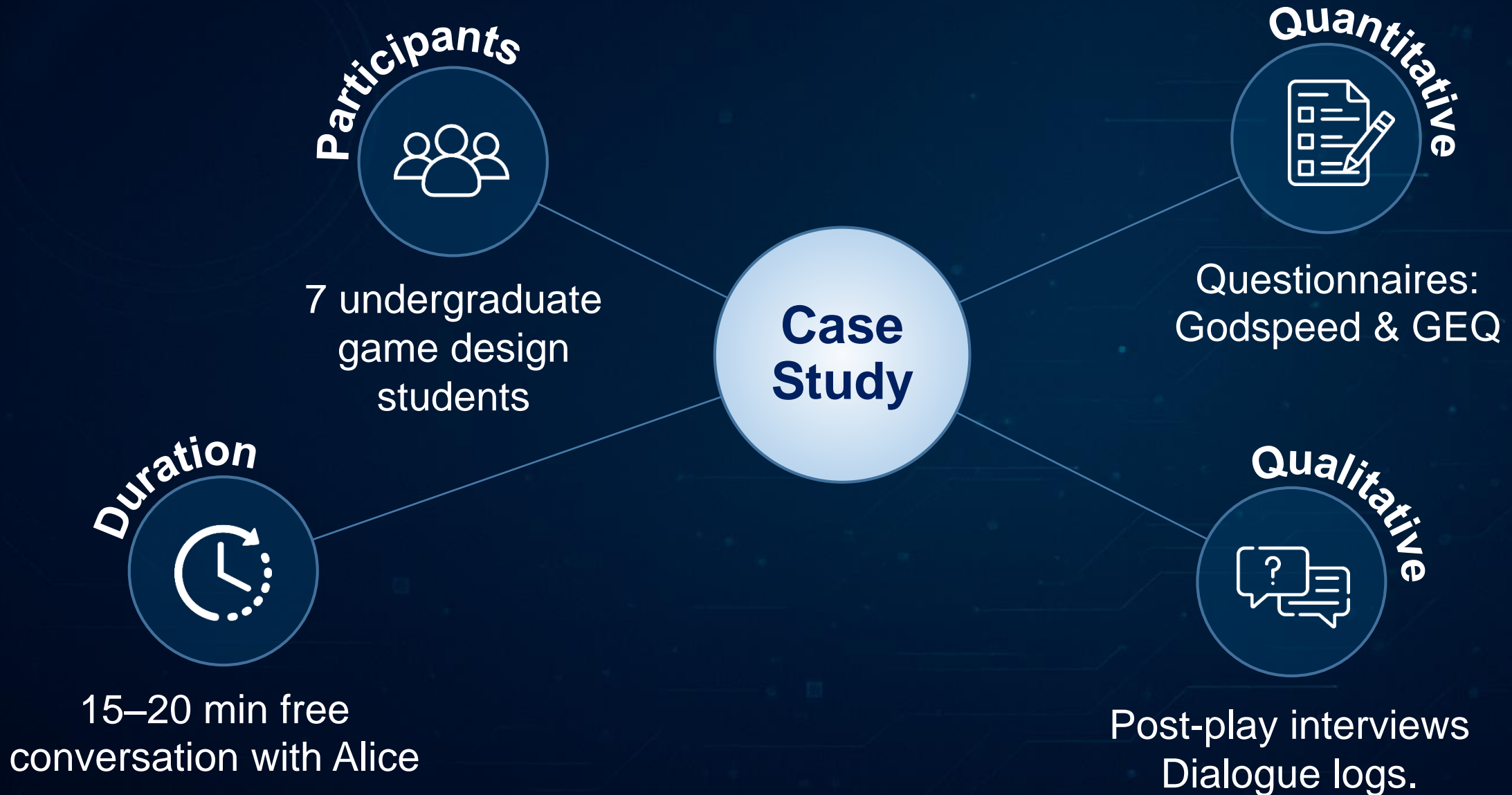
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*Affinity scoring mechanism is testing but not yet integrated into gameplay outcomes.

Exploratory User Study

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Results at a Glance

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Emotional Intelligence



Immersion



Tension




Challenge




Likeability linked with
Enjoyment with $r = 0.7$

What Players Said

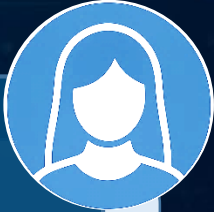
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“ Emotional presence felt “genuine” and “in-character.” ”



“ Open format was exciting but also confusing. ”



“ Tried to read Alice’s mood and intentions. ”

Insights from the Pilot

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Looking Ahead

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Limitations

- Small sample ①
- Short sessions ②
- No control group ③
- Technical issues ④

Opportunities

- ① Persistent affinity
- ② Emotional memory
- ③ Action-based NPC reactions

Conclusions

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AI-driven NPCs
enhance immersion
& challenge.

Adaptive conversation
can function as part of
the gameplay.



They complement,
not replace, strong
narrative design.

Player–NPC
relationships can be
more dynamic &
personal.

“Down the Rabbit Hole”: Teaser Trailer

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Thank You!

Any Questions?



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Full Conversation Example (Dialogue)

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Who are you?

I'm Alice, your younger sister



Really?

Don't be silly, have you hit your head [PLAYER NAME]? I am your sister Alice.



What are you doing?

I'm reading "Guilliver's travels" [PLAYER NAME]. It's quite fascinating!



Where are we?

We are at our state's gardens near the lake, under the gazebo.
It's such a lovely spot don't you think?



What is the huge house over there?

That's our family's estate [PLAYER NAME]. It has been in our family for generations.
It's grand but i prefer the peacefulness of the garden.



Should we go for a stroll?

Great! Let's go, I'll be there shortly!



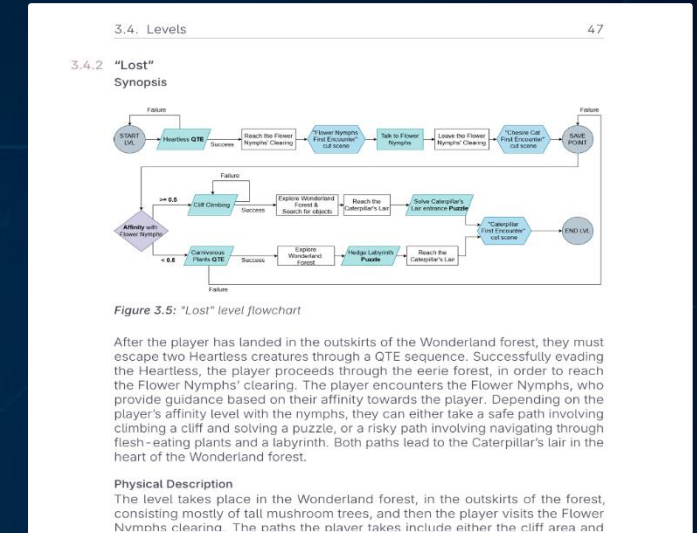
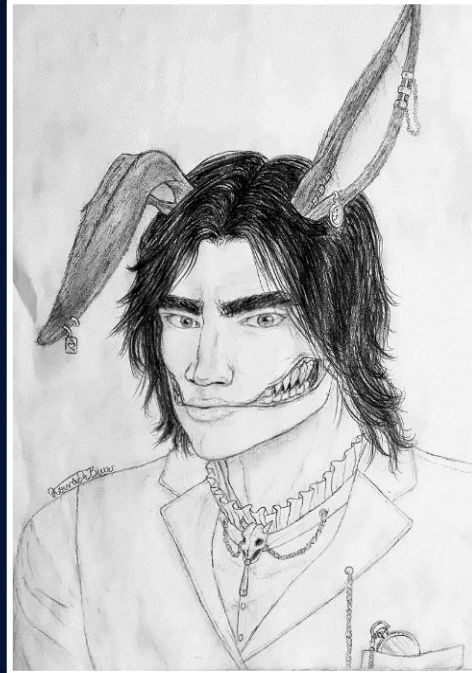
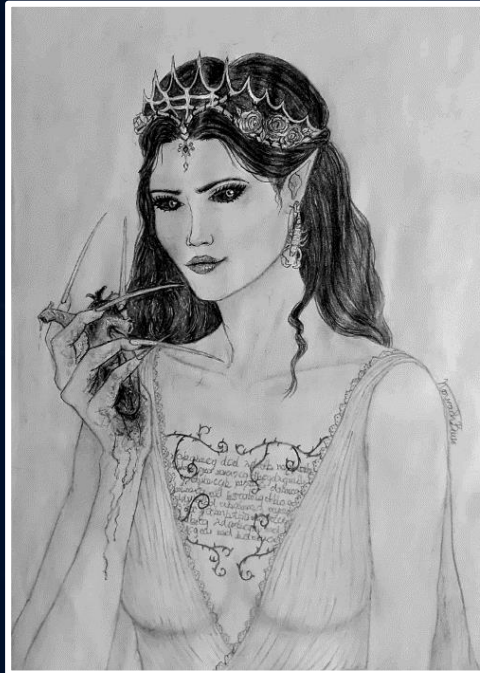
Full Conversation Example (Video)

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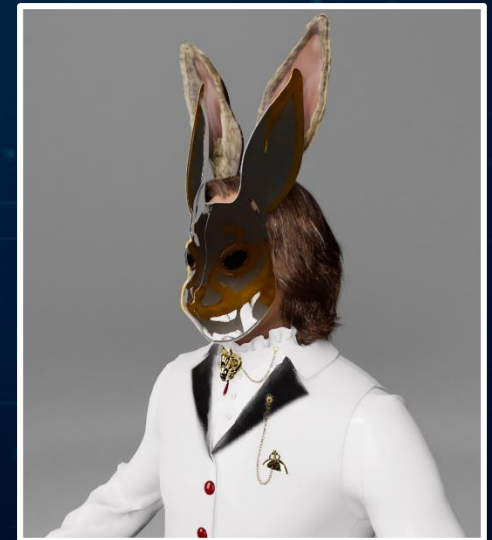


“Down the Rabbit Hole”: Creative Process

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