



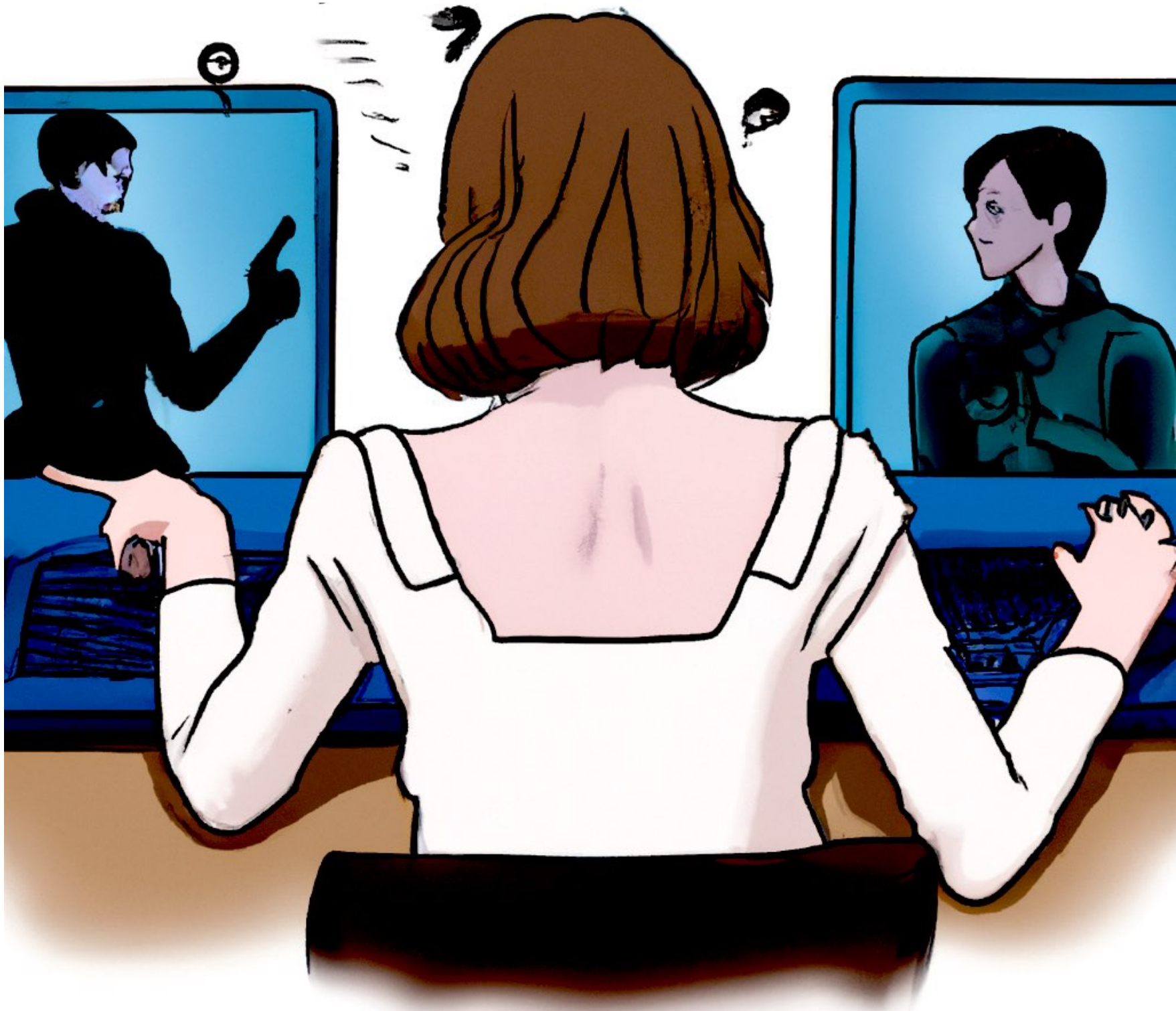
# Universal Character Model

## The first steps

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# UNIVERSAL CHARACTER MODEL

## THE FIRST STEPS:

### Abstract

Continuing on from the initial UCM paper, this second white paper examines the viability of collaborative use of Large Language Models to assist in generating *in character* responses. It explores the creation process of a structured prompt designed to meld with the normal approach of writers during preparation, construction and exploration of narratives. The goal of this project was to example a proposed workflow for creating a preliminary Universal Character Model (UCM), which leverages author processes and intentions, balanced with Large Language models, to assist in pre-populating immersive autonomous characters.

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### White paper #2

<https://www.etcentric.org/universal-character-model-first-steps-white-paper/> (not active yet)

### White paper #1

<https://www.etcentric.org/universal-character-model-detailed-in-latest-etc-white-paper/>

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# THE FIRST STEPS: CONSISTENT CHARACTER DIALOG PROJECT REPORT

Universal Character Model: A character definition tool that casts your audience inside immersive stories

## Universal Character Model Summary

In the Universal Character Model (UCM) white paper, we outlined a direction to advance immersive narratives and evolve interactive characters through the combination of storytelling methods and generative AI systems like GPT-3. A Universal Character Model houses all attributes of any specific character: who they are, their motivations, their goals, and their methodology to achieve them. A model of this sort creates consistent character behavior within the fluid context of interactive and dynamic stories, where audiences are cast inside the story. A UCM is needed to create believable and flexible character-based experiences, scalable and consistent story environments and compelling stories.

“Every live theater performance is essentially an adaptation of the rehearsed show, performed especially for that night’s audience. And it is that personal adaptation that characters built with a UCM can offer: each audience gets their own personal adaptation of the characters and story world because the character is being shaped by the audience as it goes”

- *Excerpt from the UCM white paper*

### Elements of the UCM used in this project

The elements laid out in the UCM white paper are far-reaching, however they all revolve around a simple concept of characters reacting to audience presence. The complexity that this brings, means that, more than ever, the author’s narrative intent must be preserved, and the UCM looks to do this. To take the first step towards implementing the UCM in practice, we focussed on character dialog and, in particular, the following elements:

- **Defining Characters:** Their motivations, quirks, and personality
- **AI-generated dialog:** Using the character definition to generate dialog
- **Author-first approach:** Ensuring the early process development is derived from the needs of a writer
- **Part scripted, part generated:** A live experience that combined both wholly scripted, and generated elements

In order to gather genuine clear-cut results, we put aside other elements of the UCM, such as:

- **Wider and complete narrative consistency, as described in the *experience container* section of the paper:** A complete narrative consistency would prevent things such as a character mentioning their older brothers, whilst earlier saying they were an only child, or perhaps mentioning a well-known fast-food chain that doesn’t exist in this story world

- Guest character model: a way to define audience members in the same way we do characters
- Character Memory: Deciding what a character remembers and how that data is used
- Emotional AI-generated voices: We have used a voice for the character that was trained in the most straightforward fashion, but have not spent a huge amount of time refining it. We believe with further training, and with swiftly upcoming advances in this technology, the AI-generated voice will portray greater emotional ranges up to the standard we would expect

We believe that these remaining elements should be developed as a next stage of this project, and that they should be tested with a broader audience, rather than as a more internally-focused proof of concept.

### Tasks for this project

Our hypothesis for this current scope was this: *Can GPT-3 be constrained to generate and perform consistent and resonant character dialog in response to an audience's conversational input.*

We decided to work on dialog-only experiences (a phonecall) without the need for accompanying visuals, in order to focus on the words that the audience would experience. We used a well-known IP in order to strength-test if the generated dialog was consistent with the well-known character's essence. We decided that the scripted and generated dialog should seamlessly move from one to another without the player being aware.

### Process

The story was written on the **Charisma.ai** (<http://Charisma.ai>) platform. Its node-based system with GPT-3 integration guides the audience through both the generated and author-written dialog, allowing the author control of the rhythm of

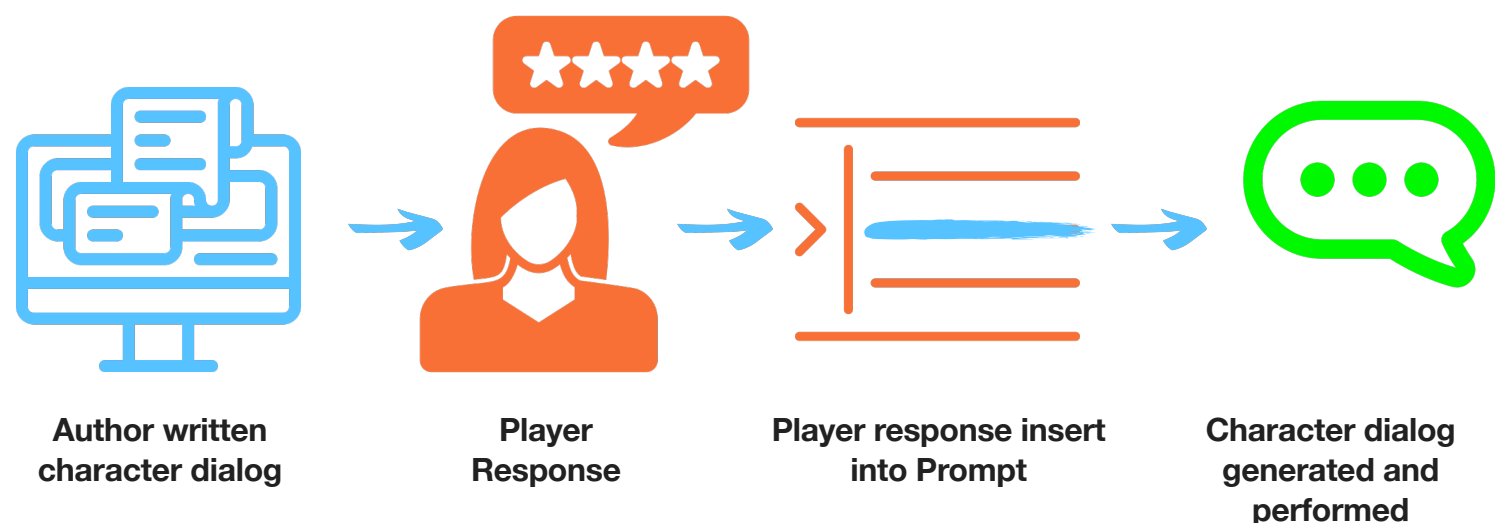


the experience. It houses the AI-generated voice, developed by *resemble.ai* (<http://resemble.ai>), in order for the character's voice to be used consistently across the experience. It also provides a place to edit and refine the prompts which were sent to GPT-3 for generations.

We first worked on developing a generic prompt that housed a basic story outline, character definition, (personality traits, motivations and tone), and a short summary of the scene it was to be used in. We used elements from Dramatica to inform and inspire these sections of the prompt, with motivations, behavior and role foundations being scrutinized. This informed the structure of the text we chose to test within the GPT-3 prompt. We worked on refining this prompt, editing which information was included and how it was communicated until we were getting generations that consistently sounded like the character. We also allowed space for the player responses to be included within the prompt.

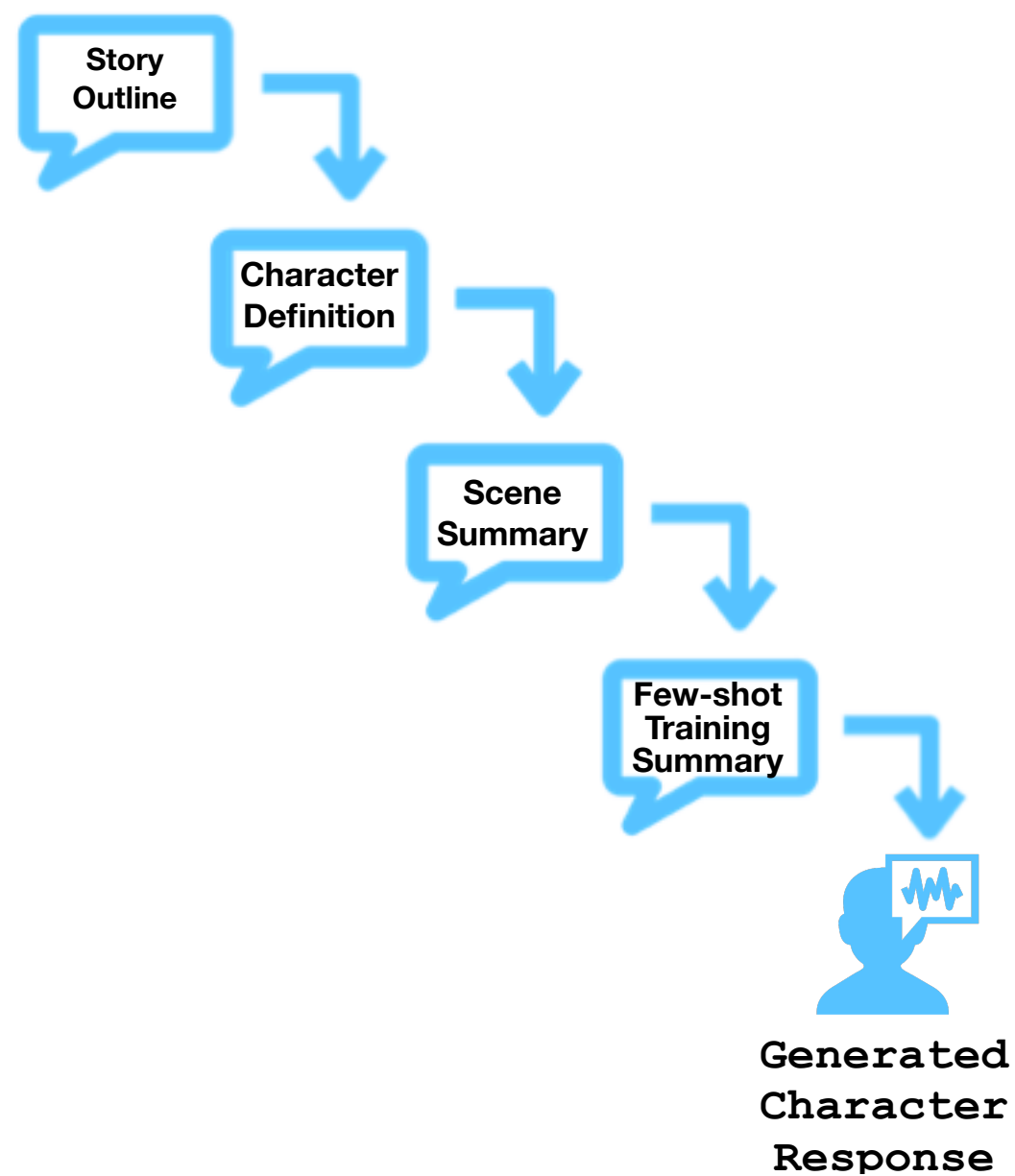
After writing an end-to-end interactive conversational experience with the character and player within Charisma, we were now ready to use the prompt to generate character responses.

The structure of each dialog exchange would be as follows:



Using this initial prompt, the generations were promising, but we felt they could benefit from more specific context awareness. At each interaction point we refined the prompt even further by adding few-shot training. This is a process of providing the prompt with author-written examples of solid and desired character responses to possible player input. It is almost like a style-guide for how the author wishes the character to respond. We worked this into the experience at every dialog exchange.

## Prompt Structure





By testing, or “rehearsing”, the character live within the Charisma platform, we could quickly refine the few-shot training to improve the responses the player received.

### Three Sample Responses

With the above prompt technique, the following dialog was generated:

*Author-written*

**BABY CHARACTER**

Spitball business to me, Player! Brand new innovative product on the market aimed solely at babies - what's the product? Go!

**PLAYER**

A diaper that has cupholders to hold bottles of milk?

*Generated*

**BABY CHARACTER**

That's a great idea! I know when I was a baby, I always used to spill my milk. It would be so much easier if there was a way to keep the bottle in place.

*Author-written*

**BABY CHARACTER**

Spitball business to me, Player! Brand new innovative product on the market aimed solely at babies - what's the product? Go!

**PLAYER**

A spoon that doesn't spill?

*Generated*

**BABY CHARACTER**

Player, you're a genius! Babies are messy eaters. Less mess for the parents means more time for the babies!

*Author-written*

**BABY CHARACTER:**

Spitball business to me, Player! Brand new innovative product on the market aimed solely at babies - what's the product? Go!

**PLAYER**

How about a bed that doesn't need cleaning if they have an accident in the night?

*Generated*

**BABY CHARACTER**

That's a great idea! Parents are always cleaning up after their kids, and it's a pain. A self-cleaning bed would take away a lot of that stress.

From testing the prompt technique across many different scenarios within the scene, we can see that generations are heavily influenced by few-shot training. For example, we started with the bare minimum few-shot training to test how little we need, and found that even just 3 examples would give enough context for the generation to be largely on-point. Inconsistencies in character voice or tone, seemed to be rectified by adjusting the few-shot training to be more suited to the character. The better the example, the better GPT-3 was able to take influence from it. One of GPT-3's strengths is copying patterns, and the few-shot training provides those patterns.

A fundamental requirement of these dialog generations was to never let the player's suspension of disbelief drop. The goal is not "photo-realism" levels of narrative excellence, as that responsibility should still fall to the author-written lines. The generated dialog only needs to create the sophisticated illusion of narrative coherency. In interactive entertainment with traditional decision trees and locked-in dialog, even a tiny thing like the wrong tense being used, or a passing over of a piece of detail given by the player, can cause the audience to detect systematic automation, and for their belief to dissolve.

The content that was generated was predominantly on-point, often playful, effective and laugh-out-loud funny. If, on occasion, there was something slightly odd about the generation, it was never enough to derail the experience.

A next phase of this project will work to find new ways to improve the consistency, creativity and relevance of the AI generations. However, even at this basic layer of experimentation, we found a balance between author-written and generated dialog which allowed the storytelling and author-intent to prevail.

## NEXT STEPS

### Prompt Creation pipeline

The creation of the prompt needs to be integrated into a pipeline that encompasses processes the author already uses for storytelling. The prompts are currently handcrafted, but with further exploration into Dramatica's deep logic of storytelling, we believe it could provide a structure for populating and refining the prompt *as the author works*. Dramatica's storytelling logic could also potentially take on some legwork of deciding what is useful to include in the prompt at specific story moments. Improvements to the prompt creation pipeline could allow authors to test their characters sooner and in a more dynamic manner.

### Greater Narrative Consistency

The effects of greater narrative consistency within the generated dialog should be explored. We would need to look at how best to approach giving AI access to narrative structure and details, and when to expose it. This should take into account different genres, prior art, character roles and exposition, and player interactions. Narrative consistency should set the 'guard rails' across the story, as opposed to just the character, as we have currently achieved.

Dramatica could be used to give the prompt awareness of narrative structure in order to inform the context of the chronological moment in the story.

### Safeguarding

For as long as it has existed, generative AI has been criticized for its tendency to go off the rails narratively and ethically. Included in the next phase of this project is the requirement to consider the fact that immersed audiences might share personal facts to fictional characters, and that appropriate methods must be included as part of the production process. Basic work has been done on the current demo story but other avenues are available, and important to explore.

## Expansion of Visual and Audio depth

As stated at this beginning of this report, its scope has been to take a step forward to test the assumptions in the UCM, ensure that our thinking is heading in the right direction, and to explore the core foundations for generative narrative characters. We purposefully avoided expanding the scope into generative animation, 3D assets for storyworlds, and richer forms of content, however, our next step needs to leverage technologies such as procedural facial animation, AI-powered character performance, and full AI voice emotive performance. In this way, we can more clearly demonstrate the value of the UCM to the entertainment and technology industries

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