The GPT-3 Re-Imagining of "Howl" By Allen Ginsberg:
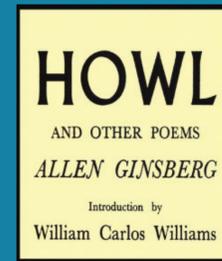## What Are The Strengths and Weaknesses of This Representation?

By Emmy Roday

OpenAI GPT-3

HOWL
AND OTHER POEMS
ALLEN GINSBERG
Introduction by
William Carlos Williams

Introduction

With AI technology rapidly advancing, natural language processing systems are producing higher quality creative work like music and poetry. With the arrival of GPT-3, the generative pre-trained transformer, in May 2020, we are now confronting more opportunities to question its strengths and weaknesses.

These transformer models have been known to successfully recreate the styles and themes of specific authors, writing across genres, and creating exciting new reversals. The main criticism remains that the AI cannot maintain coherent arguments or narrative threads.

Now, the most advanced GPT-3, attempts to reproduce famous and influential contemporary poetry. Through a comparative, literary approach, this paper will explore how the GPT-3 "re-imagines" *Howl* by Allen Ginsberg. Can this AI take on the immense task of successfully capturing the essence of Ginsberg's style, diction, and social commentary?

Background on GPT-3

GPT is a natural language processing system based on Deep Neural Nets. Through exposure to massive corpuses of written language, GPT generates text using algorithms that are pre-trained. As a language prediction model, GPT is designed to take one piece of language (inputs) and transform that into, what it predicts, will be the most useful next word. Some of its capabilities include answering questions, writing essays, translating languages, and even creating computer code.

In 2019, OpenAI released the transformer model GPT-2, which possessed 1.5 billion parameters trained on 8 million webpages. It required "fine-tuning" on particular poets, songwriters, and novelists in order to execute specific tasks related to their work. While GPT-2 retained basic understanding of language, churning out modified texts, GPT-3 has far exceeded previous standards for high quality and original text production.

GPT-3 is now the largest neural network ever trained. Its major distinction is scale: using nearly 116 times more data than GPT-2 and consuming 3 billion words from Wikipedia, 410 billion words from various web pages, and 67 billion words from digitized books. GPT-3 doesn't require fine-tuning or specialized training. Instead, the transformer model uses enhanced meta-learning to infer new patterns and tasks, following instructions purely based on text that was previously fed to it. GPT-3 employs next-word prediction based on its exposure to massive internet text corpuses.

Gwern Branwen Methods

Gwern Branwen, American writer and researcher, famously uses GPT to produce literary works. When generating his iteration of *Howl* by Allen Ginsberg, Gwern used the raw default GPT-3 model without any additional training.

He provided this short textual input to the transformer: "Transformer AI poetry: Poetry classics as reimagined and rewritten by an artificial intelligence." He then included the first 2 lines verbatim of Ginsberg's original poem. After reading the input, and the text, GPT-3 weighed the probabilities of 51K possible BPEs and flexibly adapted its writing style. In this iteration, GPT-3 modified the original 3-part poem into one poem of 715 words.

Notably, Gwern carefully approaches his prompts. As with the *Howl* prompt, Gwern always expresses his tasks in terms of natural language descriptions, requests, or examples. He says that compared to previous models, he *interacts* with GPT-3. He likes to "anthropomorphize" these prompts by adjusting the sampling settings and testing out various ones. Gwern will edit his tasks, or inputs, until the transformer understands and meta-learns the task.

Background on Howl

Allen Ginsberg, 1926-1997, was an integral American writer and figure in the Beat Movement. His single most influential text was his poem *Howl* published in 1965. This long-lined poem, composed of three sections and footnotes, was a revolutionary event for American poetry. It paved a bold and graphic future for the literary tradition. *Howl* was, and still is, the backlash to a destructive, conservative, and abusive society, or the "howl against our mechanistic civilization."

The poem's publication sent shock waves throughout America. As a result, the book was declared obscene for its "graphic sexual language" and the publisher was arrested. In the court case, *Howl* was ultimately ruled *not obscene* and instead deemed an essential literary example for the time. *Howl* became the manifesto of the Beat movement.

The poem is famous for its groundbreaking exclamations about madness, sexuality, drugs, and alcohol. But also for its revolutionary social commentary about war, religion, freedom of speech, capitalism, and creative inspiration.

Strengths

Mastery of Form & Themes
Ginsberg

"who were burned alive in their innocent flannel suits/ on Madison Avenue amid blasts of leaden verse"

"who walked all night with their shoes full of blood/on the snowbank docks waiting for a door/ in the East River to open to a room full of steamheat/and opium"

GPT-3

"who lost every thing, even the shirt off their back, who burnt their pencils, and drank cyanide in the form / of freedom"

"who jumped down electric stairs, and drank the poison, who picked up the gun, who walked in the snow"

Innovative Word Play & Language
Ginsberg

"who created great suicidal dramas on the apartment /cliff-banks of the Hudson under the wartime/ blue floodlight of the moon & their heads shall be crowned with laurel in oblivion"

GPT-3

"this is their /song, Hollow hearts & singing broken guitars the highest heater core of spirituality"

"who translated the metaphysics of love into forgotten languages of the body, who ate the lamb, and slept in the rain"

Weaknesses

Absence/ Misinterpretation of Relevant Allusions
Ginsberg
~"For Carl Solomon"
~"ah, Carl, while you are not safe, I am not safe"
~"Denver…. Mexico…. Tangier….Chicago… Idaho…Caribbean"
GPT-3
~N/A
~N/A
" Texas… Australia… Indiana…Washington…"

Direct Copying & Nonsensical Repetition
Ginsberg
"who ate fire in paint hotels or drank turpentine in/ Paradise Alley, death, or purgatories their /torsos night after night"

"who were expelled from the academies for crazy & publishing obscene odes on the windows of the skull,"

GPT-3
"who drank fire in paint hotels or drank turpentine in Paradise Alley, who ate fire in paint hotels/ who switched off their minds"

"who were expelled from the academies for crazy & publishing obscene odes on the windows of the skull,"

Misplaced Tones
Ginsberg
"with the absolute heart of the poem of life butchered/ out of their own bodies good to eat a thousand/ years"
GPT-3
"saying it & saying nothing: that Zero is a riot, my friend, that Zero is a rockin' good way to die."

Analysis of Strengths

The GPT-3 rendering of *Howl* is quite impressive. It demonstrates mastery of Ginsberg's stylistic form —the same long lines and repetition of "who" foregrounding the stanzas. The combination of these techniques created a striking accuracy in regards to *Howl's* momentum and reverberations. The GPT-3, too, crafted an incantation of sorts.

GPT-3 internalized *Howl's* extreme yet fragile energies. At its best moments, the transformer balanced sentiments of madness with the surreal, dream state, by using active verbs and images, belonging to both worlds: "singing broken guitars" "burnt their pencils" "drank the poison" "jumped down electric stairs" "ate the lamb." An exemplar line, which could've easily been perceived as belonging to the original poem, is: "sprawled in the alleyways of possible ecstasy."

Simultaneously, GPT-3 gracefully conceived of its own innovative language. ie. "the highest heater core of spirituality" and "metaphysics of love into forgotten languages of the body." These beautiful examples of word play offer readers new ways of thinking—which is, at its core, the main ethos of poetry.

Analysis of Weaknesses

Yet, these strengths became GPT-3's weaknesses later on. Not only did GPT-3 employ verbatim Ginsberg's line, "who were expelled from the academies," but it lost control of diction and created nonsensical lines (ie. the repetition of "who drank fire" "who ate fire"). While GPT-3 captured the essence of "madness" effectively, its predictive model may have limited this poem to that singular interpretation of "the best minds of our generation." They were not solely "mad" and "lost," but also activists and artists seeking bigger enlightenment through travel, drugs, and social justice. The misunderstanding of this major point led to the strange tone at the end of the GPT-3 rendering. Instead of Ginsberg's final comment on the Beats art lasting for eternity, GPT-3 concluded that the Beats were "saying nothing" and followed this with "rockin good way to die," illustrating a playful and careless sense of inevitability.

This notion leads directly into the biggest weakness of GPT-3— "the best minds" were *driven* mad by the *world* around them. GPT-3 missed this context entirely. It didn't grasp Ginsberg's driving social commentary about sexuality and freedom of expression; the larger political landscape of capitalism and war; the relevant historical allusions, especially locations like Tangier, Denver, and Chicago, which are all inextricably linked to the lives and ideologies of prominent Beat figures like William Boroughs, Neal Cassady, and Jack Kerouac. GPT-3 included locations that were irrelevant for the historical moment. GPT-3 also omitted *Howl's* dedication and direct address to Carl Solomon, the main impetus for the poem. These are features that make *Howl* incredibly personal, yet largely revolutionary.

While GPT-3 offers a remarkable re-imagining of Ginsberg's language, syntax, and energy, it's missing the historical context which shaped the "the best minds of our generation," including Ginsberg himself. The transformer produced an impressive text, possessing echoes of the original. But, GPT-3's words lose the strength of their meaning the closer we approach its source.

Citations

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