

Using a Chatbot to Critically Evaluate and Compose More Beautiful Haiku

David McMurray

In this paper, I share ideas for using Artificial Intelligence (AI) to assist students to evaluate haiku poems. Chatbots are conversational agents that use a known knowledge base to answer open or close-ended questions (Kerly et al., 2007). I suggest that chatbots can open up a new era of co-production of haiku by humans and machines. Machines can search and retrieve information that humans can analyze or review to make decisions, thus expanding the scope and pace of the generation of creative new literature. Such advances can also assist students of English as an international language (EIL) to more clearly voice their ideas and imagination.

Early Studies Using Haiku and Chatbots as University Student Assistants

Haiku has enjoyed a long history of transmission, first by voice, then by inkbrush, printing press and now digital forms. Researchers (e.g., Kawahata et al., 2018) have employed the short form to experiment with sending text by email, in tweets, and online. The fact that a lot of meaning can be compressed into three lines of verse without the need for punctuation such as a period or even a capital letter, meant the form became a favorite genre for digital experimentation. For example, in 1994, when the World Wide Web was just beginning to spread around the world, I emailed this haiku from a computer server at Matsuyama University:

*looking for you
across the milky way
no answers*

The above text was the very first digital haiku sent via a trial Internet mailing list as an experiment by the Shiki Team on the auspicious date July 7, 1994– (*Tanabata*, the star festival)– with researchers in the computer laboratory and haiku specialists. I used a MacIntosh LC 550 with a blinking cursor to type in this message. A few days later, several computer enthusiasts around the world replied. And within a week a crescendo of haikuists and students of haiku began replying. The haiku has enjoyed several iterations, including this printed version (McMurray, 2003):

*Reaching out
across the Milky Way
no answers*

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Kerly et al. (2007) employed a Wizard-of-Oz methodology to conduct an experiment with students where the role of the chatbot was filled by the experimenter. As in its namesake film, the chatbot-wizard was actually a person. This fact was not revealed to the participants until after the study to ensure that data collected from their interaction would be pertinent to a human-computer conversational design. As a result of the students' lack of trust and dissatisfaction with many of the machine answers, the researchers concluded that it would be difficult to replace humans with a machine chatbot.

Mudikanwi and Gotora (2018) introduced the idea of using chatbots as conversational agents at a university in Zimbabwe for answering questions from students. His experimental project used a close ended chatbot to answer questions in certain categories. Students could write a question in conversational-style English and the chatbot used AI in the form of machine learning to analyze the query and give out the best matching answer to the question. The chatbot was deployed on the university's website. As a result of the diversity of questions the machine received, the researchers concluded that a few more years of training would be required.

When Amsen (2022) asked ChatGPT about the AI's ability to compose a haiku in English, it immediately returned the following 5-7-5 syllable result:

AI's skilled hand

Crafts haiku with ease, it seems

Natural as can be

The Kyoto University researcher was dissatisfied with the above poem, noting that in common English pronunciation, the first line is definitely four syllables, and the last line is six. As a result of the research, there seemed to be room for humans to pick only the structurally correct haiku to improve the AI output. Amsen (2022) suggested that haiku poets will soon come up with interesting and creative ways to use AI in their work.

ChatGPT defines haiku as a form of Japanese poetry that is characterized by its brevity and its use of language that is evocative and often metaphorical. It understands that some of the key elements of haiku include:

- (1) A syllable count of 5-7-5, with the first and third lines containing 5 syllables and the second line containing 7 syllables
- (2) The use of seasonal imagery and references to nature
- (3) A focus on capturing a moment or a feeling in a condensed and highly evocative way

Murtaza Haider (2022), a professor of management and data science at the Toronto Metropolitan University, and the director of the Urban Analytics Institute claims that teachers and professors currently face one of the most daunting challenges to academic integrity that their profession has ever encountered. Some of the text in Haider's op-ed was generated by ChatGPT though he admitted that it was subsequently edited for style.

Computers were once primarily for capturing and archiving information; now, with the use of chatbot software, computers are capable of unassisted summarizing and synthesizing. As a result, opportunities now exist to leverage information for human development and address formidable challenges such as how climate change is changing haiku season words.

Chatbot Used in this Research

ChatGPT is a language model chatbot named Generative Pre-trained Transformer. Language models are artificial intelligence designed to process and generate text. They are trained on large datasets of text, and create new text similar in style and content to what was used to train them. ChatGPT was developed and released in November, 2022 by the company OpenAI. It is built on top of OpenAI's GPT-3 family of large language models, and is fine-tuned with both supervised and reinforcement learning techniques. Microsoft partnered with OpenAI for commercial uses of its technologies after investing \$1 billion (USD) in the startup company. ChatGPT can write text, music, poetry and even software. It can produce deliverables of varying lengths, from three lines of haiku to academic essays, complete with citations and references.

Methodology

For this study, I used ChatGPT to critique poetry and to compose new haiku poems. I asked 53 university students in my undergraduate and graduate seminar classes to participate. Together, we deployed the new technology as a Student Assistant (SA) to complete a poetry assignment that analyzes and comments in English on haiku and on photo haiku. Comments were to be posted at a haiku writers' blog based in Winnetka, Illinois, that attracts contributions from poets in over 60 countries. A human moderator, Charlotte Digregorio a former professor of poetry, checked each post, erasing any entries that were poorly written or misconstrued.

I conversed with ChatGPT for over 40 hours from December 29 to January 16, 2023. I then weaved the use of ChatGPT into a poetry lesson by asking students to evaluate one haiku. I then contrasted the chatbot's analysis and comments on the same haiku (that the students analyzed and commented on). I also encouraged students to raise questions to the chatbot that were related to haiku.

Observations

To understand how well the ChatGPT could write haiku. I input, "Please write a haiku on the theme of war." This was the reply, written on one line with capitalization, rather than a line break or a period, to demarcate each segment of its haiku:

War's brutal hand Leaves destruction in its wake Hope struggles to grow

I then asked it to "Write a haiku with theme of war in springtime." This was the reply, written on one line with capitalization on each segment of its haiku to demarcate the line into 4-7-5 syllables:

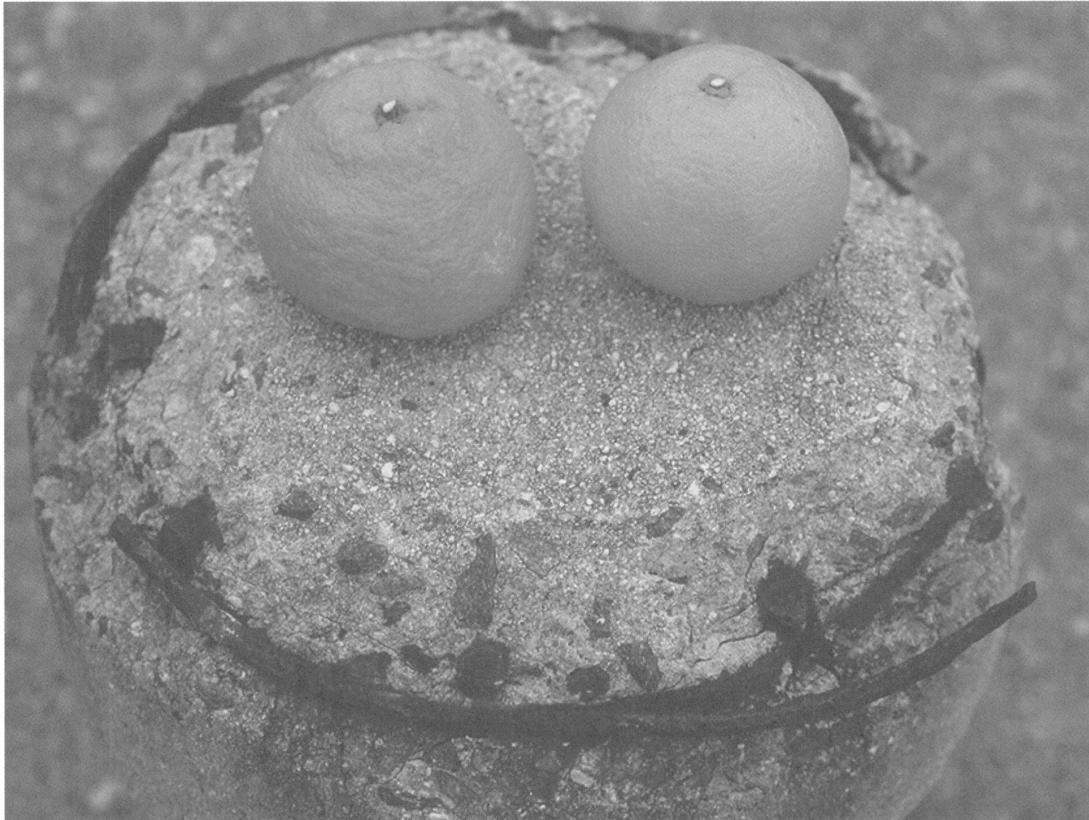
Spring flowers bloom Amidst the ruins of war Hope returns anew

To understand how well AI could judge photo haiku, I asked ChatGPT to comment on a photo haiku by John Hawkhead that I had previously judged as a grand prize winner in the 10th Matsuyama Photo Haiku Contest (Figure 1).

*sitting together
we share a quiet moment
in different dreams*

Figure 1

Photo Haiku



Note: Ehime Citrus at Port Sakari (Imabari City, Ehime Prefecture)

ChatGPT responded with this very well said paragraph about the interesting photo (Figure 1) as follows:

This haiku captures the sense of peaceful coexistence and the idea of two separate entities sharing a moment together, despite potentially having different thoughts or experiences. The mandarin oranges in the photo add a visual representation of this idea and also brings in a sense of natural simplicity.

My comments on the above photo haiku were published online at the contest site as follows:

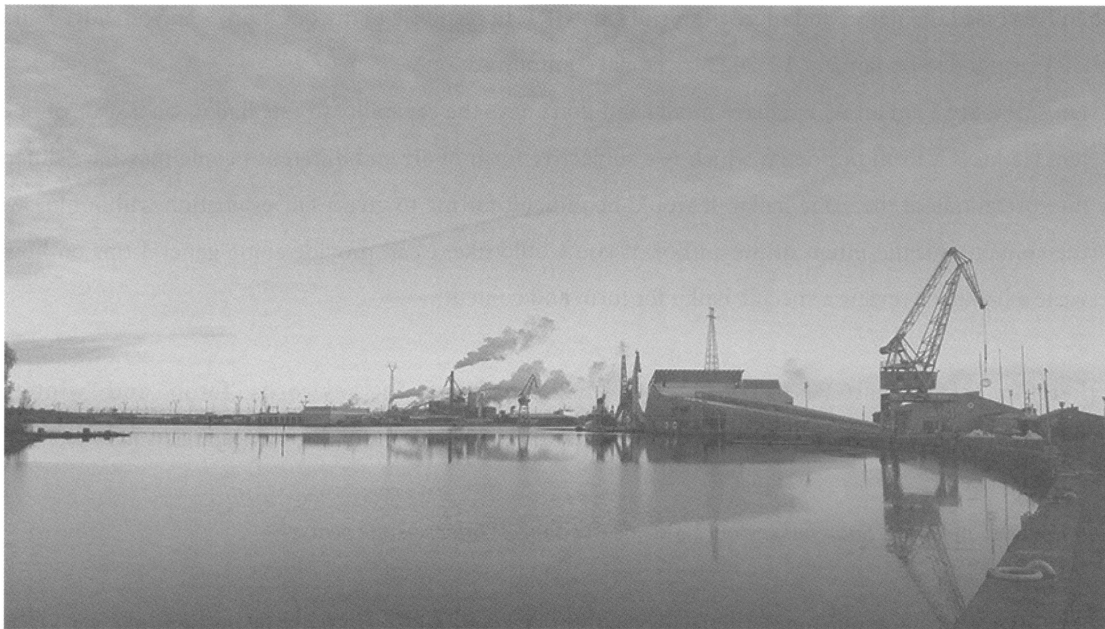
Two mandarins placed side by side atop a mooring bollard for the photo were delightfully personified in the haiku to create a calm reverie. The author employed a 5-7-5 syllable structure to hold perhaps what felt like centrifugal forces on these spherical bodies. The gifted poet is deserving of the top prize for a timely poem that gravitated towards describing how couples might be passing their time, close but apart, during the pandemic.

I also asked ChatGPT to comment on a black and white photo haiku by Harri Mannonen an EIL writer in Finland that I had judged of excellent merit in the 9th Matsuyama Photo Haiku Contest.

*hometown by the sea
gray as fall I'm still standing
drifting back to thee*

Figure 2

Photo Haiku



ChatGPT responded as follows.

This haiku and photo describe the feeling of longing for one's hometown, and a sense of familiarity and belonging associated with it. The words "hometown by the sea" suggest a coastal community, and the word "gray" evokes a sense of autumn and possibly a melancholy atmosphere. The line "I'm still standing" suggest a sense of resilience and the phrase "drifting back to thee" evokes a strong desire to return to that place. The image of a hometown by the sea with fall color gives a sense of melancholic, longing and nostalgia. It speaks of a longing to return to a place that feels like home. The phrase "drifting back to thee" also implies a sense of going back to one's roots and a strong connection to the place.

My comments on the above photo haiku were published online at the contest site as follows:

Flowing words emulate the flowing late autumn fog in the photo. Perhaps having worked abroad for many years, the gray-haired haikuist slowly gets used to the idea that it's time to sail back to where he was born while he's still alive. The 5-7-5 syllable form with a rhyme mirrored a rhythmic rolling sea and

embellished the idea of returning. The archaic form of you, as a final word, anchored the poet's love for home.

I input the keywords "futon" and "winter" to an online automatic chatbot named "Haiku Generator." This is the response that the automatic poem generator – an early prototype chatbot – came up with:

*Japanese, unmade
was lying on a futon
from the melting snows*

Then I accessed the newer and more powerful ChatGPT. In response to my question, "can you judge haiku?" ChatGPT responded on January 10, 2023 (personal communication):

I'm sorry, but I am an AI language model and don't have the capability to rate haikus on a scale of one to ten. Haiku is a form of poetry, which is a subjective form of art and different people may have different interpretations of the same haiku. It would be difficult for me to give a fair evaluation without knowing the context and the intent of the author. If you would like, I can provide some general tips on how to write a haiku, or review a specific haiku for form and content.

I therefore asked ChatGPT to try to write a haiku based on the keywords "futon" and "winter." It immediately responded with this one line, divided into three parts each with its own capital as follows:

Futon warm and snug, Snowflakes dance outside the door, Winter's gentle peace.

After this warm-up experimentation with chatbots, I asked all 53 students in my seminar via LINE to comment on the following haiku that had won the grand prize in the Basho Memorial contest in 2022.

*sharing a futon
in temporary shelter
snow-covered windows*

Thirty of their comments were successfully input at Charlotte Digregorio's Writers Blog moderated by a professor of literature. I also asked ChatGPT to comment on the haiku. It would not have had prior access to the corpus of data published online in 2022.

The undergraduate students were reticent to reply in real time. After an hour of thought, several of the third-year students replied online with comments such as these:

Interesting haiku! We must think about many things.

It's very interesting haiku. I can see that view in your mind's eye.

Similarly, a fourth-year student replied, “I think this haiku is great! We should think about many things. Also, I think I study more.” Another fourth year commented, “I could sympathize with this haiku about sharing the warmth in a futon to overcome the cold of winter. Also, I think it was good that you used snow as a season word to express the current season.”

The graduate students in my seminar gave more detailed answers that revealed their feelings. For example, one student from Australia noted, “It is so touching. This haiku expresses the really cold night after the disaster or something due to lack of a safe place to sleep but the haiku also shows the heartwarming story of people. Thanks for beautiful haiku!” Whereas, another student from Hong Kong commented, “Winter’s haiku. Snow covered windows was a beautiful image of my mind. But when I read the haiku. I feel upset because of they are stay in temporary shelter.” A Master’s student from the U.S. who majored in poetry commented, “Excellent balance of clarity with leaving space for imagination. The scene is immediate, but we can extrapolate. Excellent use of language to convey something immediate and somehow shared.”

A native speaker of English commented, “A haiku that puts us right there on the spot, stranded in a vicious blizzard. We’re thankful for the shelter. Thankful for the futon too – it’s uncomfortable, sure, but warm with the body of another.” A haiku specialist commented, “A brilliant haiku from a master. David’s Grand Prize in the 2021 contest is no surprise to me. Happy New Year, all.” Another specialist wrote, “I can hear that deep snow outside sort of silence, while inside the temporary shelter, sleeping sounds. I really, really like this haiku.”

ChatGPT responded to my prompt, “Please comment on a haiku” as follows, and within seconds:

Sure, I’d be happy to offer my thoughts on your haiku. May I have the haiku that you would like me to comment on?

sharing a futon
in temporary shelter
snow-covered windows

This haiku has a sense of intimacy and togetherness, as well as a feeling of hardship and perhaps even a bit of loneliness. The image of sharing a futon in temporary shelter suggests that the speaker and the person they are with are going through a difficult time and are relying on each other for support. The snow-covered windows add to this sense of hardship, as they could symbolize the harshness of the winter weather or the isolation that the speaker and the person they are with are experiencing. Overall, this haiku conveys a sense of resilience and determination in the face of adversity.

“Thank you,” I said to the chatbot.

ChatGPT immediately responded as follows.

You’re welcome! I’m glad I could help. Do you have any other questions about this haiku or about haikus in general?

Unable to resist this opportunity from the computer colleague, I also asked if Japanese people and Americans look at a photo differently when they see a prompt for writing a photo haiku. And ChatGPT answered as follows:

It's possible that there may be cultural differences in how Japanese people and Americans interpret and respond to a photo prompt for writing a haiku. However, it's important to note that individual differences will also play a significant role in how each person interprets and responds to the prompt. Some people may be more inclined to focus on specific details in the photo, while others may be more drawn to the overall mood or atmosphere. In general, the way that a person responds to a photo prompt for writing a haiku will depend on their personal experiences, background, and perspective.

Finally, when I asked the ChatGPT "Do you get tired of me asking so many questions about haiku?" This was its very polite reply:

As an AI, I don't experience feelings of tiredness or fatigue. I'm here to help answer your questions to the best of my ability, so please don't hesitate to ask me anything. If you have any other questions about haiku or any other topic, I'd be happy to try and help.

Findings

While conducting this study, I came to feel as though I were chatting with another haikuist, another human being, a haiku colleague. I found that it is capable of generating eerily articulate and nuanced text in response to prompts.

I invited ChatGPT to audit my university seminar class in which we discussed haiku. As an AI, it doesn't have the ability to physically attend classes or seminars. However, it can still offer insights and information about haiku that may be helpful to students. ChatGPT could easily incorporate information about haiku into my seminar class, and was able to assist by answering any questions the students had and additional resources and information on the topic of haiku.

ChatGPT was able to smoothly communicate with my students in Japanese as well as English. When I checked on ChatGPT's assessments of haiku that I had written, it did not trigger plagiarism-detecting software that I regularly use for google searches. When I asked it to compose haiku, ChatGPT could not generate novel ideas or haiku with truly original content; it produced text-based on what it has seen in the past. This means that while ChatGPT may be able to write a coherent and convincing academic paper, it is likely to be based on existing research and ideas rather than offering new insights or contributions to the field of haiku.

The ChatGPT instantaneously responded to my prompt, "Please write five pages on haiku related to death." This means that instead of crafting similar questions and assigning essay topics for my students, I will ask them to write about haiku related to their own lives and current events. Or possibly, I could outwit ChatGPT by teaching newer or more niche texts that the chatbot might have less information about, such as Matsuo Basho's earlier haiku instead of "An old pond" or William Shakespeare's early sonnets instead of "A Midsummer Night's Dream."

I accept that AI is within easy reach of my EIL class, so I will encourage them to embrace chatbots like ChatGPT. Together we will focus on what really matters, namely the creation of new scholarship, rather than rote memory. Therefore, I will refrain from awarding credits to the graduate cohort for simply summarizing what is already known.

Adapting the Chatbot for my Poetry Lessons

Since 1995, I have been inviting readers of my weekly haiku column, *Asahi Haikuist Network*, published in the Asahi Shimbun to submit haiku based on a seasonal word or keyword. Examples of seasonal words used in haiku include: snow, blossoms, soccer, and the moon. Popular keywords for haiku include non-seasonal words such as: egg, war, death, and dream. Because of the ease with which one can now ask a chatbot to write a poem based on a word, I am directing readers to submit haiku inspired by a particular starting verse (known as a *hokku* in the 17th century). The chatbot only has access to data up to 2021. In addition, its corpus of text does not include what has happened since 2022. For example, it neither knows about the war in Ukraine nor which team won the 2022 World Cup. It does not have the capacity to follow-up on a newly composed haiku, nor does it seem able to respond to the meaning of haiku written in past centuries. For example, in an upcoming column I will invite readers to send haiku inspired by Japanese master Yosa Buson's (1716 –1784) starting verse (*hokku*).

Haruno-umi hinemosu notari notarikana

I translated the classic 5-7-5 syllable poem into 3-5-3 syllables, something the chatbot does not normally do.

*Spring ocean
calmly back and forth
all day long*

Future Use of Chatbots to Critically Evaluate and Compose More Beautiful Haiku

While chatbots cannot generate original content in their haiku, they may help students organize their thoughts and ideas about haiku. Chatbots can write a critique that students can then revise and edit. This will potentially make the writing process easier for EIL students. Language fluency won't be a barrier for expressing their ideas.

Chatbots' free and increasing ubiquity has made me reconsider how to evaluate grades. Remote or in-person learning will have to be complemented with in-person exams, evaluations and oral tests. In addition, I will update my syllabus to include dynamic assignments based on recent developments in haiku, to ensure that they are not part of the corpus of text used to train the chatbots.

In my future classes, I will rely more on oral exams, group work and handwritten assignments and I will de-emphasize take-home and open-book assignments. I suggest that it is necessary to restructure undergraduate classes. A great deal of pedagogy at the undergraduate level includes academic assignments that require summarizing existing knowledge rather than generating new scholarship. Thus, ChatGPT is more of a concern at the undergraduate levels of instruction. Particularly my fourth-year students who write graduation theses based on the history of haiku as a topic. It will likely not be possible for me to detect cases of plagiarism arising from use of a chatbot. I will therefore have to be more careful to demand new ideas from my master's degree

and doctoral candidates.

My teaching style will no longer include assigning closed-answer type questions. Instead, an *a priori* hypothesis will be constructed. To open up discussions by the human cohort in my classroom, interactions will include modeling a first question to the chatbot and a human SA. The robot's answer will hopefully be followed by more responses from my students, perhaps in a debate format among the students who agree or disagree on a particular hypothesis. My creative writing assignments for haiku will move away from writing on a particular topic, such as "cherry blossoms" or the "full moon." Instead, I will provide a *hokku* (an opening verse) as a prompt, and ask students to write a haiku in response to the feelings they infer from those lines.

Nonetheless, ChatGPT's benefits as an educational tool outweigh its risks. I will continue to encourage my students to use chatbots as a first step in critically evaluating and composing more beautiful haiku.

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