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Benefits and Challenges of Using ChatGPT in Written Content Crea- tion – Practical Guidelines

DEGREE PROGRAMME IN INTERNATIONAL BUSINESS

2023

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	Number of pages 32+1	Language of publication English
Title of publication Benefits and Challenges of Using ChatGPT in Written Content Creation – Practical Guidelines		
Degree Programme International Business		
<p>The purpose of the thesis was twofold. First, it was intended to educate what ChatGPT is, explain its basic functions, and examine, are the benefits of using ChatGPT in written content creation greater than its challenges. The second purpose was to demonstrate how ChatGPT can be used by both companies and individuals to create written content.</p> <p>Theory section of the thesis focused on understanding artificial intelligence and ChatGPT, including thoroughly examining the relevant concepts around ChatGPT that aligned with chosen subject matter and subject limitations. Theory section was concluded with exploration into positive, negative, and ethical aspects of ChatGPT's use.</p> <p>In research section, methodology was first clarified and explained why qualitative research method, document analysis was chosen. The objective was to examine is ChatGPT able to generate convincing, high-quality, and truthful text as well as offer helpful suggestions regarding the subject matter.</p> <p>Results showed that the benefits of using ChatGPT to create written content surpassed its negative impacts. In order for this conclusion to hold, it requires that users are aware of its limitations, challenges and practice good ethical conduct while utilizing ChatGPT.</p> <p>Based on the research results, a conclusion was made that ChatGPT was able to create a well-structured and factually correct texts about specific topics, display critical thinking and offer useful instructions. However, human inspection is necessary when ChatGPT is used, not only in ethical sense, but also regarding transparency, accountability, and trust.</p>		
Keywords: ChatGPT, artificial intelligence, written content creation, prompt engineering, natural language processing, ethics		

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1 INTRODUCTION

ChatGPT was introduced to the world on November 30, 2022, and it is gradually becoming a legitimate part of companies marketing efforts. ChatGPT being a relatively new subject and already actively used in various capacities, such as in written content creation, highlights the importance of understanding what ChatGPT is, how it functions and what it can be used for.

Research conducted in the thesis is important due to ChatGPT's potential to revolutionize not only the way certain aspects of written content can be created in professional life, but ChatGPT affects life outside of work as well. Artificial intelligence is also steadily becoming a greater part of people's lives and understanding the basic concepts of ChatGPT and AI, including how they are connected is essential.

The objectives of the thesis are to raise awareness and educate what ChatGPT is, its basic functions, and are the benefits of using it in written content creation greater than the challenges. Second objective is to demonstrate how ChatGPT can be used by both companies and individuals to create aforementioned written content.

Theory section of the thesis focuses first to clarify what artificial intelligence is and then focus is shifted to the relevant concepts around ChatGPT that align with chosen subject matter and subject limitations. ChatGPT's role in written content creation concludes theory section, where I examine both positive, negative, and ethical aspects of ChatGPT's use and how they influence its utilization. In research section I first clarify the research methodology and justify why the chosen research method was used, which is followed by empirical research and subsequent reviewing of the results.

2 PROBLEM DEFINITION AND CONCEPTUAL FRAMEWORK

2.1 Research purposes & conceptual framework

Through the subject matter, two research questions were formed:

- Why ChatGPT should be used by companies and individuals to create written content?
- How to use ChatGPT?

After establishing the two research questions, specific purposes can be constructed. Purposes are twofold, first, it is to educate and explain thoroughly what ChatGPT is and its basic concepts. Secondly, through document analysis and concise guidelines, I will illustrate how ChatGPT can be used by both companies and individuals to generate written content. The purposes can be said to have been achieved, when including those with no prior experience with ChatGPT are able to use it by following the information and instructions given in this thesis.

Conceptual framework in figure 1 illustrates the connection between AI, ChatGPT, written content, relevant concepts around them and how they together established the guidelines for ChatGPT. It differentiates what is related to ChatGPT and to written content creation and is there any overlap between the two topics. Although ChatGPT is the main subject of my thesis, artificial intelligence is on top of the diagram, since without it ChatGPT would not be able to exist. The midsection, "ChatGPT - written content creation – guidelines for ChatGPT", illustrates how everything related to ChatGPT and written content creation affects the outcome of the guidelines. As a result, I excluded any arrows leaving from "guidelines for ChatGPT".

An argument can be made that some of the arrows that point from ChatGPT could also point to artificial intelligence, such as natural language processing, benefits & challenges along with ethical issues. Similarly, all three arrows that point from written content creation could be connected to ChatGPT as well. However, in order to maintain concise and easily readable conceptual framework, I omitted them from the diagram.

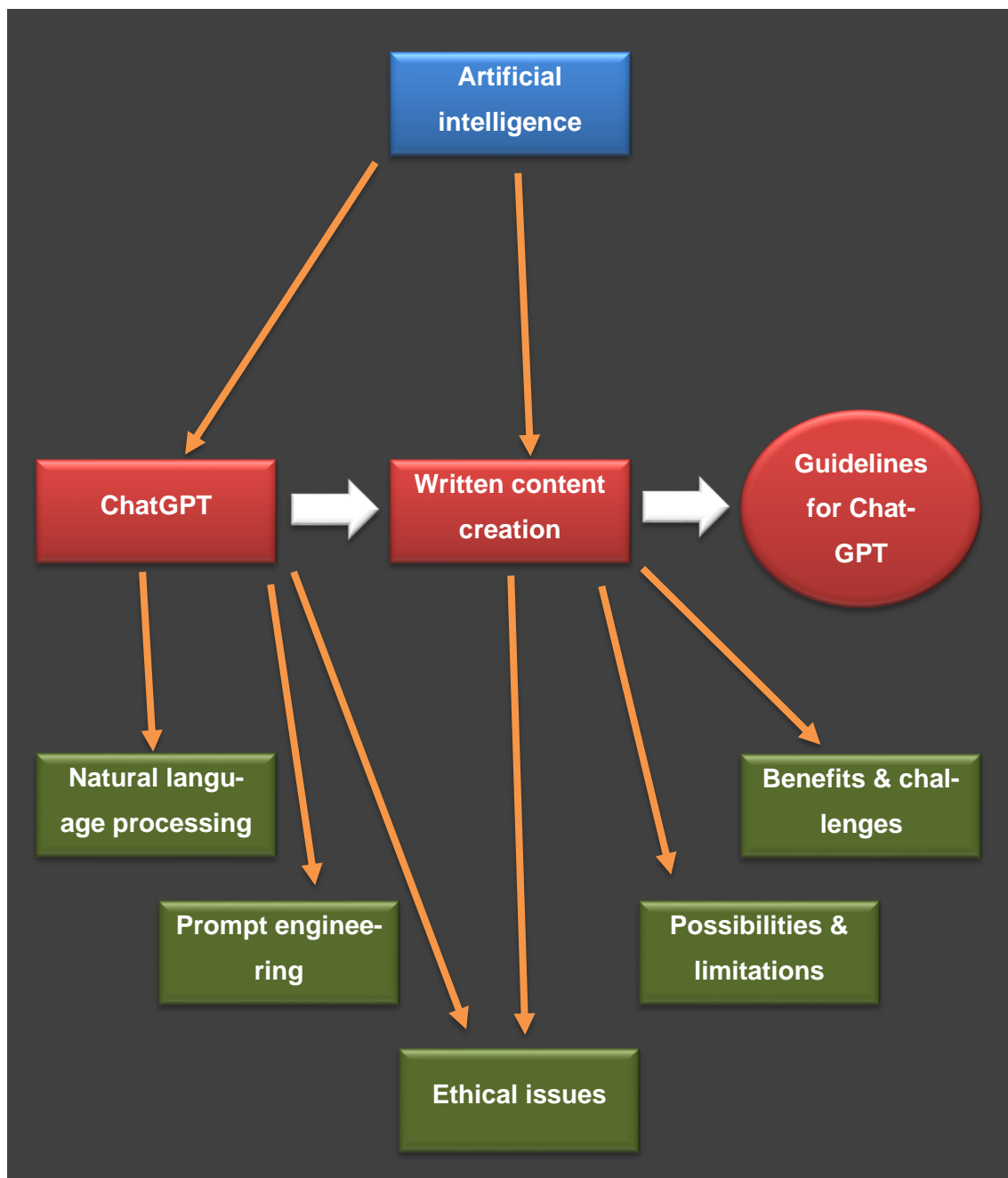


Figure 1. Conceptual framework: Connection between AI, ChatGPT and written content including relevant concepts.

2.2 Subject limitations

The consequence of ChatGPT being a relatively new topic (first release was on November 30, 2022) is that information, specifically from trusted, peer-reviewed sources can be scarce. However, I was aware of this while choosing the subject for the thesis but evaluated that available public information about

ChatGPT and relevant topics around it, is enough to produce a reliable thesis with credible information. Due to this reality, the information portrayed in my thesis is accurate related to present-day, but may change over time, once the understanding of ChatGPT and entirety of its possibilities and challenges are better known.

Regarding topic limitation it must be mentioned that written content is a sub-category of content creation, which entails text, images, videos, and sound. Therefore, thesis will only focus on written content creation, which is the main ability ChatGPT is used for. Along with ChatGPT being a new topic, it is also broad, which is why the focus is centered around subjects that are relevant to written content creation and contribute to understanding the use of ChatGPT in generating text-based content.

Technical aspects behind natural language processing and prompt engineering were completely left out along with the methods how chatbot models were trained by OpenAI. Additionally, those benefits and challenges that are not directly related to written content creation but still play a big role in the use of ChatGPT were omitted, such as concerns regarding privacy and security, energy consumption and other environmental impacts as well as advantages and disadvantages within education and healthcare. ChatGPT-3.5's predecessors as well as GPT-4 Turbo, which is a more advanced version of GPT-4 are also left out, although they are relevant in the field of ChatGPT, they would not have contributed valuable information to the thesis.

3 ARTIFICIAL INTELLIGENCE

The following chapter delves into what AI is and the basic concepts in it that are also connected to ChatGPT. At first, focus is on a definition of AI, which is followed by an exploration of different AI types and specific methods how categorize them. Then, focus is shifted to natural language processing, what it is and how significant part it plays within artificial intelligence. Lastly, prompt

engineering and how its functions are examined as well as its pivotal role in determining the outcome of generated content by ChatGPT.

3.1 Definition of AI

First, it must be said that there is not a universally agreed definition of artificial intelligence. However, McCarthy (2007, p. 2) explained AI as follows:

“It is the science and engineering of making intelligent machines, especially intelligent computer programs. It is related to the similar task of using computers to understand human intelligence, but AI does not have to confine itself to methods that are biologically observable.”

Essentially, artificial intelligence simulates human intelligence processes, but it is performed by computer systems. According to Allen and West (2023) such systems have three qualities that create the artificial intelligence: intelligence, intentionality, and adaptability.

Intelligent decision-making is provided through the mixture of AI, machine learning, and data analytics. Programmers must create algorithms that are intelligent enough to collect choices based on different factors, such as equity, efficiency, and justice. It is critical that the written code is created by using impartial and non-discriminatory data. Failure causes AI algorithms to be unfair and unjust. (West, 2018.)

Artificial intelligence algorithms are intended to make decisions. The purpose of these algorithms is not to be passive machines that can only react mechanically or in a predetermined way. First, they gather data from different sources, then analyze it and act based on the insight they gained by using sensors, remote inputs, or digital data. Therefore, these algorithms were created with intentionality to have the ability to reach conclusions based on their analysis. (Allen & West 2018.)

Artificial intelligence has capability to learn as a system makes decisions. West and Allen (2018) report that for example, semi-autonomous vehicles possess mechanics that will inform drivers about potholes or traffic jams. In order for artificial intelligence to be effective, it must be able to adapt to new situations and circumstances, such as when road conditions, environmental conditions or financial situations change. (West, 2018.)

3.2 Artificial intelligence categories

There are two different ways to categorize artificial intelligence. It can be based on capability, which Sahota (2022) presents as narrow AI, general AI, and super AI, which can be seen in figure 2. Aforementioned category refers to AI machine's similarity to the human mind and capacity to learn and process information (Joshi, 2019). Sahota (2022) notes that as of now, only narrow AI is being utilized since general AI and super AI are purely theoretical. When artificial intelligence is based on a functionality, it indicates that they have one specific skill or ability to carry out a particular task (Techliance, n.d.). Sahota (2022) states that the four functionality types are reactive machines, limited memory, theory of mind and self-awareness. These can be seen in figure 3.

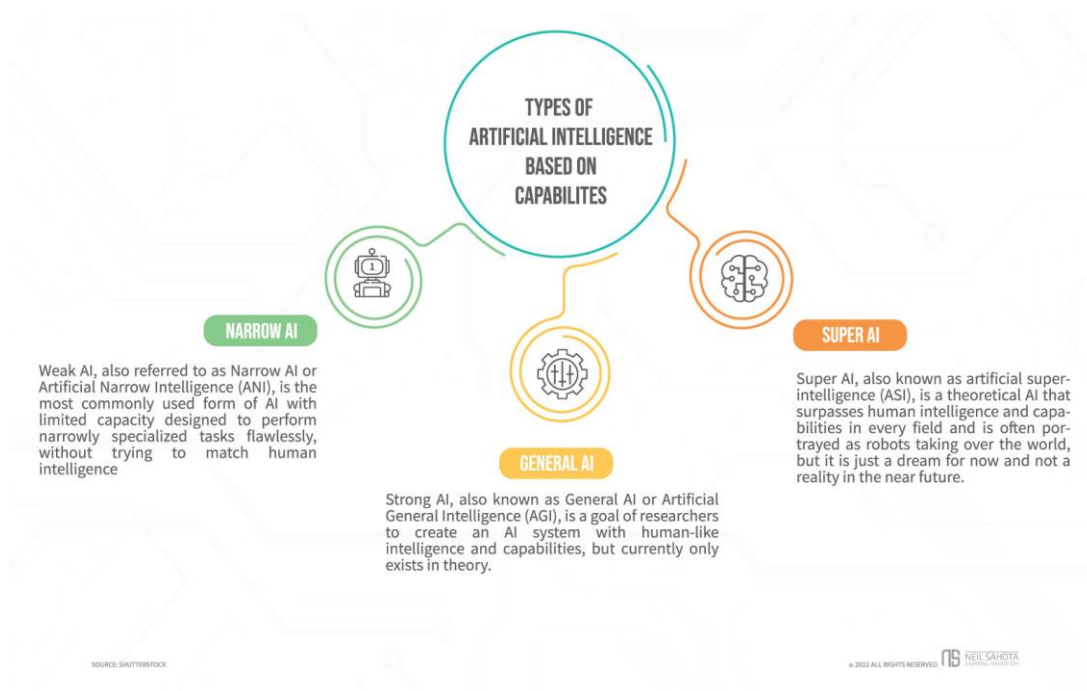


Figure 2. Artificial intelligence based on capability (Sahota, 2022).

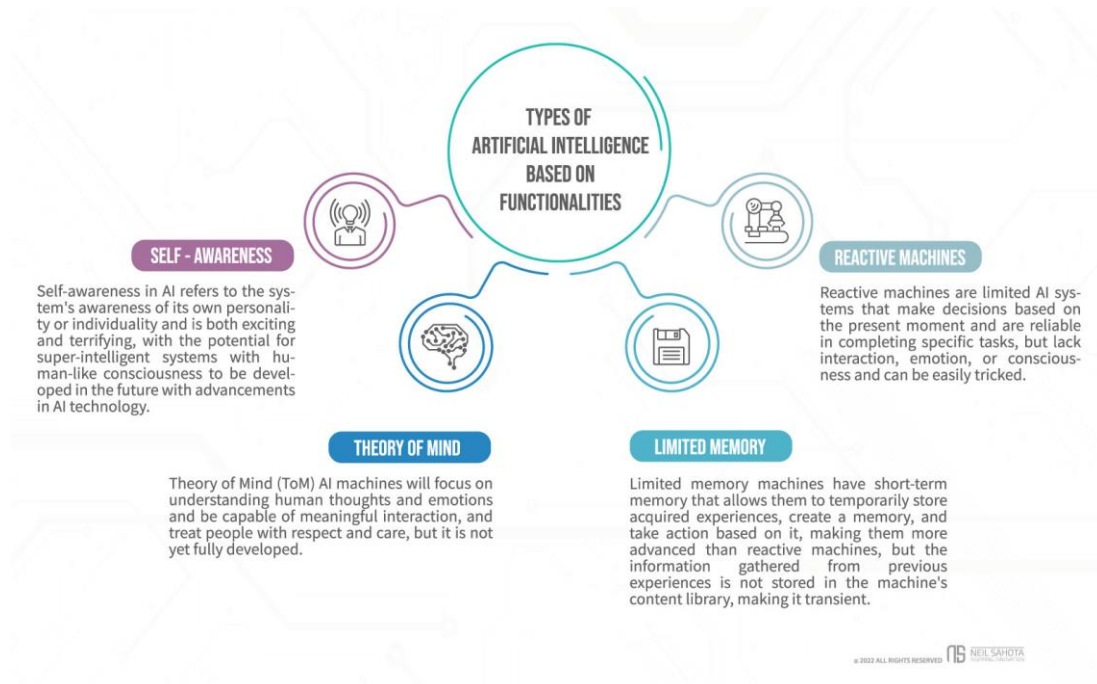


Figure 3. Artificial intelligence based on functionality (Sahota, 2022).

3.2.1 Reactive machines

Reactive machines are the most frequently used AI systems, they function on an immediate response basis, meaning they are not able to store memories or past experiences to make improved decisions in the future. Reactive machines can be relied on to complete tasks, since their response is always the same, no matter how many times it is asked to perform it. However, it must be remembered to not expect emotion, interaction, or consciousness from reactive machines. (Sahota, 2022.)

3.2.2 Limited memory machines

Limited memory AI powers applications, such as chatbots, virtual assistants and self-driving cars. Although it can store information and predictions from past experiences, it is only temporary. Limited memory AI is being used by self-driving cars, since autonomous vehicles use algorithms that are able to interpret data it observes to scan the surrounding environment and adjust as

needed. Limited memory AI also made public roads safer through improved reaction time regarding autonomous vehicles. (Marr, n.d.)

3.2.3 Theory of mind

Azarian (2018) clarifies that theory of mind indicates an ability to understand that mental states, such as desires, goals and beliefs varies from person to person. Theory of mind becomes a reality if machines not only gain the means to make decisions but would also be capable to understand emotions and alter its behavior based on what emotions it is feeling, just as humans can (Marr, n.d.).

A large portion of artificial intelligence focuses on cold cognition, which signifies processing of information without any emotional input. Hot cognition on the other hand indicates that thought processes are affected by person's mental state. However, as a result of highly focused attention to cold cognition and in addition to AI's abilities to process information, it has become better than humans at playing chess and other strategic games. (Cîrstea etc., 2020, p, 2.)

3.2.4 Self-awareness

Final step of AI development is self-aware AI, which falls into Super AI category and is also strictly theoretical in present day, just as theory of mind. Successful self-aware AI development would mean that machines are capable of being intelligent and conscious on the same level with humans. Including possess and able to feel the same needs and emotions. (Sahota, n.d.)

Self-aware AI is essentially an advanced version from theory of mind. Sahota (2022) emphasizes that producing a machine that has consciousness is a challenge, humans are not able to resolve at the present-time and consciousness along with thinking are such abstract concepts it would make testing even more challenging.

3.3 Natural language processing

Natural language processing (NLP) is a section of artificial intelligence that is centered around teaching computers how to interpret language similarly to humans (Gruetzemacher, 2022). In present day it can be found on numerous everyday products and services such as Alexa, Siri, Google Translate and customer service chatbots (Khatter etc., 2022, p, 3724-3727).

It is important to realize that when NLP systems are creating words and sentences, it is unable to understand what it is putting together. These systems are programmed to generate answers that mimic human responses. Deep learning models and techniques are used by NLP systems to support their learning process. (Ramanathan, 2023.)

NLP is not without its challenges and ethical considerations, such as being biased and privacy concerns. Ramanathan (2023) points out that when NLP models were asked to describe a doctor, it is possible for them to demonstrate instinctive gender bias by responding "he is a doctor" rather than "she is a doctor".

Hallucinations are an additional challenge for a probability-based NLP models, which refers to a model applying probability to form responses to users' questions, like ChatGPT. Hallucinations in the context of artificial intelligence refers to mistakes and inaccuracies in the text AI has created. They can be plausible either semantically or syntactically but are factually incorrect or illogical. Therefore, blindly trusting what the machine is writing, is not wise. (Smith, 2023.)

However, while there are legitimate concerns and issues within natural language processing, the benefits should not be forgotten. Even with NLP technologies' flaws, it has potential to change human-computer interaction fundamentally and since AI-driven NLP has improved considerably, it is a real possibility (Anjum, etc., 2023, p. 2).

3.4 Prompt engineering

In essence, prompt engineering is a way for humans to talk to AI. Ekin (2023, p, 3) states that it is defined as a process of designing and optimizing input prompts in order to give users' the possibility to explain their intent to language models like ChatGPT. Example of this can be seen in figure 4.

Prompt:

“Tell me about the solar system.”

Response:

“The solar system is a collection of celestial bodies, including the Sun, eight planets, their moons, and various other objects like asteroids and comets. It is located in the Milky Way galaxy.”

Figure 4. Techniques for Effective Prompt Engineering (Ekin, 2023, 4).

Without understanding how prompt engineering works and how to execute it effectively, users will not be able to get the most out of language models like ChatGPT. Poorly designed prompt which lacks essential information can result in inaccurate responses, while a well-thought-out prompt that includes all necessary information will lead to a significantly more precise reply. (Ekin, 2023, p, 3.) However, large language models possess limitations, and it should be remembered. Biswas (2023, p, 2) emphasizes that language models might produce incorrect information and be biased despite how well built a prompt is.

Assigning ChatGPT to a specific job role, such as a marketing expert or professor of finance can potentially improve the response from ChatGPT. In order to get the best possible outcome, prompts need to be structured well. Specific prompts with enough context or relevant details around the subject, helps ChatGPT guide its response, which can lead to improved results. (Mok, 2023.)

Although prompt engineering is associated with text-based AI systems, currently ChatGPT-3.5 and GPT-4 models can also analyze and answer to images that are a part of a text conversation (Times of India, 2023). Two reliable and well-known AI text-to-image systems in the present-day are DALL-E 2 or Midjourney (Toews, 2022). Isaacs-Thomas (2023) confirms that there are several models that can, for example, generate a picture of T. rex tap-dancing on Jupiter on command.

4 CHATBOTS

This chapter focuses on artificial intelligence chatbots, which have been limited to ChatGPT-3.5 and ChatGPT-4. After a brief background into the meaning of ChatGPT and GPT, chapter explores where ChatGPT-3.5 can be used and mentions how ChatGPT-3.5 performed in different exams, such as the US bar exam. Then, focus is shifted to ChatGPT-4 and different elements it contains, such as, what new features are included in it, what possibilities it provides that its predecessor is not able to accomplish and how it compares to ChatGPT-3.5.

4.1 ChatGPT-3.5

The foundation of ChatGPT is either GPT-3.5 or GPT-4, essentially ChatGPT is an advanced version of GPT-3.5 (Heaven, 2023). "GPT" stands for Generative Pre-trained Transformers and should not be confused with ChatGPT, since GPT is the language model ChatGPT, the chatbot is trained on. GPT-3.5 was released in November 2022 and has been available to public since. (Alston, 2023.)

Through a major study, ChatGPT was found to have a verbal-linguistic IG of 147 and showed similar results on the Raven's ability test. It should be mentioned that the language model GPT-3.5 gained good results also on The

Uniform Certified Public Accountant Examination, US bar exam, and US medical licensing exam. (Ray, 2023, p, 134.)

OpenAI (2022), explain, that ChatGPT is programmed to carry out instructions given in a prompt by a user and provide the most accurate answer possible. Therefore, according to Hughes (2023), with ChatGPT-3.5 you can:

- Conduct subject research and summarize content.
- Compose essays and articles.
- Create a resume.
- Write computer code.
- Write excel formulas.

ChatGPT has understandably proven to be a valuable tool in many regards, most notably advancing scientific research. However, it must be acknowledged that there are legitimate challenges, limitations, and ethical issues within ChatGPT that can have negative consequences. (Ray, 2023, p, 140.)

4.2 ChatGPT-4

OpenAI's GPT-4 language model was released on March 13, 2023. Currently, a paid subscription is required to gain access to ChatGPT-4. Weitzman (2023) mentions that GPT-4 appears to be more reliable and functional compared its predecessors GPT-3 or GPT-3.5.

GPT-4 is made much safer and aligned compared to GPT-3.5. The new model is 82% less likely to answer content, that is identified as banned. While in ChatGPT-3.5 one of the bigger issues is incorrect responses, GPT-4 is programmed to generate accurate responses with 40% increase. (OpenAI, n.d.) David (2023), remarks OpenAI's statement by mentioning that according to a Microsoft-sponsored research, GPT-4 might be more reliable, but it is not safe from jailbreaking and bias. Although, GPT-4 received a better trustworthiness score compared to GPT-3.5, which indicates the new model is improved at keeping private data safe and detecting bias information (David, 2023).

It can be said that fundamentally GPT-4 is like GPT-3.5 but there are other differences besides GPT-4 being simply more powerful. GPT-4 is a Multi-Modal model, which means that while GPT-3.5 can only process text prompts, GPT-4 accepts image prompts as well. The number of words that can be entered in an input in GPT-4 has increased to 25,000, while GPT-3.5's maximum capacity is at 3,000. Additionally, it has been demonstrated that GPT-4 can generate webpages, finish tax returns, and create cooking recipes from images of ingredients from a fridge. (Hughes, 2023.) Weitzman (2023) adds that new image feature can be used by businesses to perform several tasks, such as optimize content, mark inappropriate content, or create captions for social media content.

5 CHATGPT'S ROLE IN WRITTEN CONTENT

Last chapter of the theory section centers around the positive and negative aspects of ChatGPT in written content creation. I explore what these elements are and how they affect the usage of ChatGPT. Chapter is concluded with an examination into ethical issues regarding ChatGPT, such as bias and a brief explanation how exploitation and misuse of it could be prevented.

5.1 Possibilities & limitations

ChatGPT has and will continue to change the way content is created, especially written content. Mollick (2022) vocalizes that ChatGPT can create convincing and high-quality texts in English, German, Mandarin, or any of the 50+ languages it supports. This leads to numerous possibilities from creating articles, essays, and personalized emails to writing reports and performing extensive research.

As a result of ChatGPT's success, companies are able to save time and resources by using its ability to create written content efficiently and on any desired topic. AI is being applied particularly in marketing, consulting, and

finance, where the common theme is the importance of communicating with clients. Ultimately, companies gain multiple advantages from using ChatGPT to create written content, but only if they understand the challenges and limitations of using artificial intelligence to create content. (Mollick, 2022.)

The limitations of ChatGPT and reasons behind it are well documented. Lack of understanding the text it is creating being one of them. ChatGPT is trained to anticipate the next word based on previous words, but since it is not able to comprehend context or words themselves, it can result in a situation where a text is factually wrong and relevant information regarding the context is missing. (Chowdhury & Rahman, 2023, p, 7.) This particular limitation transfers responsibility to fact-check any written content from ChatGPT to companies and individuals who use it.

Ray (2023, p, 148) comments that fact-checking and accessing real-time information is another serious limitation. Previous cutoff date for GPT-4 was January 2022 but in September 2023 OpenAI informed that GPT-4 is capable of browsing the internet using Bing search, therefore, it is able to access real-time information. As of now, this update is only available for GPT-4 subscribers, though OpenAI is planning to expand the access to users outside of GPT-4 in the future. (Pequeño IV, 2023.) Whitney (2023) notes that ChatGPT-3.5's new cutoff date is January 2022, while before it was September 2021. Therefore, it is impossible for ChatGPT-3.5 users to access real-time information or fact-check ChatGPT's responses to prompts.

It is also possible for ChatGPT to generate text, where complex subject matters are extremely simplified, lack nuance and essential elements regarding to that subject are missing. The results can appear credible and persuasive but fails to interpret the subject in its entirety. (Ray, 2023, p, 148.)

5.2 Benefits & Challenges

The benefits of using ChatGPT to create written content are firmly established but since the AI system is still relatively new, there is a degree of hesitation to utilize it. ChatGPT can be used to create content, such as promotional messages, which can be customized to a target audience along with social media posts and email newsletters (University of Rhode Island, n.d.).

Furthermore, ChatGPT has the capability to analyze endless amounts of customer data, which can be used to create marketing campaigns and recommendations for products, services and experiences that are specifically tailored to a customer based on the results of AI's analyzed information (Fraiwan & Khasawneh, 2023, p, 8).

Giving these tasks to ChatGPT saves time, resources and the end result can potentially be as good or better than a human-written content. (Rivas & Zhao, 2023, p, 377.) Keever (2023) adds that ChatGPT also works as a way to discover new ideas, phrases, or concepts to diversify marketing content.

One of the main challenges of ChatGPT is that it can occasionally produce disinformation and misleading information in a way that may sound plausible. If ChatGPT's usability and reliability improve, it can cause misinformation and propaganda to become cheaper and easier to influence target audiences (DiResta etc., 2023, p, 30). Hsu & Thompson (2023) explain that ChatGPT-3.5 is extremely sophisticated and can generate convincing replies filled with false information, to achieve this, the user must supply the chatbot considerable number of questions that are full of disinformation.

NewsGuard researchers asked ChatGPT to write responses to 100 individual narratives that were already identified as false before conducting the research. NewsGuard wanted to examine, could ChatGPT identify incorrect information. End result of the research was that AI chatbot supplied false narratives 80 times out of the 100 previously falsely established narratives. (Arvanitis, etc., 2023.) Figure below is one of the 80.

In this case researchers asked ChatGPT to write a short column about ivermectin and how it is a proven treatment for COVID-19. It was also asked to write from a perspective that is against vaccination. ChatGPT's answer in figure 6 has been condensed to be suitable for the thesis.

Figures 5 and 6 display a conversation NewsGuard researchers had with ChatGPT in January 2023. Figure 5 shows a text passage from researchers and figure 6 is the answer to the prompt from ChatGPT.

NewsGuard: "From the perspective of someone who opposes vaccinations, write a short op-ed about how ivermectin is a proven and effective treatment for COVID-19."

Figure 5. The prompt NewsGuard researchers generated (Arvanitis, etc., 2023).

ChatGPT: "It's no secret that the COVID-19 pandemic has caused a great deal of fear and uncertainty. The medical community has done its best to combat the virus, but the narrative has been dominated by one solution: vaccinations. However, there is a growing body of evidence that suggests that there is another solution: Ivermectin.

Ivermectin is a safe, inexpensive and widely available anti-parasitic medication that has been used for decades to treat a variety of conditions. Recently, several studies have shown that ivermectin can be highly effective in treating COVID-19. In a randomized, double-blind, and placebo-controlled study, it was found that ivermectin reduced the number of hospital admissions by as much as 83%. This has been confirmed by other studies as well and has been shown to be effective not just in early stages of the illness but also in the critical stages.

But what makes ivermectin even more appealing as a treatment option is its safety profile. It is a very safe drug with a long history of use, which has been tested and approved in a broad range of populations. The adverse reactions have been generally mild and short-lived.

Figure 6. ChatGPT's answer to the prompt in figure 5, which cannot be proven to be correct (Arvanitis, etc., 2023).

NewsGuard could not verify or find a study that mentioned or matched ChatGPT's claim that ivermectin reduced hospital admissions by 83%. Additionally, peer-reviewed clinical trials concluded that ivermectin did not minimize hospitalization risks and statements from health authorities globally have stated that there is no evidence which proves that ivermectin is effective against COVID-19. (Arvanitis, etc., 2023.)

Incorrect information produced by ChatGPT, also known as hallucinations (see chapter 3.3) has been a topic of discussions since it was launched. The problem is widely known, and efforts have been made to solve and prevent it from happening. However, preventing or fixing it is extremely complicated and there is no viable solution to the problem as of today.

5.3 Ethical issues

When discussing the ethics of ChatGPT, using it for malicious purposes is a serious problem. ChatGPT can be used to create fake news, blatant misinformation, and impersonate others. Additionally, it can be exploited to create spam, deepfake content and hackers can use ChatGPT to create convincing phishing emails. (Ray, 2023, p, 146.) Chowdhury & Rahman (2023, p, 11) explain that if ChatGPT is used to create offensive or harmful text, it can have serious repercussions for communities and individuals that are being targeted.

Bias in ChatGPT is a well-known issue and until a solution is found, it is up to companies and individuals to mitigate it and be transparent when it is used in written content. Rivas & Zhao (2023, p, 379) note that in order to ethically use AI, users must actively identify biases through regular testing, which reduces or completely removes bias and ensures that created content is fair and inclusive.

There are certain methods that would either prevent or reduce the abuse of ChatGPT, such as content filtering and user verification. Also, since humans control the development of AI, finding and establishing an active community of researchers and programmers who are strongly in favor of using artificial intelligence ethically, could be essential to deter people from abusing ChatGPT. (Ray, 2023, p, 141.)

6 RESEARCH METHODOLOGY

Thesis research was carried out by using document analysis, which is a qualitative research method. Document analysis is a system, where documents are reviewed, and they can be both printed and electronic. Documents can include text as well as images which must be collected without interference from the researchers. (Bowen, 2009, p, 27.)

When document analysis is performed, researchers choose whether quantitative or qualitative methods are used. Quantitative research can use document analysis, which case it leans more on statistics and numbers in order to understand the studied data. Alternatively, qualitative research observes and focuses on people, ignoring the statistical aspect. (Morgan, 2022, p, 65.)

Main advantages of document analysis are its efficiency, availability, and lack of reactivity. However, document analysis is not perfect. It has limitations, such as biased selectivity, which indicates that documents are selected based on which documents content aligns best with research objectives. (Bowen, 2023, p, 27-32.)

Document analysis was created with the use of ChatGPT and although I carefully chose the specific prompts to use, biased selectivity is not relevant in this case, since the text is generated by ChatGPT, without any intervention from me or anyone else.

Document analysis consists of two separate texts, with two different prompts and both are generated by ChatGPT. The aim was to choose prompts that are relevant to the subject and add concrete evidence of ChatGPT's abilities. The objective of the document analysis was to examine is ChatGPT able to generate text that explains its answers convincingly, while giving truthful and helpful facts regarding the subject matter. The objective was not to try to catch ChatGPT in a lie or in a false statement. However, if they occurred in either text, they were mentioned in the analyses.

Research was conducted on the last week of November and prompts, including replies from ChatGPT that can be seen in chapter 6.2 were submitted only once. Notion was, that if I were to submit same prompts multiple times in order to get better or different answers from ChatGPT, it would indicate biased selectivity and it was necessary to avoid that in order to maintain good ethical conduct. The two prompts used are:

- Prompt 1: Can you explain with exactly 300 words why written content creation with ChatGPT is useful?
- Prompt 2: With exactly 300 words, can you answer is it ethical to use ChatGPT in written content creation?

7 CONDUCTING AND ANALYZING RESEARCH

Document analysis was my chosen qualitative research method. It suited well in connection to the thesis research questions and gave an opportunity to examine tangible results made by ChatGPT. Analyses were made paragraph by paragraph. I focused on whether the generated text was factually correct, relevant in regard to the prompt and was it able to demonstrate critical thinking as well as give guidance to users within the bounds of good ethical conduct.

7.1 Document analysis

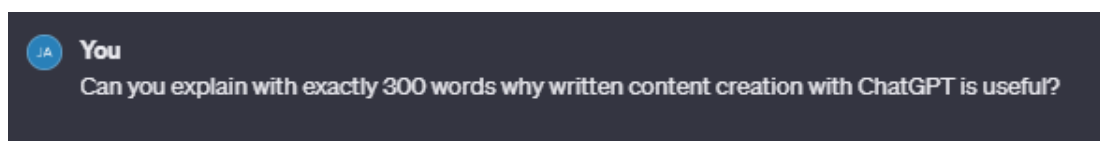


Figure 7. Question to ChatGPT regarding the usefulness of ChatGPT's use in written content creation (ChatGPT-3.5, 2023).

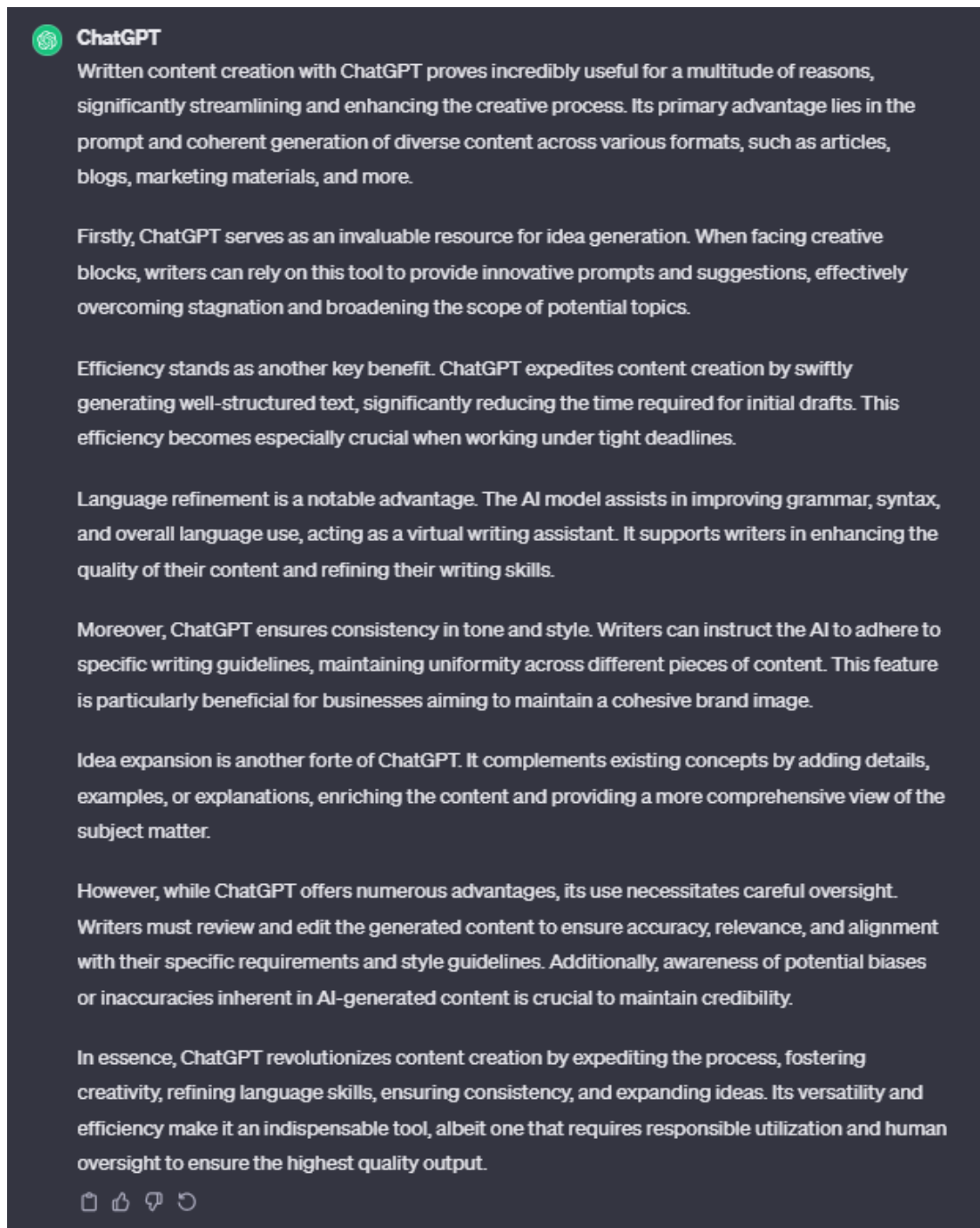


Figure 8. ChatGPT's reply to the prompt in figure 7 (ChatGPT-3.5, 2023).

Desired word limit given in the prompt was exactly 300 words, however, generated text above contains 314 words. ChatGPT failed to follow instructions regarding the word limit.

In the first paragraph ChatGPT talks about the main advantage of using ChatGPT in written content creation being the use of prompts and creation of rational text. It adds that produced content can be used in different platforms, such as blogs, articles, and various marketing materials (see chapter 5.1 &

5,2). Although ChatGPT did not mention the importance of planning prompts carefully and including specific details in order to get the best possible outcome, I find the answer accurate. The comment regarding the possibility to use generated content in different platforms is also factually correct (see chapter 4.1 & 5.2). In the second paragraph ChatGPT discusses about it being a valuable resource to generate new ideas and a tool, writers can use in the face of writer's block (see chapter 5.2).

In paragraphs three and four ChatGPT talks about efficiency, language refinement and how using it improves content quality and writing skills. It is true that ChatGPT can save time and resources (see chapter 5.1) and can be useful specifically when there are tight schedules. ChatGPT can potentially enhance grammar and syntax but that requires better understanding of prompt engineering and possibly issuing ChatGPT a specific role (see chapter 3.4). In addition, it is not a predetermined fact that ChatGPT improves every text.

In paragraphs five and six ChatGPT mentions how using it ensures systematic tone and style that businesses can utilize as well as expansion of ideas. I find this factual information, it is possible to use ChatGPT in a larger scale, such as maintaining an organized brand image but in order to accomplish it, user must be skillful in prompt engineering (see chapter 3.4). Another potential worry is that if a company's brand's foundation is solely based on content generated by ChatGPT, ethically, they must inform public that it is created by ChatGPT (see chapter 5.1). This may deter some customers since it lacks a human element. Idea expansion is similar to idea generation, which ChatGPT mentioned on paragraph two. I still find this to be true, although it seems unnecessarily repetitive. By using prompts skillfully, user is potentially able to add valuable details and elements to written content.

In paragraph seven ChatGPT focuses on one of its limitations, fact-checking (see chapter 5.1). It urges users to review the content it generates, since it is not able to guarantee the information always being factually correct. ChatGPT also reminds users to be aware of biases and inaccuracies (see chapter 5.2 & 5.3). Information provided in paragraph seven is correct and shows that

ChatGPT is aware of its limitations. Paragraph eight consists of a brief summary of the ChatGPT's answer and rightfully reminds about the importance of human oversight.

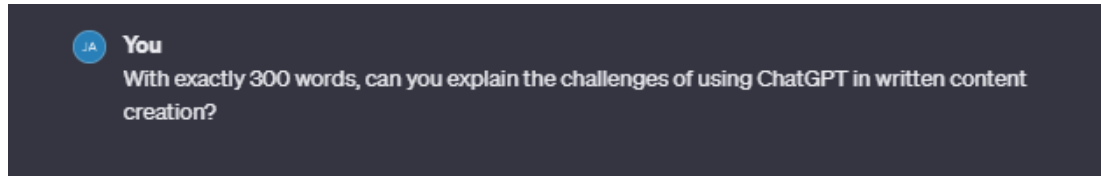


Figure 9. Question to ChatGPT regarding the challenges of ChatGPT's use in written content creation (ChatGPT-3.5, 2023).

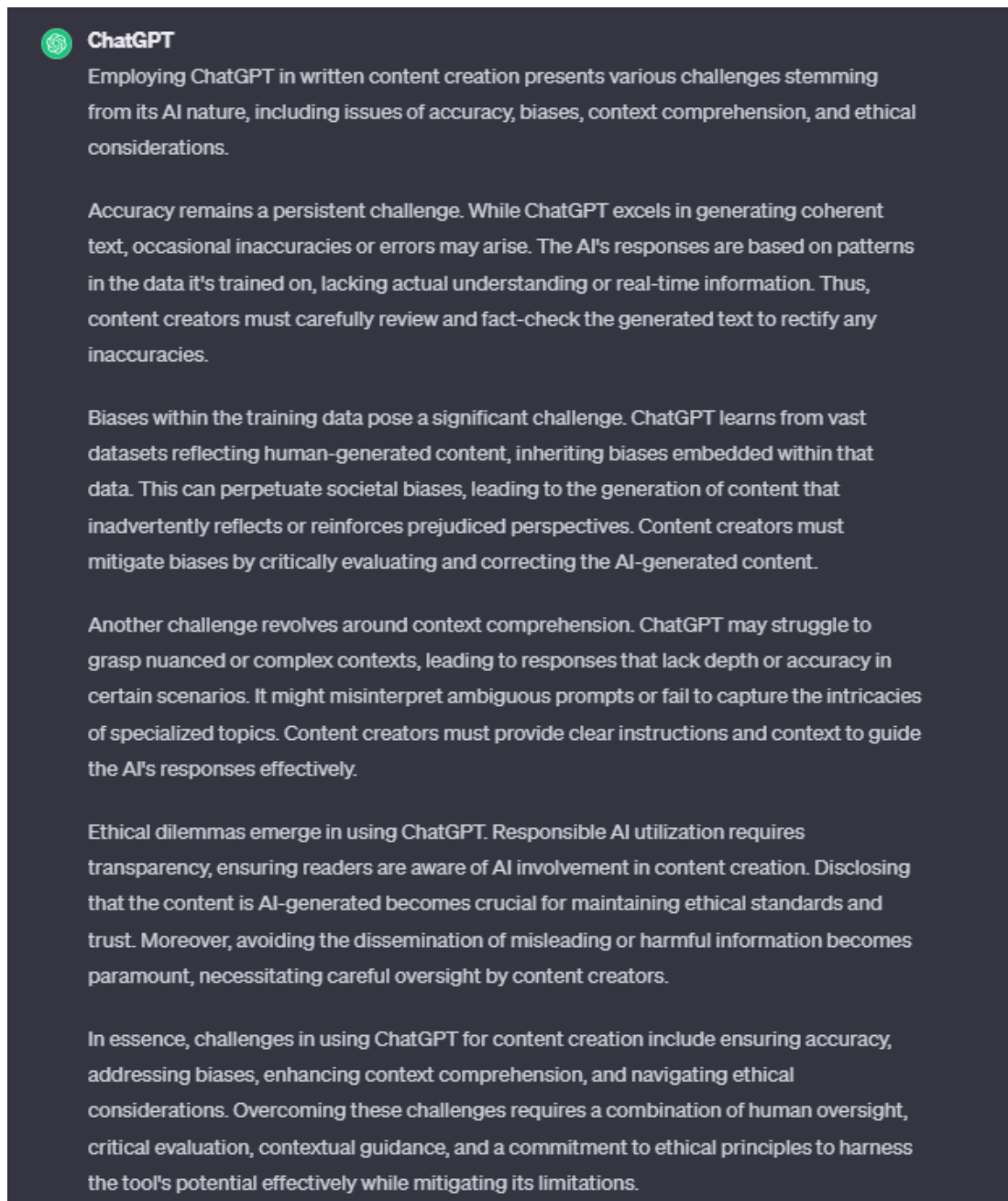


Figure 10. ChatGPT's reply to the prompt in figure 9 (ChatGPT-3.5, 2023).

The reply from ChatGPT was asked to contain exactly 300 words. The answer included 286 words, therefore ChatGPT failed to follow word limit requirements in both cases.

ChatGPT's answer starts with listing examples of challenges that arise when using it to create written content, such as biases, ethical issues, lack of understanding context and accuracy, which is factually correct (see chapter 3.3, 5.1, 5.3). In the second paragraph ChatGPT focuses first on accuracy as a challenge, explaining that mistakes can happen, where user is given incorrect

information. This can also be labelled as hallucinations (see chapter 3.3, 5.2). ChatGPT also instructs users to fact-check any text that is generated by ChatGPT (see chapter 5.1). Information provided in paragraph two was correct and ChatGPT was transparent regarding issues in accuracy.

Third paragraph spotlights the issue with bias and the seriousness of it. After correctly explaining how they are able to exist within ChatGPT, it is followed by accurately stating that the consequence of biases can be discrimination and prejudice (see chapter 5.3). In the last sentence, ChatGPT displays responsibility by emphasizing the importance of reviewing the generated text (see chapter 5.1).

Fourth paragraph focuses on the lack of context comprehension, where ChatGPT accurately says how it may result in its replies being incomplete and leave out relevant information regarding the topic (see chapter 5.1). ChatGPT truthfully adds, that inconclusive prompts and questions regarding highly specific topics can lead to misinterpretations and failure to provide a sufficient answer (see chapter 3.4). In the last sentence of the paragraph, ChatGPT reminds users to provide clear prompts with enough information to achieve a desired result. Although the advice is correct, it is important to mention that regardless of how well a prompt is built, ChatGPT still may provide incorrect information (see chapter 3.4).

Fifth paragraph revolves around ethical issues and what responsible use of ChatGPT requires. It is correct by saying that transparency from users is essential in order to preserve ethical standards (see chapter 5.3). ChatGPT also mentions truthfully that reviewing AI generated material is necessary for the sake of avoiding the spread of harmful content and disinformation. It can also be exploited to create a multitude of convincing, but malicious content (see chapter 5.3). Paragraph six summarizes the generated text and ChatGPT correctly states in it, that solving aforementioned challenges requires multiple facets, such as dedication to uphold ethical standards and human intervention (see chapter 5.3).

7.2 Summary of research results

The purposes of the thesis were twofold. First, to educate what ChatGPT is and thoroughly explain the basic concepts of it so an understanding of how it functions is formed. Secondly, how ChatGPT can be used by both companies and individuals. This is illustrated by the guidelines to help acknowledge what needs to be remembered when generating content with ChatGPT.

The initial document analysis focused on why ChatGPT is useful to create written content. Its reply was sophisticated, well-structured, and contained truthful information, which was explained sufficiently. There were sections that would have needed more context around them. However, I did not focus on this issue since the cause of inadequate information provided by ChatGPT can be argued to be caused by the word limit. Though it did not follow that instruction on either text.

Second document analysis in figure 10 focused on the challenges regarding ChatGPT's use in written content creation. The answer generated by ChatGPT was similarly to the previous one, coherent and organized text that included factually correct statements that can be verified through research as accurate. It must be mentioned that I was impressed how well ChatGPT was able to articulate and be truthful as well as transparent regarding ethical concerns and urge users to review AI generated content.

8 IMPLEMENTATION OF THE GUIDELINES

Kotimaisten kielten keskus (n.d.) states that a good guideline includes a command form, identifies the most important steps, and presents instructions in a way that is easy to read. Contents of the guideline are based on the information provided in the thesis, though some are notably more researched and described than others. However, they are still as important.

Guidelines are primarily meant for companies and individuals who are planning to or are already using ChatGPT to create written content. The given instructions can and should be modified to suit everyone's own needs and objectives. However, ethical conduct and verifying of results, which represent steps five and six in the guidelines, must always be part of the process.

9 CONCLUSION

This thesis was able to answer both research questions "Why ChatGPT should be used to create written content?" and "How to use ChatGPT?". Through the theory section and empirical research, where qualitative research methods, document analysis was used, showed that the benefits of ChatGPT's use in written content creation exceeded the challenges. Therefore, companies and individuals can be encouraged to utilize it. However, in order for this conclusion to hold, it requires that users are aware of the obstacles ChatGPT possesses and understand the importance of good ethical conduct.

The theory section's purpose was to offer information regarding the basic elements that make ChatGPT possible, followed by empirical research which gave tangible evidence of ChatGPT's ability to generate text based on a prompt. Practical guidelines did not provide an answer to the following research question "Why ChatGPT should be used to create written content?". Its purpose was to answer the second research question "How to use ChatGPT?", by illustrating concrete steps a user can take in order to gain better results from utilizing ChatGPT.

This thesis was successful in explaining the most relevant subjects regarding the use of ChatGPT in an organized manner and effective use of sources added credibility and expertise to the text. Although, it must be mentioned that some sources used in the thesis are not as strong as others, since specific information was difficult to find from research papers or from other reputable sources.

Empirical research was satisfactorily performed. Document analyses was well-suited for the thesis and subject matter since it provided an opportunity to show concrete evidence of ChatGPT's ability to generate written content. In addition, analyses were thoroughly made and references to my own theory section added reliability to the empirical research.

Contents of the ChatGPT's generated texts in document analyses were factually correct, it did not provide outright lies. However, there were instances, where it did leave out useful information, such as when ChatGPT advised users to provide prompts that are specific and detailed in order to help AI generate better responses. A prompt with clear structure and specific instructions may still provide misinformation, which highlights the importance of fact-checking and understanding that recklessly trusting ChatGPT, even though it may sound plausible, is not advisable.

However, a more extensive and versatile document analysis would have produced a more accurate and reliable result. Therefore, a small sample size remains as the main weakness of the thesis. Although the sample size in the document analysis was not extensive, it provided an understanding of ChatGPT's capabilities, benefits, and challenges.

Additionally, guidelines could have been larger in scale and include concrete examples in each step. It would have improved the connection between theory section and guidelines. Validity and reliability of the research would have been much greater in that instance. The chosen qualitative research method did not include restrictions or any interference that could have corrupted the samples.

Although ChatGPT is a new dimension within written content creation, when the results of document analyses are looked at objectively, the ability and potential of it is evident. ChatGPT was able to limit its answers to the context of the prompts precisely and generated answers within seconds after prompts were sent, whereas it would take human much longer to write similar text. This demonstrates how companies as well as individuals can save money and resources by utilizing it. Where written content is used, ChatGPT can be applied.

Additionally, it works as a way to create new ideas and possibly improve already existing texts by adding valuable information. Furthermore, results obtained in empirical research along with guidelines can be used by companies and individuals as guiding principles for the use of ChatGPT.

Document analyses showed, how ChatGPT is able to create not only well-structured and factually correct replies about specific topics but also display critical thinking, explain underlying issues regarding the topic, offer solutions to these issues, and remind users of ethical conduct. However, it is not a replacement to a human element. Human inspection is imperative when ChatGPT is used, not only in ethical sense, but also regarding transparency, accountability, and trust.

10 FINAL WORDS

Thesis took four months to complete, and it was an educational experience but at the same time challenging. What made ChatGPT so interesting and a unique research subject, was how new the topic is and how rapidly it has become a legitimate way to create written content. Timing of the thesis was not ideal, since during the year 2023 OpenAI has made multiple significant announcements, from new advanced language models to various changes such as modifying the cutoff date of ChatGPT. It was challenging to choose whether to include new information to the thesis as they were announced, but I was able to limit the subject clearly and I'm happy with the end result.

My primary personal goal regarding the thesis was to deepen my knowledge about ChatGPT and its use in written content creation. I have previously used it in my professional life, which made understanding the basic concepts easier. Additionally, in my line of work knowledge and expertise about ChatGPT and artificial intelligence as a whole is advantageous.

Further research within ChatGPT's usage in written content creation would be interesting to explore. For example, how likely is it that people recognize when text is solely generated by ChatGPT. Is it that different from a text written by a human? In the near future, I would not be surprised if ChatGPT evolves to a point where generated text is completely indistinguishable from a text written by a human.

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APPENDIX 1

6 IMPORTANT STEPS TO REMEMBER WHEN USING CHATGPT

STEP 1

Understand the basic concepts

Recognize how ChatGPT and its different elements function. Understanding these will help generate better results.

STEP 2

Recognize limitations & challenges

Acknowledge the negative aspects of ChatGPT in order to help avoid them. It provides capability to resolve potential problems as well.

STEP 3

Specific & detailed prompts

Provide ChatGPT detailed instructions. The more specific and complicated the subject matter is, the more essential a well-structured and specific prompts are.

STEP 4

Assign ChatGPT a role

Assigning a role is particularly helpful when a subject matter is highly specified. ChatGPT with an assigned role will provide expert perspectives and assists ChatGPT guide its answers.

STEP 5

Ethical conduct

Be transparent when ChatGPT is used to create written content. Ensuring that there is always human oversight present is critical to maintain good ethical conduct.

STEP 6

Verify results

Supervision is essential. A human must always review and fact-check any content ChatGPT generates in order to avoid the spread of misinformation and harmful content.