

Potentiality of ChatGPT as an Entertainment Recommender System

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Introduction

In the 21st century, the world of technology is evolving every day. One of the leading technologies currently revolutionizing the computer science industry is artificial intelligence. According to Simmons and other researchers at the University of New Hampshire, artificial intelligence, or AI, is a technological innovation that can complete rigorous tasks by mimicking human intelligence (Simmons et al., 1988, pg. 2). One prominent example of artificial intelligence are large language models, or LLMs. As stated by Jiang and other researchers published at MIT Press, large language models are artificial intelligence algorithms that utilize deep learning techniques to understand, generate, and predict content (Jiang et al., 2020). In 2022, the large language model ChatGPT began gaining popularity all over the world. ChatGPT is a revolutionary technology developed by OpenAI that uses advanced AI techniques to generate natural language responses to a given prompt or input (Kalla & Smith, 2022). Therefore, ChatGPT has many unique features giving it the potential to serve as a recommender system. Based on Burke of DePaul University, recommender systems are tools that recommend items of interest to the user (Burke et al., 2011). Against this information, this research study explores the extent to which teenagers believe that ChatGPT, a phenomenal artificial intelligence model, can serve as an existing recommender system specifically within the entertainment sector.

Importance of the Research

Conducting this study is incredibly important because it can provide insights into the beliefs of teenagers regarding ChatGPT's proficiency as an entertainment recommender system. Current research showcases an interest in using large language model processing abilities, including ChatGPT's features, as recommender systems. As society continues to rely on technology for entertainment purposes, it is vital to learn the potential benefits or disadvantages of using artificial intelligence as an entertainment recommender system.

I hypothesize that ChatGPT, due to its numerous capabilities, can serve as a proficient entertainment recommender system. As my research project aims to compare ChatGPT's recommendations to Netflix and Spotify's recommendations, I hypothesize that ChatGPT can replace both Netflix and Spotify. One key assumption about ChatGPT is that it upholds user privacy and security throughout the entire recommendation process because not doing so would raise ethical concerns.

Gap in the Research

Pre-existing research regarding large language models explores how effective ChatGPT would be as a recommender system (Di Palma et al., 2023). Although, this pre-existing research does not investigate how ChatGPT can serve as an entertainment recommender system. Also, it does not explore recommender systems specifically of the entertainment sector. Furthermore, there is not any research about the beliefs of high school aged-teenagers at ██████████ High School on ChatGPT as a entertainment recommender system. High schoolers are one of the largest age groups using entertainment recommender systems. In fact, according to Judy Berman, a TV critic at TIME magazine, 62% of teens use Netflix as their primary streaming source (Berman, 2019). The purpose of this study is to address this gap and bring attention to the ways in which technology can improve the entertainment industry. To analyze the influence of ChatGPT on entertainment recommender systems, the guiding research question is: To what

extent do high schoolers at [REDACTED] High School believe that ChatGPT can serve as a proficient entertainment recommender system?

Literature Review

Searching Techniques

The sources below were found by examining online databases of reliable peer-reviewed sources to guarantee credibility. Keywords used while researching in credible databases were ChatGPT, large language models, artificial intelligence, and recommender systems.

Benefits of ChatGPT

One perspective is that ChatGPT can serve as a great entertainment recommender system because of its multiple features. Based on Reddy of the National Institute of Technology Puducherry, movie recommendation systems such as Netflix have multiple issues such as the cold-start problem, sparsity, and the long-tail problem (Reddy et al., 2023) These challenges often lead to suboptimal suggestions for users. However, ChatGPT's conversational functions can fix these issues by engaging with users and adapting to their fickle preferences. In addition, according to Ji and researchers at Cornell University, ChatGPT's ability to uncover users' personality traits from its language styles can provide relevant explanations (Ji et al., 2023). This unique ability, along with logical reasoning, establishes ChatGPT as a valuable tool with the capability of acting as an entertainment recommender system.

Disadvantages of ChatGPT

Additionally, another perspective is that the ChatGPT cannot ever serve as an entertainment recommender system because of its potential problems. As said by Blum of Kenyon College, ChatGPT is prone to leaking personal information, biases, and inaccurate information to its users (Blum, 2022). These pitfalls pose serious risks when considering ChatGPT as an entertainment recommender system since user privacy and accuracy are of utmost importance. Additionally, based on researchers at Cornell University, ChatGPT has inherent biases present reflecting societal norms and biases (Schramowski, 2022). These findings portray the belief that ChatGPT cannot be used as a recommender algorithm.

Cautious Implementation of ChatGPT

Lastly, a final perspective within the technology industry is that ChatGPT may act as an entertainment recommender system, but it needs certain restraints. When evaluating ChatGPT's performance as an assistance tool for ophthalmologists, multiple limitations were noted by the doctors. According to Antaki and researchers published at the National Library of Medicine, ChatGPT was not accurate in its medical information and required constant supervision by professionals (Antaki et al., 2023). These issues of accuracy and reliability introduce concerns about ChatGPT's potential to serve as an entertainment recommender system. As mentioned in a study by researchers at the University of Aegean, when ChatGPT was used as a recommendation system in a museum, the museum staff lacked knowledge about ChatGPT's functioning (Trichopoulos et al. 2023). This limited understanding of ChatGPT's capabilities makes it risky to use the large language model as an entertainment recommender system. Essentially, ChatGPT needs to be treated with extreme care to avoid possible problems.

Summary

All in all, numerous sources are highlighting the effects of artificial intelligence on recommender systems. These studies explored the positive and negative effects of large language models but did not go in-depth about the likeliness of ChatGPT serving as a recommender system of the entertainment industry. To connect this prior research and to fill this

gap, this study aims to determine the extent to which ChatGPT can serve as a proficient entertainment recommender system, through the lens of high school students.

Method

Introduction

The mixed-method approach of an explanatory sequential design was utilized to answer the research question aiming to determine the extent to which ChatGPT can serve as a proficient entertainment recommender system. According to Leedy and Ormord, the authors of *Practical Research*, an explanatory sequential design involves two phases in a QUAN → qual format: the dominant quantitative phase coming first and the second qualitative phase serving as a follow-up (Leedy & Ormord, 2023). Studies, such as the one conducted by psychologists Jacobson, Hanson, and Zhou, evaluate similar research questions with an explanatory sequential design. The three researchers explored the effectiveness of graduate training in preparing psychologists to provide test feedback, which is similar to my project goal since they both focus on how one item or action can influence something else. In the researchers' first phase, they gained statistical data through a 40-item questionnaire. In their second phase, they gained qualitative data through follow-up interviews, which is something I am also planning to conduct.

The success of the above study in addressing similar research project goals as mine through an explanatory sequential design compelled me to utilize the mixed-methods approach in my study. My initial plan was to conduct a content analysis, which is the method used by many researchers of the computer science field. However, I realized that it was better to conduct a survey and interviews to gain insights about the opinions of high school students. A content analysis would not provide a thorough analysis of the viewpoints of teenagers. Additionally, in a study by Lyu, Vachha, Chen, and Kumaravel, which analyzed the communication between a VR streamer and spectators, formative interviews with six experts were conducted (Chen et al., 2023). The study and the aforementioned study are both part of the same discipline, computer science, which guided my decision in implementing interviews with an expert. Overall, a mixed method approach fits my research project well because it allows for me to thoroughly examine the cause-effect relationship between ChatGPT and entertainment recommender systems and have one type of data guide the subsequent collection of another type of data as said by Leedy and Ormord (Leedy & Ormord, 2023).

Phase 1 - Survey

The first phase of my study was a survey on Google Forms. A survey is a list of questions used to extract specific data from a specific group of people (Leedy & Ormord, 2023). In total, 106 survey responses were received from high schoolers at ██████████ High School. The number of survey participants were gained by visiting classrooms and speaking with teachers to encourage students to fill out the survey. Participants were asked to rank aspects of ChatGPT, Netflix, and Spotify's recommendations on a scale of 1 to 5. As stated by Anelli and researchers of Cornell University, these aspects include accuracy, personalization, using user preferences, handling cold-start situations, reordering existing recommendation lists, etc (Anelli et al., 2023). Netflix's movie recommendations were gained by inputting the movie Justice League, the TV-show Young Sheldon, and the Bollywood film Badrinath Ki Dulhania into Netflix's recommendation algorithm (Appendix A). Netflix gave about 5 recommendations for each of these inputs and they were placed on the Google Form. Then, ChatGPT provided recommendations based on the same three inputs. ChatGPT was given the prompt, "If I liked

(input movie) , recommend some more movies/TV shows.” ChatGPT’s movie/TV show recommendations then were placed on the Google Form (Appendix B). Then, the survey participants were asked to rank the relevance, variety, and likelihood of usage of both Netflix and ChatGPT’s movie/TV show recommendations (Appendix C). After that, Spotify’s music recommendations were gained by inputting the Top 10 Artists of 2023, which were Taylor Swift, Bad Bunny, The Weeknd, Drake, Peso Pluma, Feid, Travis Scott, SZA, KAROL G, Lana Del Ray. Spotify’s recommended playlist based on these inputted artists was placed on the Google Form (Appendix D). Then, ChatGPT was asked to recommend a playlist based on these same inputted artists, and its playlist was placed on the Google Form (Appendix E). Again, survey participants were prompted to rank the relevance, variety, and likelihood of usage of both Spotify and ChatGPT’s music recommendations (Appendix F).

Phase 2 - Interviews

The second phase of my study was follow-up interviews with 10 survey participants. Interviews were conducted to ask my participants to expand upon the choices they made in the survey. Three separate interview versions were created to analyze all the different choices that participants selected in the survey. The first version was aimed for the participants who chose Netflix over ChatGPT as a movie/TV show recommender and chose Spotify over ChatGPT as a music recommender (Appendix G). The second version was aimed for the participants who chose ChatGPT over Netflix as a movie/TV show recommender and chose ChatGPT over Spotify as a music recommender (Appendix H). The third version was aimed for the participants who chose Netflix over ChatGPT as a movie/TV show recommender and chose Spotify over ChatGPT as a music recommender (Appendix H).

Ethical Considerations

Some ethical considerations in the survey and interviews included anonymity and informed consent. In the survey, students had received full information detailing my research process including the topic, target audience, and purpose. Additionally, all survey and interview responses were kept private and the Google Form did not track any student information, such as their emails or names.

Limitations

Unfortunately, there may be certain limitations hindering the success of my research project. The main limitation of a mixed method approach is properly integrating both the quantitative and qualitative phases and deriving viable data from both data types (Leedy & Ormrod, 2023). This limitation can be avoided by ensuring that both data types are analyzed thoroughly to create a comprehensive view. Another limitation is that the survey did not ask participants about the time and experience they have with ChatGPT, Netflix, and Spotify. Therefore, some participants may have much more experience with these platforms than others.

Discussion of Findings

Quantitative Results - Survey

The first phase of this research process was a survey generating quantitative data. The survey was completed by a total of 106 students at ██████████ High School. The participants of this survey were a diverse group of students spanning grades 9 through 12. The participants had varying opinions about using ChatGPT as an entertainment recommender system for movie/TV recommendations and music recommendations. The following tables show the percentage of respondents who rated a specific number (scale of 1 to 5) about a specific factor of a recommender system.

Survey Opinions on Netflix vs. ChatGPT

The first part of the survey explored high school students' opinions on movie/TV recommendations from the streaming platform Netflix and ChatGPT. The survey displayed Netflix's recommendations (Appendix A) of the movie "Justice League", the TV show "Young Sheldon", and the movie "Badrinath Ki Dulhania" along with showing ChatGPT's recommendations (Appendix B) of the same content. The questions of the survey (Appendix C) asked participants to rate different aspects of Netflix and ChatGPT's recommendations on a scale of 1-5.

As seen in Table 1, there were varying opinions on the relevance, variety, and likelihood and usage of Netflix's movie/TV show recommendations. For the rating of relevance/personalization, 40% of high schoolers rated it a 3. According to Varela and Kaun, authors of the novel *Netflix at the Nexus*, Netflix's recommendations are personalized based on the viewings of peers, family, a geographic location, and a reference community (Varela & Kaun, 2019, p. 200). Therefore, these personalization recommendations may not have appeared very relevant to teens since they were greatly influenced by other users. For the rating of the variety/diversity, 41.2% of high schoolers rated it a 4. This means that most participants believed Netflix's recommendations were decently varied with a mix of different genres, TV shows, movies, etc. For the rating of the likelihood of usage, 34.1% of high schoolers rated it a 4. This demonstrates that most participants agreed that they would watch a TV show or movie from Netflix's recommendations.

Table 1: Percentage of Participants' Rating of the Relevance/Personalization, Variety/Diversity, and Likelihood of Netflix's Movie/TV Show Recommendations

Likert Scale:	1	2	3	4	5
Relevance/Personalization	3.5%	11.8%	40%	37.6%	7.1%
Variety/Diversity	3.5%	11.8%	29.4%	41.2%	14.1%
Likelihood of Usage	4.7%	18.8%	27.1%	34.1%	15.3%

As seen in Table 2, the opinions on the relevance, variety, and likelihood of usage of ChatGPT's movie/TV show recommendations largely favored ChatGPT. For the rating of the relevance/personalization, 42.4% of high schoolers rated it a 5. This illustrates that many participants believed the recommendations were relevant to the content they originally watched. For the rating of the variety/diversity, 34.1% of high schoolers rated it a 3. Based on Partha Ray, an assistant professor at Sikkim University, ChatGPT has many biases which can cause it to recommend very limited content (Ray, 2023, p. 128). These inherent biases may have contributed to less diverse recommendations. For the rating of the likelihood of usage, 41.2% of high schoolers rated it a 4. This proves that most participants agreed that they would watch a TV show or movie from ChatGPT's recommendations.

Table 2: Percentage of Participants' Rating of the Relevance/Personalization, Variety/Diversity, and Likelihood of ChatGPT's Movie/TV Show Recommendations

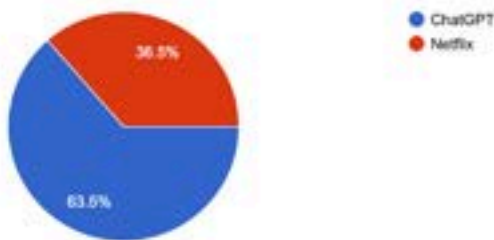
Likert Scale:	1	2	3	4	5
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Relevance/Personalization	2.4%	3.5%	16.5%	35.3%	42.4%
Variety/Diversity	5.9%	10.6%	34.1%	28.2%	21.2%
Likelihood of Usage	2.4%	7.1%	27.1%	41.2%	22.4%

The final survey question of the first half of the survey asked participants to choose whether they would use ChatGPT or Netflix as a recommender system to discover movies/TV shows. The majority of participants, 63.5%, chose ChatGPT while a smaller percentage of respondents, 36.5%, chose Netflix. Based on researchers Reddy and Sujithra, movie/TV show recommendation systems like Netflix have multiple issues such as the cold-start problem, sparsity, and the long-tail problem (Reddy et al., 2023). Thus, participants believed that ChatGPT would serve as a better alternative.

Figure 1. Pie chart of ChatGPT vs. Netflix as a recommender system

Would you rather use ChatGPT or Netflix as a recommender system to discover movies/TV shows?
85 responses



Survey Opinions on Spotify vs. ChatGPT

The second part of the survey explored high school students' opinions on music recommendations from the streaming platform Spotify and ChatGPT. The survey displayed Spotify's recommended playlist (Appendix D) after inputting the top 10 music artists of 2023 and showed ChatGPT's recommended playlist (Appendix E) after inputting the same artists. The questions of the survey (Appendix F) asked participants to rate different aspects of Spotify's and ChatGPT's recommendations on a scale of 1 to 5.

As seen in Table 3, the opinions on the relevance, variety, and likelihood of usage of Spotify's music recommendations largely favored Spotify. For the rating of the relevance/personalization, 45.2% of high schoolers rated it a 4. This illustrates that many participants believed the recommendations were relevant to the content they originally listened to. For the rating of the variety/diversity, 41.7% of high schoolers rated it a 4. For the rating of the likelihood of usage, 32.4% of high schoolers rated it a 3.

Table 3: Percentage of Participants' Rating of the Relevance/Personalization, Variety/Diversity, and Likelihood of Usage of Spotify's Music Recommendations

Likert Scale:	1	2	3	4	5
Relevance/Personalization	6%	6%	29.8%	45.2%	13.1%
Variety/Diversity	3.6%	6%	19%	41.7%	29.8%

Likelihood of Usage 7.1% 16.7% 25% 32.1% 19%

As seen in Table 4, there were varying opinions on the relevance, variety, and likelihood and usage of Spotify’s music recommendations. For the rating of the relevance/personalization, 41.2% of high schoolers rated it a 4. This illustrates that many participants believed the recommendations were relevant to the content they originally listened to. For the rating of the variety/diversity, 34.1% of high schoolers rated it a 3. For the rating of the likelihood of usage, 34.1% of high schoolers rated it a 3. This establishes that some participants agreed that they would listen to a song from ChatGPT’s recommendations.

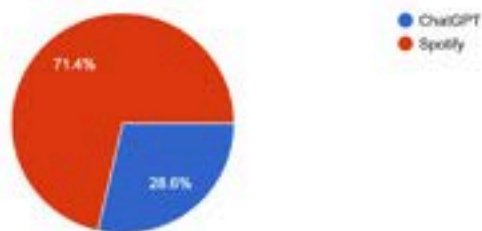
Table 4: Percentage of Participants’ Rating of the Relevance/Personalization, Variety/Diversity, and Likelihood of Usage of ChatGPT’s Music Recommendations

Likert Scale:	1	2	3	4	5
Relevance/Personalization	2.4%	7.1%	22.4%	41.2%	27.1%
Variety/Diversity	5.9%	10.6%	34.1%	31.8%	17.6%
Likelihood of Usage	11.8%	15.3%	24.7%	34.1%	14.1%

The final survey question of the second half of the survey asked participants to choose whether they would use ChatGPT or Spotify as a recommender system to discover new music. The majority of participants, 71.4%, chose Spotify while a smaller percentage of respondents, 28.6%, chose ChatGPT. According to Millecample, Htun, Jin, and Verbert, technology researchers, Spotify places an emphasis on personalized recommendations for its users through personalized playlists such as “Discover Weekly” and “Release Radar.” (Millecample et al., 2018). This personalization probably seemed most appealing to teenagers and caused them to utilize the app’s recommendations more often.

Figure 2. Pie chart of ChatGPT vs. Spotify as a recommender system

Would you rather use ChatGPT or Spotify as a recommender system to discover new music?
84 responses



Ultimately, the results of the quantitative analysis highlighted that high school students at Monroe Township High School preferred ChatGPT over Netflix for movie/TV show recommendations but preferred Spotify over ChatGPT for music recommendations. In other words, they were keen to utilize a new artificial intelligence, ChatGPT, to discover films and TV

shows to watch. However, they preferred to stick with an existing recommender system, Spotify, to discover new music.

Qualitative Results - Interviews

The second phase of this research process was an asynchronous, follow-up interview generating qualitative data. Similar to the qualitative phase of a study conducted by Jacobson, Hanson, and Zhou, survey respondents were randomly selected and contacted via email to see if they would be willing to participate in a follow-up interview (Jacobson et al., 2015). View Appendices G, H, and I to see the 3 versions of interview questions based on the answers that participants had in the previous survey.

As seen in Table 4, from the 7 responses detailing the choice of ChatGPT over Netflix as a movie/TV show recommender system, 4 participants believed ChatGPT was personalized, 2 participants believed ChatGPT was accurate, 2 participants believed ChatGPT had a vast amount of data, and 1 participant believed ChatGPT was easily comprehensible. Many participants expressed that ChatGPT had personalized recommendations because they received recommendations based on their unique tastes and preferences. Some participants portrayed that ChatGPT's recommendations were more accurate than Netflix due to its vast data network. One participant explained that ChatGPT's recommendations were easier to understand than Netflix's recommendations due to its explanations and tips.

Table 4: *Qualitative descriptions of choosing ChatGPT over Netflix as a recommender system*

Theme	Frequency (7 responses)	Examples
Personalization	4/7 = 57.14%	<ul style="list-style-type: none"> - "i would rather choose ChatGPT because on Netflix i noticed that the recommendations that i got were not exactly what i was looking for, and when i searched on ChatGPT i was able to find shows that are very similar to the ones i liked" - "The results also catered to my taste more than Netflix." - "I'd rather have recommendations that are closely related to what I previously watched and peak my interest" - "ChatGPT gave recommendations that

		are better suited to my taste. ChatGPT made the suggestions relevant towards my age and taste.”
Accuracy	2/7 = 28.57%	<ul style="list-style-type: none"> - “Chat GPT is just more accurate than Netflix recommendations” - “I said ChatGPT because I felt like their recommendations was more accurate compared to Netflix”
Vastness of Data	2/7 = 28.57%	<ul style="list-style-type: none"> - “I believe that since Netflix does not have the capacity to recommend movies outside of what they offer on Netflix their recommendations will be biased and limited while ChatGPT has no limitations to the movies it recommends” - “ChatGPT recommends movies from all platforms whereas Netflix would only recommend the movies that they stream lessening the relevant suggestions.”
Comprehensibility	1/7 = 14.29%	<ul style="list-style-type: none"> - “It was also more concise and minimalistic rather than Netflix which made it seem like a never ending matrix.”

As seen in Table 5, from the 2 responses detailing the choice of ChatGPT over Spotify as a music recommender system, 1 participant believed ChatGPT was personalized and 1 participant believed ChatGPT was accurate. One participant expressed that ChatGPT had

personalized recommendations because they received recommendations based on their unique tastes and preferences. They expressed that the songs ChatGPT recommended were from music artists they enjoyed listening to as opposed to songs that other people enjoyed. One participant portrayed that ChatGPT’s recommendations were more accurate than Spotify.

Table 5: *Qualitative descriptions of choosing ChatGPT over Spotify as a recommender system*

Theme	Frequency (2 responses)	Examples
Personalization	1/2 = 50%	- “I would rather choose ChatGPT because the suggestions made were by my favorite artists while the ones Spotify made were not and were rather, what others who listened to the same song I liked listened to.”
Accuracy	1/2 = 50%	- “ChatGPT’s recommendation was more accurate compared to Spotify”

As seen in Table 6, from the 2 responses detailing the choice of Netflix over ChatGPT as a movie/TV show recommender system, 1 participant believed Netflix was personalized and 1 participant believed Netflix was accurate. One participant expressed that Netflix had personalized recommendations because they received recommendations based on their likes and watch times. One participant portrayed that Netflix’s recommendations were more accurate than ChatGPT because Netflix specifically targets movie recommendations and collects user data from likes and dislikes.

Table 6: *Qualitative descriptions of choosing Netflix over ChatGPT as a recommender system*

Theme	Frequency (2 responses)	Examples
Personalization	1/2 = 50%	- “Netflix has recommendations based on user likes and watch time. ChatGPT does not have this feature.”
Accuracy	1/2 = 50%	- “While ChatGPT is a more general Language AI model,

		<p>Netflix's recommender system is fine-tuned to specifically recommend movies. Additionally, Netflix collects data about how other users like or dislike shows, information that ChatGPT does not have."</p>
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As seen in Table 7, from the 7 responses detailing the choice of Spotify over ChatGPT as a movie/TV show recommender system, 6 participants believed Spotify was personalized, 2 participants believed Spotify was accurate, and 2 participants believed ChatGPT had a vast amount of data. Many participants expressed that Spotify had personalized recommendations because they enjoyed Spotify-curated playlists and received recommendations based on their unique tastes and preferences. Some participants portrayed that Spotify's recommendations were more accurate than Netflix due to its vast data network.

Table 7: *Qualitative descriptions of choosing Spotify over ChatGPT as a recommender system*

Theme	Frequency (7 responses)	Examples
Personalization	6/7 = 85.71%	<ul style="list-style-type: none"> - "i would rather choose spotify because when a song plays that is not in my playlist, i still end up liking it and i add it to my playlist" - "but Spotify would be better for music recommendations over ChatGPT (bc Spotify is more personalized)" - "I feel like it is more efficient to take recommendations from Spotify and there really is no need to employ ChatGPT because the recommendations are already accurate towards what I like and suit my music taste."



		<ul style="list-style-type: none">- “I also enjoy the made for you playlists and the catalog is easier to navigate and discover songs.”- “puts an emphasis on new music you haven't listened to before.”- “Spotify knows my likes and dislikes already, while ChatGPT does not. Also Spotify recommendations feel more personal.”
Accuracy	2/7 = 28.57%	<ul style="list-style-type: none">- “I have tried to use ChatGPT for music recommendations based on songs I like but I found that the recommendations aren't as accurate to what I was looking for. Spotify has recommended many new songs that I grew to like based on the songs I like in general so I trust its recommendations.”- “Spotify's algorithm is focused solely on music, collects data about its users to boosts its recommendations' accuracy”
Vastness of Data	2/7 = 28.57%	<ul style="list-style-type: none">- “Spotify is strictly a music app and it streams all types of music so it would be better for music recommendations.”

		<ul style="list-style-type: none"> - “I would rather use Spotify over Chat since I have been using it for almost 5 years now so it has more data.”
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Limitations

One limitation is that this study only compares ChatGPT’s recommendations with the recommendations of Netflix and Spotify. These are only two entertainment recommender systems and do not reflect the recommendations of all systems on the Internet. Finally, another limitation is that ChatGPT is an artificial intelligence model with inherent biases. According to David Rozado, a researcher of Otago Polytechnic, ChatGPT is embedded with multiple biases and does not always provide balanced, neutral responses to questions (Rozado, 2023 pg. 5). Another limitation is that ChatGPT can recommend content from the entire Internet, while ChatGPT and Spotify can only recommend content from their databases. This makes Netflix and Spotify very limited in their recommendations, and can create a slight advantage in ChatGPT’s recommendations.

Implications

The results of this study encourage new areas of research in the computer science field.. Since teenagers are one of the largest age groups using recommender systems such as Netflix and Spotify, these technology companies can use these findings to improve their entertainment recommender systems. In other words, they can implement the benefits of ChatGPT into their recommender algorithms and cater to the needs of their teenage customers.

Conclusion

Summary of Findings

To reiterate the analysis section of this research paper, high school students at ██████████ ██████████ High School acknowledged that they would rather use ChatGPT over Netflix as a movie/TV show recommender and they would rather use Spotify over ChatGPT as a music recommender. 63.5% of survey participants selected ChatGPT while 36.5% of survey respondents selected Netflix as a movie/TV show recommender. On the other hand, 71.4% of survey participants selected Spotify while 28.6% selected ChatGPT as a music recommender. This supports the findings of researchers Lui, Zhou, Lv, and Zhang who concluded that ChatGPT has (Lui et al., 2023). This also supports the findings of researchers Millecample, Htun, Jin, and Verbert who concluded that Spotify’s emphasis on personalization may seem appealing to a younger audience (Millecample et al., 2018).

Changes to Hypothesis

While high schoolers did disclose that they would prefer ChatGPT over Netflix as a movie/TV show recommender system, the fact that teenagers would prefer Spotify over ChatGPT as a music recommender system has been contrary to the original hypothesis. The initial hypothesis for this study is that high school students at ██████████ ██████████ High School would prefer ChatGPT over both Netflix and Spotify as an entertainment recommender system for all types of entertainment content. This hypothesis was made based on the belief that teenagers are proficient with utilizing ChatGPT and would enjoy utilizing it as an entertainment recommender system. However, it is evident that high schoolers saw the benefits in using

ChatGPT for movie/TV show recommendations but not more music recommendations. Participants explained that ChatGPT is better than Netflix for movie/TV show recommendations because it has more relevant recommendations suited to their taste, offers helpful commentary, and utilizes vast amounts of data. Participants also justified that Spotify is better than ChatGPT for music recommendations because it has more personalized data due to many years of usage, the song options are easier to navigate, and places an emphasis on recommending songs that users have not already listened to.

Future Research and Implications

The findings of this research project can spur more research regarding entertainment recommender systems and ChatGPT. Researchers can explore the viewpoints of other age groups, besides high school students, on ChatGPT vs. existing recommender systems to recommend content. Researchers can also further explore the capabilities of ChatGPT outside the realm of recommendations. Additionally, major technology companies, like Netflix and Spotify, utilizing entertainment recommender algorithms can learn about the wants of teenagers, who are one of the largest age groups using their recommendations. This way, they can significantly improve their recommendation algorithms and cater to the needs of their teenage users.

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Appendices

Appendix A:

Netflix Recommendation: (input: Justice League)

Recommendations (with Netflix's synopsis):

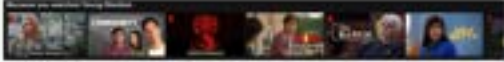
- **John Wick**: When a gangster's son steals his car and kills his dog, fearless ex-hit man John Wick takes on the entire mob to get his revenge.
- **Last in Space**: After crash-landing on an alien planet, the Robinson family fights against all odds to survive and escape. But they're surrounded by hidden dangers.
- **Troll**: When an ancient troll is awakened in a Norwegian mountain, a ragtag group of heroes must come together to try and stop it from wreaking deadly havoc.
- **Adam Project**: Time-traveling fighter pilot Adam Reed teams up with his 12-year-old self for a mission to save the future after unintentionally crash landing in 2022.
- **A Vampire in the Family**: When a fair-hearted ex-soccer player learns his brother-in-law is a vampire with world-domination plans, he must gather his courage to save the day.
- **Deliverance**: A special forces team thwarts a deadly plot in Sin City and parties accordingly. But when the real threat emerges, they must sober up to save the city.



Netflix Recommendation: (input: Young Sheldon)

Recommendations:

- **Georgie & Mandy**: Free-spirited Georgia and her two kids, Ginny and Austin, move north in search of a fresh start but find that the road to new beginnings can be bumpy.
- **Community**: When his bogus law degree is exposed, Jeff Winger goes back to college and forms a study group of outcasts.
- **Cobra Kai**: Decades after the tournament that changed their lives, the rivalry between Johnny and Daniel reignites in this sequel to the 'Karate Kid' films.
- **Shazam! Fury of the Gods**: When vengeful gods threaten to seize Shazam's powers, it's up to wisecracking Billy Batson to keep his superhero siblings together and save the world.
- **The Ranch**: Being a pro athlete didn't pan out for Colt. Now he's helping his dad and brother keep the ranch afloat, and figuring out how to fit into the family.
- **Ugly Betty**: An aspiring writer works her way up the ladder at a fashion magazine, despite her quirky wardrobe choices and doubting coworkers.



Netflix Recommendation: (input: Babripath Ki Duhania --> Bollywood film)

Recommendations:

- **Jodhaa Akbar**: In 16th-century India, what begins as a strategic alliance between a Mughal emperor and a Hindu princess becomes a genuine opportunity for true love.
- **Hum Saath-Saath Hain**: A misquipped matrimony plots of cut off her stepson and his wife from the family fortune, creating a vision within the once-happy, tightly-knit clan.
- **Dilwale**: A young couple falls in love, but conflicting loyalties drive them apart. Years later, fate intervenes and hands them a second chance.
- **Happy New Year**: A revenge-seeking diamond thief gathers a ragtag crew to infiltrate a Dubai hotel hosting a dance contest. But first they have to learn how to dance.
- **Dream Girl 2**: Karam secretly turns his female alter ego into a dancer and wins a millionaire's son in hopes of paying family debts and impressing his fiancée's father.
- **Kabhi Khushi Kabhie Gham**: Years after his father disowns his adopted brother for marrying a woman of lower social standing, a young man goes on a mission to reunite his family.





Appendix B:

ChatGPT

Certainly! If you enjoyed "Justice League," you might like other superhero movies and TV shows, as well as other films with similar themes. Here are some recommendations:

Movies:

- The Avengers (2011)** - Directed by Joss Whedon, this film brings together iconic Marvel superheroes.
- Wonder Woman (2017)** - A standalone film featuring the DC character Wonder Woman, directed by Patty Jenkins.
- Aquaman (2018)** - Directed by James Wan, this DC film explores the underwater world and the character Aquaman.
- Black Panther (2018)** - Marvel's film directed by Ryan Coogler, focusing on the character T'Challa and the fictional African nation of Wakanda.
- Logan (2017)** - A darker and more mature take on the Wolverine character from the X-Men universe.

TV Shows:

- The Flash** - Follows Barry Allen, a forensic scientist who gains super-speed and becomes the superhero known as The Flash.
- Arrow** - Chronicles the journey of Oliver Queen as he becomes the vigilante archer known as Green Arrow.
- Daredevil** - Part of the Marvel Cinematic Universe, this series follows blind lawyer Matt Murdock, who fights crime as the masked vigilante Daredevil.
- Jessica Jones** - Another Marvel series, featuring a former superhero turned private investigator with superhuman strength.
- The Boys** - A darker take on superheroes, this series explores the corrupt and commercialized world of superheroes.

These recommendations cover a mix of Marvel and DC properties, as well as varying tones and styles within the superhero genre. Enjoy your watching!



ChatGPT

If you enjoyed "Young Sheldon," a spin-off prequel to "The Big Bang Theory," you might appreciate other shows and movies with a mix of comedy and coming-of-age themes. Here are some recommendations:

TV Shows:

- The Big Bang Theory** - Since you enjoyed "Young Sheldon," you might want to watch its parent show, which focuses on the adult life of Sheldon Cooper and his group of friends.
- Malcolm in the Middle** - Follows the misadventures of a gifted but dysfunctional middle-class family with a focus on the life of the youngest son, Malcolm.
- The Goldbergs** - Set in the 1980s, this sitcom follows the Goldberg family, with a particular focus on the youngest son, Adam, who documents his family's life with his video camera.
- Wonder Years** - A classic coming-of-age series that explores the life of Kevin Arnold as he navigates adolescence in the late 1960s and early 1970s.
- Younger** - This series follows a woman in her 40s who pretends to be in her 20s to secure a job in the competitive world of publishing.

Movies:

- The Sandlot (2003)** - A nostalgic coming-of-age film about a group of kids and their adventures in baseball during the summer of 1962.
- Stand by Me (1986)** - Based on a Stephen King novella, this film follows four boys on a journey to find the body of a missing boy and explores themes of friendship and growing up.
- Ferris Bueller's Day Off (1986)** - A classic teen comedy that follows a high school student who skips school for a day of adventure in Chicago.
- The Perks of Being a Wallflower (2012)** - A coming-of-age drama based on the novel of the same name, dealing with the challenges of adolescence.
- Eighth Grade (2018)** - A modern coming-of-age film that explores the struggles and experiences of a young girl in her last week of eighth grade.

These recommendations cover a range of comedic and coming-of-age themes, similar to the tone of "Young Sheldon." Enjoy your viewing!



ChatGPT

"Badmash Ki Dulhania" is a Bollywood romantic comedy film. If you enjoyed it, you might like other Bollywood films and romantic comedies. Here are some recommendations:

Bollywood Films:

- Humpty Sharma Ki Dulhania (2014)** - A romantic comedy film starring Varun Dhawan and Alia Bhatt, with a storyline that shares some thematic elements with "Badmash Ki Dulhania."
- Dilwale Dulhania Le Jayenge (1995)** - A classic Bollywood romantic film that has become a cultural phenomenon. It stars Shah Rukh Khan and Kajol and is a must-watch for any Bollywood enthusiast.
- Z Sides (2014)** - Based on Chetan Bhagat's novel, this film tells the story of a couple from different states in India and the challenges they face in convincing their parents to approve their relationship.
- Zaburja Jodi (2018)** - A romantic comedy starring Sidharth Malhotra and Pankaj Chopra, with a unique storyline involving forced marriages in Bihar.
- Shubh Day Romance (2013)** - A contemporary take on relationships and commitment, starring Sushant Singh Rajput and Pankaj Chopra.

TV Shows:

- Yeh Rishta Kya Kehlata Hai** - A long-running Indian television series that revolves around the lives of Haathi and Mohana and their extended families.
- Ishqbaaz** - A romantic drama series that follows the lives of three brothers and their love interests.
- Kumkum Bhagya** - A popular Indian television drama that explores the love story of Abhi and Pragya.
- Kasauti Zindagi Kay** - The reboot of the classic series, this show follows the complicated love story of Anang and Prema.
- Pyar Ka Dard Hai Mitho Mitho Pyaar Pyaar** - A romantic drama series that delves into the complexities of love and relationships.

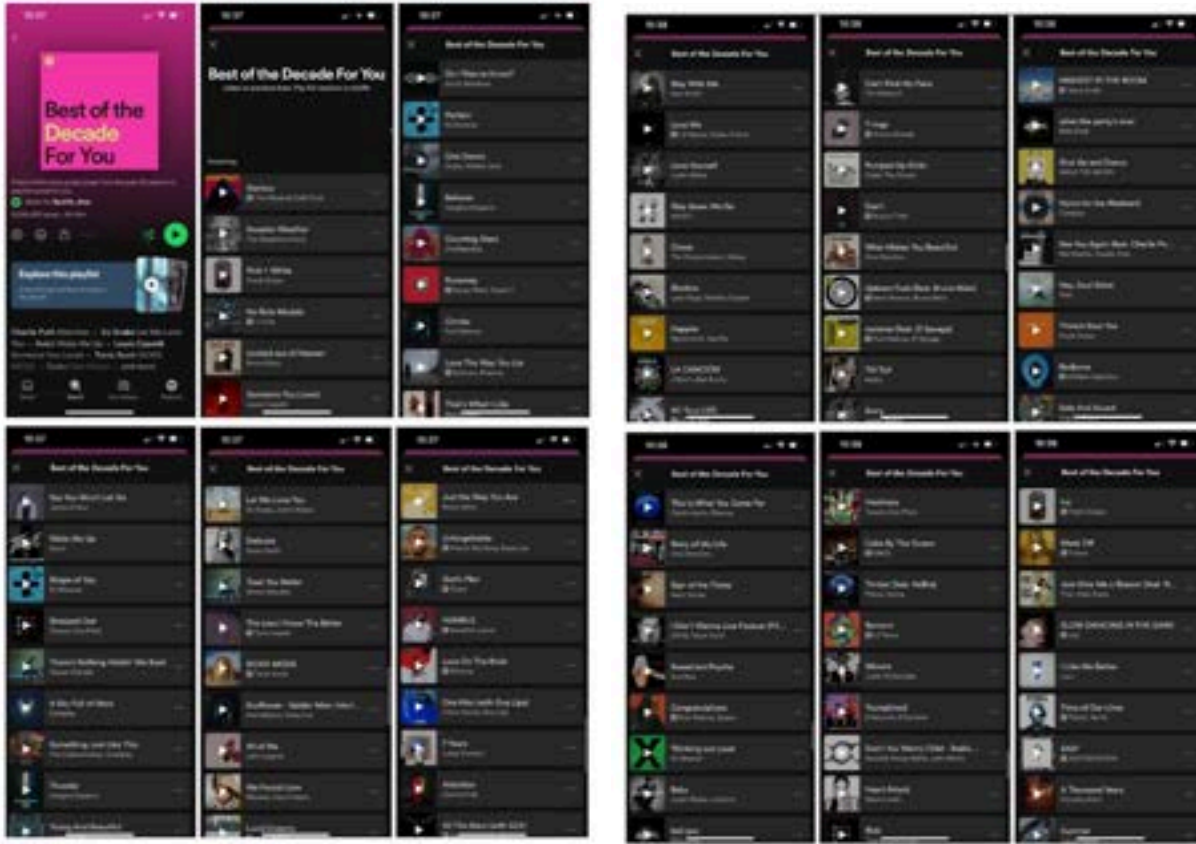
These recommendations should offer a mix of Bollywood romance and drama, similar to the themes in "Badmash Ki Dulhania." Enjoy your watching!



Appendix C:

Rate the relevance/personalization of Netflix's recommendations: *						
	1	2	3	4	5	
Not at all relevant	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Extremely relevant
Rate the variety/diversity (mix of movies & TV shows) of Netflix's recommendations: *						
	1	2	3	4	5	
Not at all diverse	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Extremely diverse
Rate the likelihood you are to watch a movie/TV Show based on Netflix's recommendations: *						
	1	2	3	4	5	
Not at all likely	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Extremely likely
Rate the relevance/personalization of ChatGPT's recommendations: *						
	1	2	3	4	5	
Not at all relevant	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Extremely relevant
Rate the variety/diversity (mix of movies & TV shows) of ChatGPT's recommendations: *						
	1	2	3	4	5	
Not at all diverse	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Extremely diverse
Rate the likelihood you are to watch a movie/TV Show based on ChatGPT's recommendations: *						
	1	2	3	4	5	
Not at all likely	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Extremely likely

Appendix D:





Appendix E:

ChatGPT

Certainly! Here's a 6-hour playlist that includes a diverse selection of songs from the artists you mentioned:

1. Taylor Swift - "Shake It Off"
2. Bad Bunny - "Dakiti" (with Jhay Cortez)
3. The Weeknd - "Starboy" (ft. Daft Punk)
4. Drake - "In My Feelings"
5. P!nk - "Just Deep"
6. Feid - "Fúteme"
7. Travis Scott - "Goosebumps" (ft. Kendrick Lamar)
8. SZA - "Love Galore" (ft. Travis Scott)
9. KAROL G - "Ahora Me Llama" (ft. Bad Bunny)
10. Lana Del Rey - "Video Games"
11. Taylor Swift - "Love Story"
12. Bad Bunny - "Soy Pele"
13. The Weeknd - "Can't Feel My Face"
14. Drake - "Nice For What"
15. P!nk - "Culpa Tuaya"
16. Feid - "Ahora"
17. Travis Scott - "Stargazing"
18. SZA - "The Weekend"
19. KAROL G - "Tusa" (ft. Nicki Minaj)
20. Lana Del Rey - "Young and Beautiful"
21. Taylor Swift - "Cardigan"
22. Bad Bunny - "Vete"
23. The Weeknd - "Blinding Lights"
24. Drake - "God's Plan"
25. P!nk - "Mr. Guttus"
26. Feid - "Perfecta" (with Justin Quiles)
27. Travis Scott - "SICK MODE"
28. SZA - "Broken Clocks"
29. KAROL G - "BICHOTA"
30. Lana Del Rey - "Blue Jeans"
31. Taylor Swift - "Delicate"
32. Bad Bunny - "La Modelo" (ft. Cardi B)
33. The Weeknd - "I Feel It Coming" (ft. Daft Punk)
34. Drake - "Hotline Bling"
35. P!nk - "To Christ"
36. Feid - "POPIA"
37. Travis Scott - "Antidote"
38. SZA - "Drew Barrymore"
39. KAROL G - "Tusa" (ft. Nicki Minaj)
40. Lana Del Rey - "Summertime Sadness" (Cedric Gervais Remix)
41. Taylor Swift - "Style"
42. Bad Bunny - "Si Vieo a Tu Mamá"
43. The Weeknd - "Save Your Tears"
44. Drake - "Started From the Bottom"
45. P!nk - "Quiero"
46. Feid - "Ayaxa"
47. Travis Scott - "Butterfly Effect"
48. SZA - "Supermodel"
49. KAROL G - "Ay Dios Mío"
50. Lana Del Rey - "Born to Die"

Feel free to shuffle the playlist for a varied listening experience. Enjoy your 6-hour musical journey!



Appendix F:

Rate the relevance/personalization of Spotify's recommendation: *						
	1	2	3	4	5	
Not at all relevant	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Extremely relevant
Rate the variety/diversity (mix of genres & artists) of Spotify's recommendation: *						
	1	2	3	4	5	
Not at all diverse	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Extremely diverse
Rate the likelihood you are to use Spotify's playlist: *						
	1	2	3	4	5	
Not at all likely	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Extremely likely
Rate the relevance/personalization of ChatGPT's playlist: *						
	1	2	3	4	5	
Not at all relevant	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Extremely relevant
Rate the variety/diversity (mix of artists/genres) of ChatGPT's playlist: *						
	1	2	3	4	5	
Not at all diverse	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Extremely diverse
Rate the likelihood you are to use ChatGPT's playlist: *						
	1	2	3	4	5	
Not at all likely	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Extremely likely



Appendix G:

On the survey, you indicated that you would choose **ChatGPT over Netflix** as a recommender system to discover movies/TV shows. *

Why would you rather choose ChatGPT? What benefits does ChatGPT have that Netflix does not?

Long answer text

On the survey, you indicated that you would choose **Spotify over ChatGPT** as a recommender system to discover new music. *

Why would you rather choose Spotify? What benefits does Spotify have that ChatGPT does not?

Long answer text



Appendix H:

On the survey, you indicated that you would choose **ChatGPT over Netflix** as a recommender system to discover movies/TV shows. *

Why would you rather choose ChatGPT? What benefits does ChatGPT have that Netflix does not?

Long answer text

On the survey, you indicated that you would choose **ChatGPT over Spotify** as a recommender system to discover new music. *

Why would you rather choose ChatGPT? What benefits does ChatGPT have that Spotify does not?

Long answer text



Appendix I:

On the survey, you indicated that you would choose **Netflix over ChatGPT** as a recommender system to discover movies/TV shows. *

Why would you rather choose Netflix? What benefits does Netflix have that ChatGPT does not?

Long answer text

On the survey, you indicated that you would choose **Spotify over ChatGPT** as a recommender system to discover new music. *

Why would you rather choose Spotify? What benefits does Spotify have that ChatGPT does not?

Long answer text