ChatGPT: Fundamentals, Applications, and Social Impacts

Introduction

- Recent improvements to language models (summarization, question answering, etc.)
- Advantages and disadvantages of language models
- OpenAl's ChatGPT
- Goal: To discuss ChatGPT and its impact on society.

ChatGPT: Fundamentals

- OpenAl released ChatGPT on November 30th, 2022.
- ChatGPT is designed and optimized for natural conversational language.
- Based on the GPT series. GPT (Generative Pre-trained Transformer) is a language model developed by OpenAI.
- Currently it uses the GPT-4 model, but this research paper discusses the GPT-3.5 version.
- Also, the ChatGPT structure uses the Transformer architecture (encoder-decoder)

ChatGPT: Fundamentals cont'd

- ChatGPT was trained with a massive amount of data, including online data, but it has limited knowledge after 2021.
- For comparison, GPT-2 was trained with billions of words from webpages, while GPT-3 was trained with a dataset of 45 TB.
- As a result GPT-3 had more layers and parameters to generate more accurate and natural-sounding conversational text.

ChatGPT: Applications

- Currently, ChatGPT is able to interpret the user's prompt and generate clear human-like text.
- Its dialogue system allows for:
 - Answering questions
 - Summarizing given text
 - Having conversations while maintaining the context from previous prompts.
- It can also identify illegal activity and refuses to answer.

ChatGPT: Applications

- Some other applications for a system that generates meaningful text:
 - Programming
 - Produce music, images, and 3D models
 - Creating plans or guidelines
 - Write blogs or essays
 - For consultation or medical advice

ChatGPT: Applications cont'd

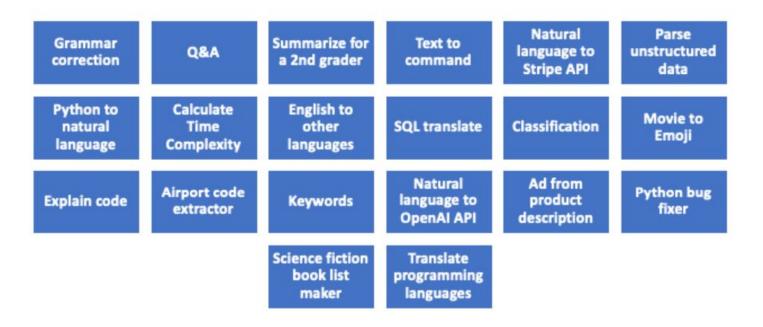


Fig. 3. Examples of ChatGPT applications

ChatGPT: Social Impact

- Due to the ongoing development of ChatGPT, it is debatable how it will impact human lives.
- However, there are have been some concerns over the misuse of ChatGPT.
- Here are some areas that ChatGPT could impact:
 - Education
 - Software Development
 - Literature and Art
 - Virtual Assistants
 - Health and Medical care

Conclusion

- ChatGPT is designed to enable human-like conversations with an artificial intelligence model. It can also provide relatively accurate results to a broad range of questions.
- While it may have some limitations like response inconsistency or gaps in knowledge, as the technology continues to improve, its impact and usefulness will also increase.

Reference:

ChatGPT: Fundamentals, Applications and Social Impacts. M. Abdullah, A. Madain and Y. Jararweh. 2022 Ninth International Conference on Social Networks Analysis, Management and Security (SNAMS). 2022.