ChatGPT

World University of Bangladesh

Presentation on

CHAT GPT

Data Warehouse and Data Mining (CSE-1011)

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Agenda

- *Introduction*
- *How Chat GPT Works*
- *Why Chat GPT*
- *Advantages*
- *Disadvantages*
- *Conclusion*

Chat Generative Pre-trained Transformer - CHAT GPT

- Chat GPT is an advanced language model based on the GPT-3.5 architecture.
- It is an AI-driven conversational interface developed by **OpenAI.**
- Chat GPT demonstrates significant progress in natural language processing (NLP) technology.

What is a CHAT GPT?

- The model has the ability to comprehend context, generate human-like responses, and engage in meaningful conversations.
- Chat GPT is trained on massive datasets to learn patterns and relationships in language.
- The future vision is to integrate Chat GPT as an indispensable tool in various domains, augmenting human capabilities and problem-solving.

How Long it Took Top Apps to hit 100M Monthly Users

How Chat GPT Works?

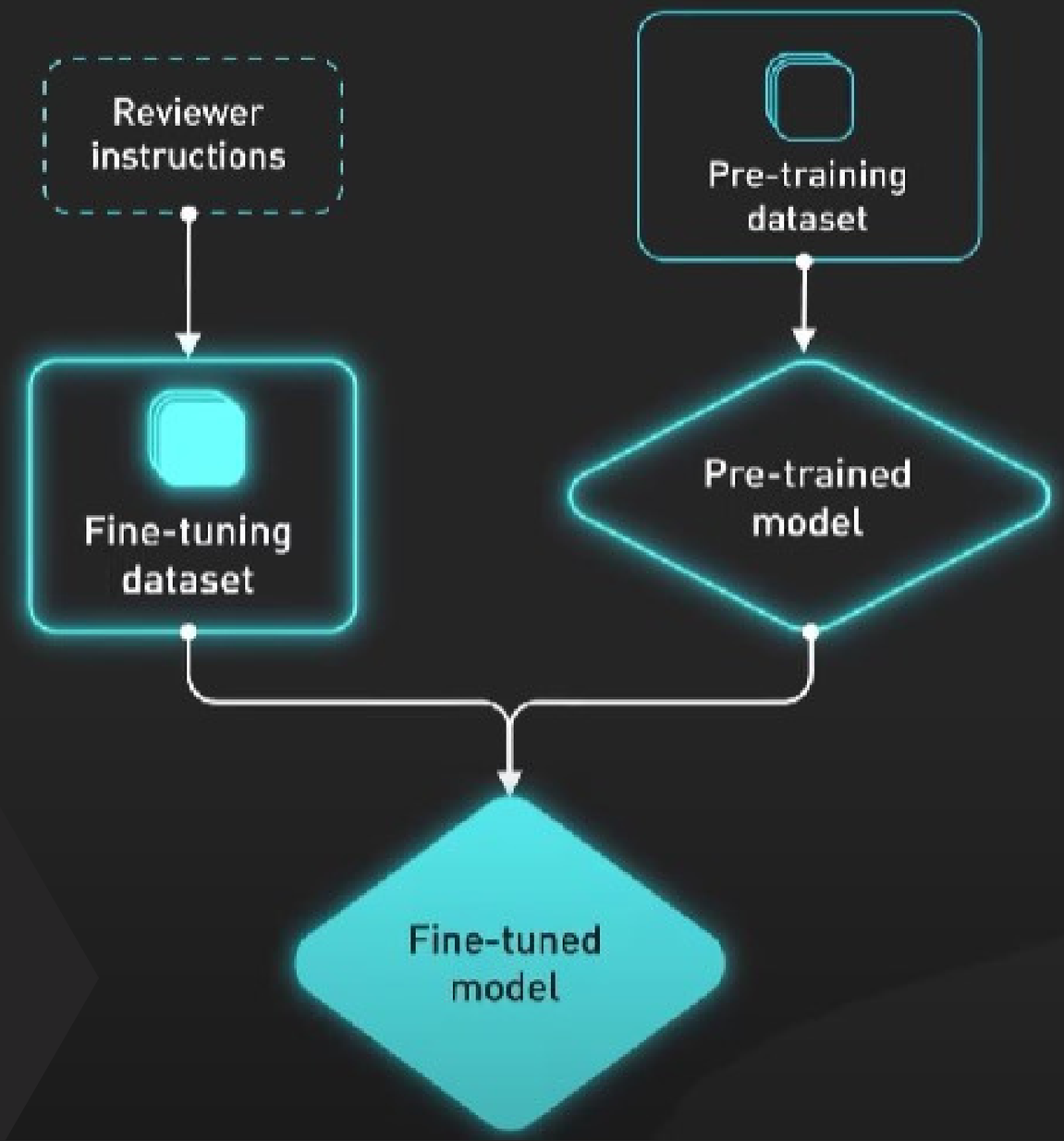
1. Transformer Architecture
   ChatGPT is built upon the transformer architecture, which was introduced in the seminal paper "Attention is All You Need" by Vaswani et al. in 2017.

2. Attention Mechanism
   The heart of the transformer architecture lies in its attention mechanism, enabling the model to weigh the importance of different words in a sentence concerning each other.

FINE TUNED MODEL

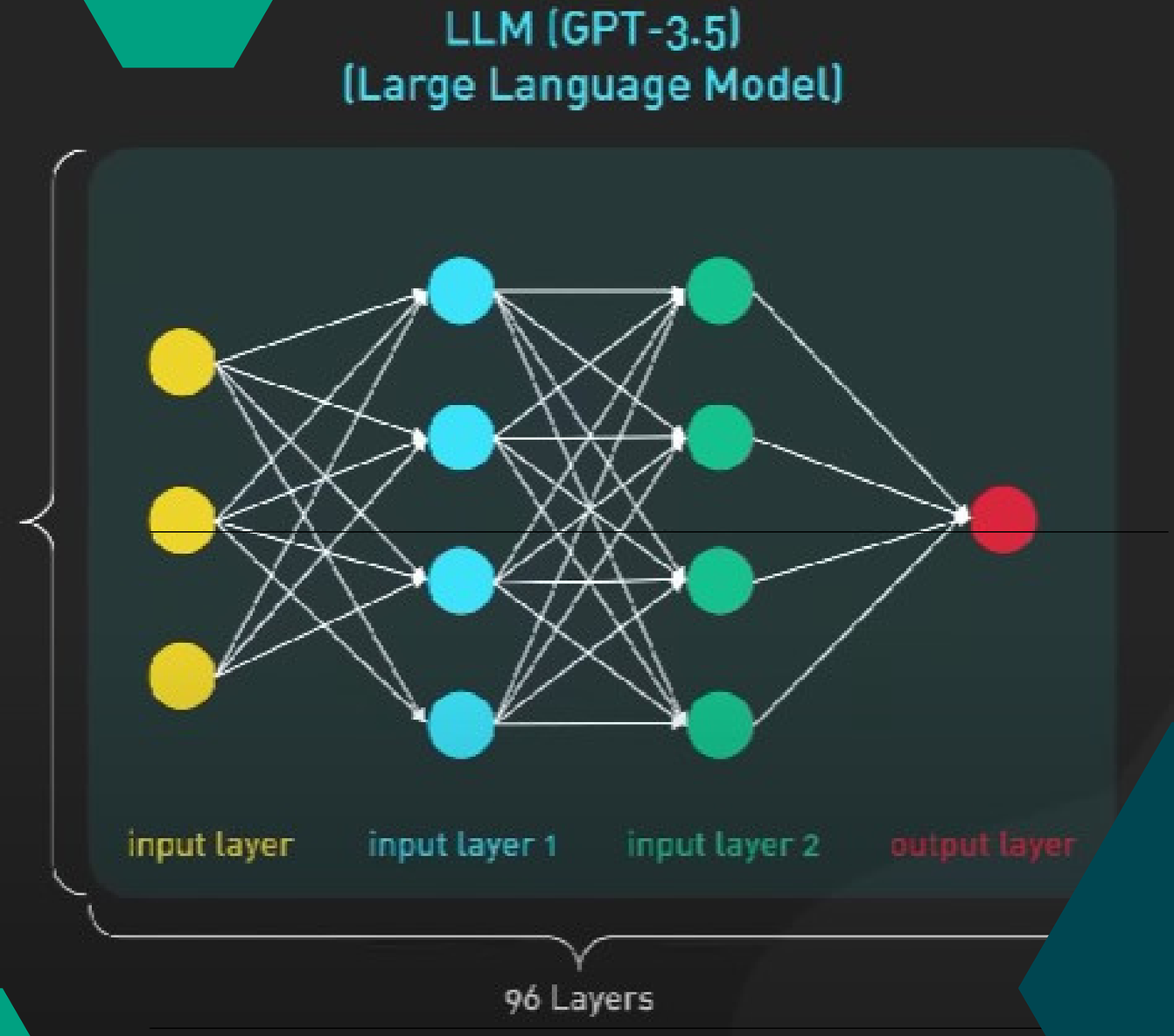
Pre-training and Fine-tuning
Like other language models, ChatGPT undergoes a two-step process:

1. pre- training
2. fine-tuning



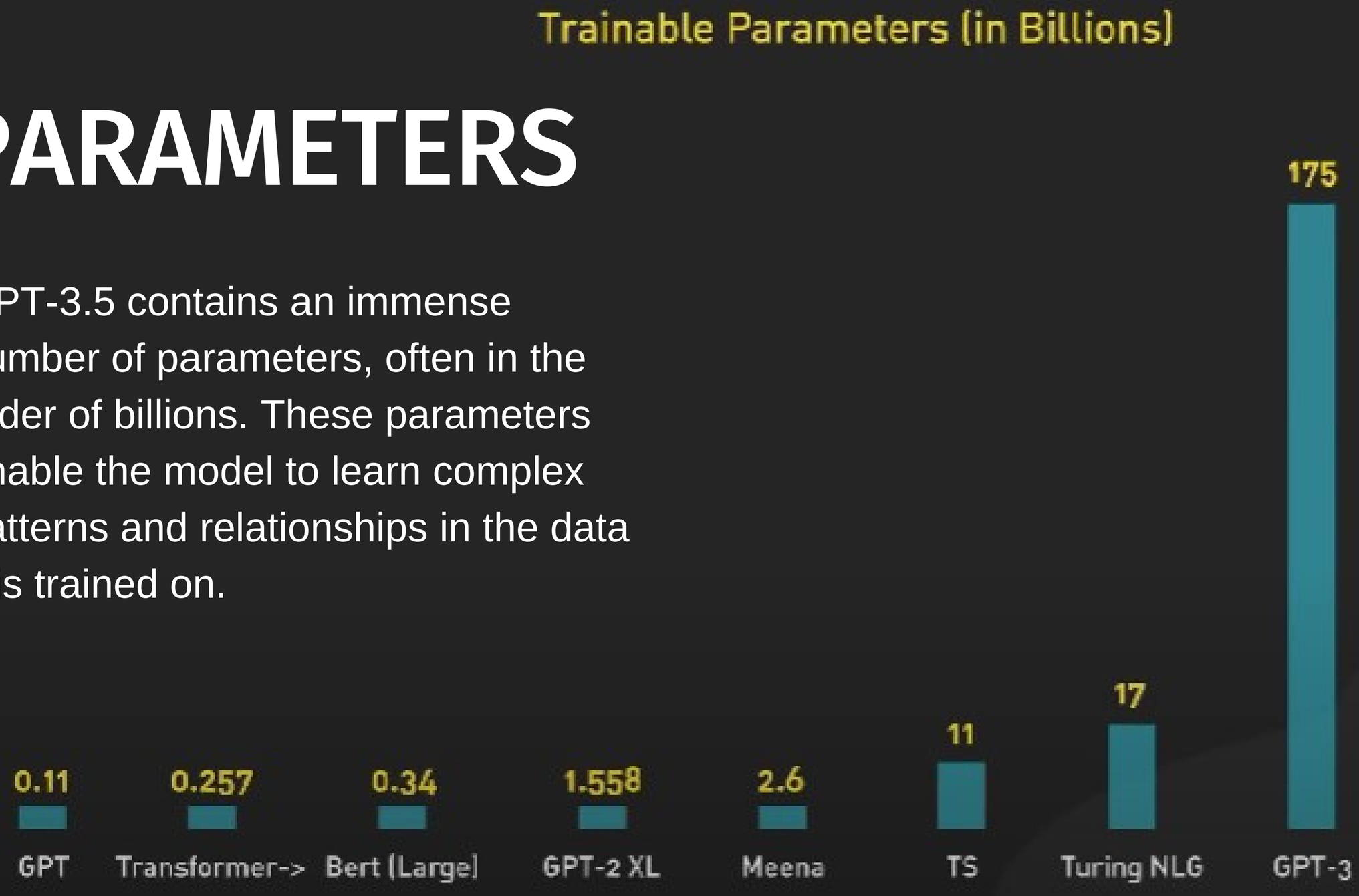
GPT-3.5 Architecture

GPT-3.5 is an advanced version of the GPT series, boasting even more parameters and enhanced performance compared to its predecessors.



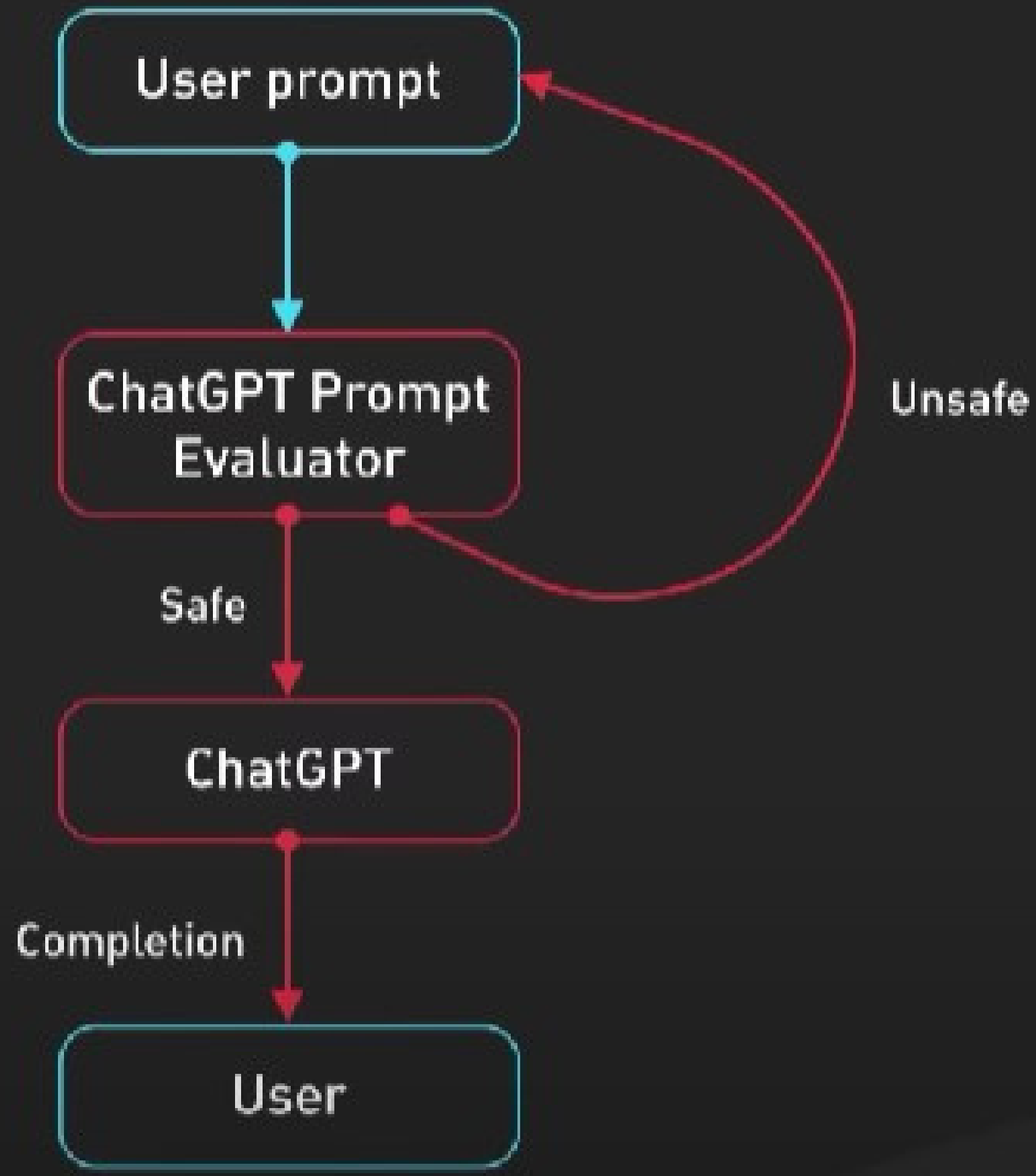
PARAMETERS

GPT-3.5 contains an immense number of parameters, often in the order of billions. These parameters enable the model to learn complex patterns and relationships in the data it is trained on.

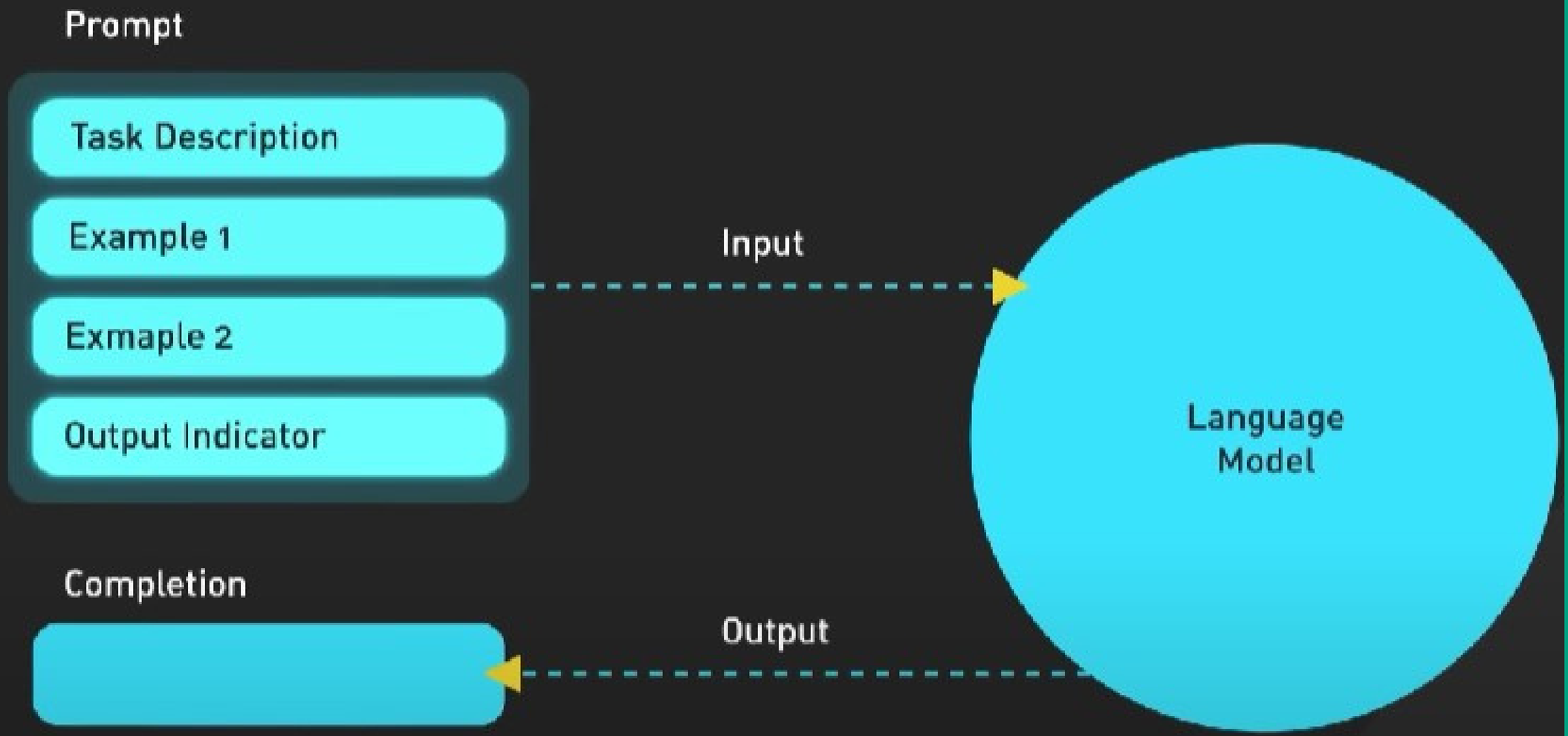


Context Sensitivity

The architecture is designed to be context-sensitive, which allows ChatGPT to consider the preceding conversation or prompt to generate coherent and relevant responses.

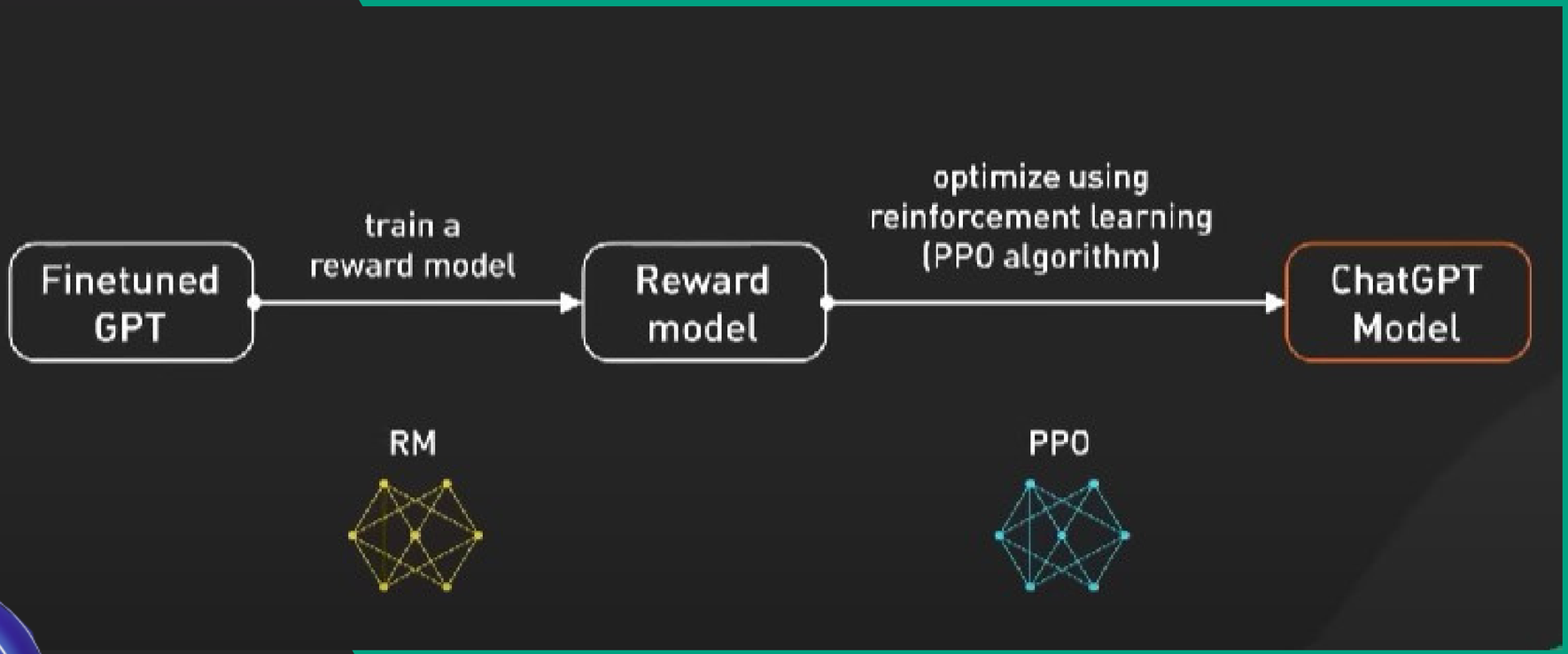


PROMPT ENGINEERING



The way prompts are designed and given to the model plays a crucial role in its responses.

MODEL OF CHAT GPT



The way CHAT GPT works

What makes it different from Siri or Alexa?

In ChatGPT, two competing neural networks –

1. A Generator
2. A Discriminator

work in competition to generate realistic-looking outputs.

As the Generator creates fake outputs, the Discriminator determines whether the outputs are real or fake. Through this back-and-forth process, the GAN can produce outputs that are indistinguishable from real-world data.

What makes it different from Siri or Alexa?

1. ChatGPT's use of GANs enables it to engage in human-like conversations and provide imaginative responses that a human might not be able to type out.

2. For example, if asked about becoming invisible, ChatGPT might reply with an imaginative response involving technologies like cloaking devices that use metamaterials to bend light and achieve invisibility from certain angles.

WHY CHAT GPT??

Natural Language Understanding

ChatGPT is designed to understand and generate human-like text, making it well-suited for chatbot applications, conversational interfaces, and text generation tasks.

Few-shot and Zero-shot Learning

ChatGPT can perform tasks with minimal examples (few-shot) or even no examples (zero-shot), which makes it more accessible and easier to implement for certain applications compared to models that require large amounts of task-specific training data.

WHY CHAT GPT??

Versatility

The versatility of Chat GPT is truly awe-inspiring. It rises to the occasion, whether it be answering straightforward queries or engaging in thought-provoking debates.

Continuous Learning

The model's ability to undergo fine-tuning allows it to continuously learn from real-world interactions, refining its responses and growing more adept with each encounter.

ADVANTAGES

Human-like Conversations

Chat GPT's architecture excels at generating human-like responses, mimicking natural conversation flow and evoking a sense of familiarity and connection in users.

Efficient Virtual Assistants

GPT can effectively function as virtual assistants, efficiently handling tasks like appointment scheduling and providing prompt responses to user inquiries.

DISADVANTAGES

Resource Intensive

Implementing and deploying Chat GPT can be resource-intensive, demanding substantial computational power and potentially limiting access for some organizations.

Potential for Bias

The risk of generating biased or inappropriate responses arises when GPT is trained on biased data or used inappropriately, making careful curation and moderation crucial in its application.

DISADVANTAGES

Ethical Considerations

As with any powerful AI tool, Chat GPT raises ethical concerns surrounding misinformation, deepfakes, and potential biases encoded within its vast training data.

Contextual Limitations

While Chat GPT shines in most scenarios, it may face challenges with understanding complex, ambiguous, or contextually nuanced queries, leading to occasional inaccuracies.

CONCLUSION

- Chat GPT represents a remarkable step forward in natural language processing and AI-driven conversational interfaces.
- It showcases the power of the GPT-3.5 architecture, demonstrating AI's potential to revolutionize human-computer interactions.
- The technology has the capacity to transform how we interact with technology, making it more intuitive and user-friendly.
- Ethical concerns must be addressed as we move forward to ensure responsible AI development.

CONCLUSION

- Continuous refinement of Chat GPT is essential to enhance accuracy, reliability, and context-awareness in responses.
- The goal is to create a user-centric AI experience that aligns with ethical guidelines and avoids perpetuating biases or spreading misinformation
- The future vision is to make AI an indispensable tool in our daily lives, helping us solve complex problems and augment human capabilities across various domains.

THANK YOU
ANY QUESTIONS?