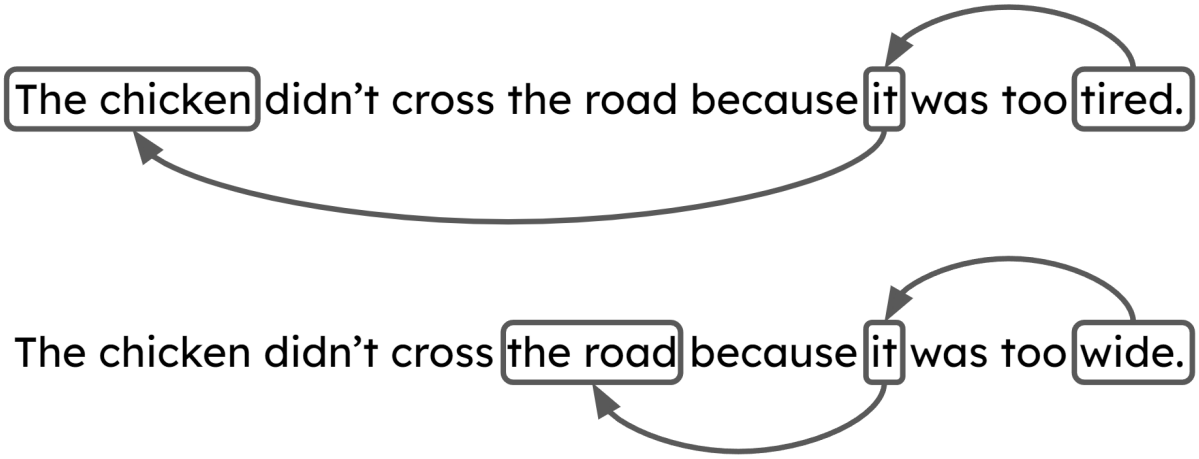
How Does AI Understand Us?

Steamlabs ChatBot tool uses a generative model from Cohere.AI similar to the one currently used by ChatGPT. This means that it is able to analyze data input by the user to generate—or create—new data and responses similar to the input. While ChatGPT scours the internet sources for similar content to reference, our generative model is told to use the information in the response list file that the user has entered as a reference to construct its answers.

It does not feed the entire conversation history to the generative model as input, just the latest text entry by the user. This keeps the generated text very close to the response list. And to make sure that the chatbot only responds with an exact response from this list, it then does a second step: It compares the text that it generated with the list of allowed responses and returns the closest match in the list.

How does the chatbot understand what you're typing? Natural language processing (NLP) is a branch of artificial intelligence that makes computers understand human language, so they can read text, interpret speech or analyze sentiment. The two main processes in NLP are natural language understanding (NLU) and natural language generation (NLG). This chatbot we are building uses a powerful machine learning tool from Cohere.ai that is able to complete a variety of natural language processing tasks, including question answering.

Not only does the AI need to understand the words, but also the relationships of those words together in a sentence, as many words can have different contextual meanings.Take a look at what we mean:



A diagram of communication between humans and machines. Source: Digital Moment

In these two example sentences, only the last word is different, but this creates very different relationships and meanings. In the first sentence, "it" refers to the animal, since the chicken is the entity that is "too tired." In the second sentence, "it" refers to the street, because the roadway is the thing that is "too wide." However, with recent advancements in deep learning and artificial intelligence, NLP is able to help the computer to comprehend the intent of a user's input.

For a deeper understanding of how NLP works, check out this breakdown by IBM's master inventor, Martin Keen.

Ethical Considerations

Chatbots are exciting tools. However, as with any new technology, there are ethical challenges and implications that must be considered to ensure that the technology is implemented in a safe and effective way. Some of the most concerning of these issues revolve around **bias**, **discrimination**, and **user safety**. If the datasets the chatbot is trained on contain hateful or discriminatory discourse, the chatbot will begin to mimic those ideas in its responses. In 2011, IBM's Watson AI began using Urban Dictionary and

Wikipedia as learning sources and quickly began incorporating the offensive slurs and swear words it was trained on. Similarly, if a chatbot is not designed to handle questions or requests related to certain topics, such as mental health or LGBTQ+ issues, it may inadvertently discriminate against users who need assistance in these areas due to its lack of knowledge.

Other issues considering **transparency**—if a chatbot should identify itself as such, and not lead you into thinking you're talking with another human—address its purpose and limitations. If a chatbot is not transparent about its identity and purpose, users may become confused or frustrated. This could lead to a breakdown in trust between the user and the chatbot, which could result in the user abandoning the interaction altogether. This ties closely to another ethical concern regarding **privacy,** where users require assurance their data isn't being collected and repurposed.

For more on this subject, take a look at Chatbot Ethical Considerations.