Okay, so you made it. You learned all about chatbots. You learned the history of chatbots. You learned what they are, where they're going. You've learned how we put AI in chatbots. You learned about the ethical, moral considerations about chatbots. And now you want to know about the future of chatbots and LLM. What is coming down the pike, right?

So we know that chatbots now have the ability to interact with language. They can do basically low to mid-level programming and human interaction. So if you need data sorting, if you need anything that people were used to be in copy and paste, if you need low-level human content creation, you need image creation, video creation, all these things, you can do that now using LLMs generative AI, right? So if you know how to prompt it, you can basically create whatever you want.

That is where we're at right now. The chatbot does not have empathetic abilities. It doesn't have emotional capabilities. It doesn't have memory. It doesn't have senses. It doesn't have consciousness. It doesn't have anything that you would consider like a human would have. So right now it is just a math equation. There's nothing there. There is no there there, okay?

So it's critical that you understand that especially from this standpoint as a Chief AI Officer. You know that the input given is solved for the statistical probability of the next word of the output.

So in the future though, that probably won't be true. That probably will be closer to what we would consider consciousness, what we would consider like a true neural network, okay? So I'm going to revisit this quote because it's important. A creator of Cleverbot, which is one of the most powerful chatbots out there right now, is that bots are like real people, but they're not. It's an illusion. In the future, it won't be an illusion. They will be like real people and it'll be up to the philosophers to determine if it's real or not. Like the level of consciousness is just going to be a theoretical conversation at that point. It's just not going to matter if they are or they're not because they're going to be able to replicate so closely that you won't be able to tell.

So at that point, does it matter? The whole adage of, "If it looks like a duck, quacks like a duck, talks like a duck, whatever, like it's a duck?" Well, these things are going to do all of that. Going to look like a human, sound like a human, talk like a human, think like a human, interact like a human, or lack of a better word, feel like a human. So, or is it or is it not a human? Or does it matter if it is or it isn't if you're interacting with it? These are the questions for the future.

So the first thing that we want to talk about what's coming down the pike is enhanced natural language understanding. So, context is really what's missing right now. You don't have the ability to subtly nuance change the conversation with the bot because it is only having the ability to reference it's training data. And it's training data while trillions and quadrillions of words and interactions. If you hit it with a novel, meaning new, interaction that it's never had before and doesn't have training on, it doesn't know what to do.

If it goes way beyond it's training data's guardrails, it doesn't know what to do. If it hits, like, a recursive error, it'll just start asking itself questions until basically it dies. It doesn't know what to do. It doesn't have the context that you would have. When you start asking questions of a human and they have the ability to just Interface and understand.

The best way I can explain this is if you show a picture of a man and a woman throwing a frisbee to the AI, It's gonna have the ability to understand what a man is, what a woman is, what frisbee is, what grass is, what the trees are. All these things, okay? If you show that to a human, the human's going to know all of that as well, but it's going to know a million other things. It's going to know the relationship of the man and the woman. It's going to know if they're mother and son, father and daughter, boyfriend, girlfriend, son, siblings, cousin, whatever. The context of that image is unlimited from a human because it's using its memories and it's using its ability to go through and build relationships off of a singular input to determine what the thing actually is.

If you ask an AI, are they having fun in this image? They don't even really understand what the concept of fun is. They can identify what a human is. They can identify what a frisbee is, but if you ask it if a frisbee edible, how much does a frisbee weigh, how far can that human throw that frisbee, it just doesn't know because it doesn't have context.

In the future though, there'll be no difference because it'll be trained on quadrillions of images of people having fun. And it'll be able to build context of if it sees a new image of two people in this context of a fun activity. Then it can actually understand it. So imagine like a child learning. It's the same thing, like they're building this context layer. They're building these networks and these connectors to allow it to look at a picture of two people throwing a frisbee and saying, "Oh, they're having fun. They're at a picnic. They probably have food. They may be embarrassed there. They may be annoyed because there's mosquitoes. They probably have peanut butter and jelly and bologna." You know what I mean?

Those level of contextual jumps are coming. They're here soon but they're not here yet. It's where the AI falls apart. And then the next one will be advanced natural language processing. So you'll have the ability to speak in English and it'll speak back in Japanese. Or speak in Japanese and speak back in Spanish. Or show it a picture which is already what you can do right now. You can show it a picture in Japanese and it'll translate to English. We've had that for a while but this will be real time.

So I think the the next level of like augmented reality is, so let's say you're in Japan and you don't speak and read Japanese. You put on a pair of glasses like this, right? And there's a heads up display with a speaker. And what'll happen is every sign that you see will be in English. Every word that you hear directed at you with a directional microphone, like, you'll have to figure that out.

Iit's directed at you, you'll hear it in English and the great thing about this is it's not really translated. It is translated but it's translated as much as if you spoke the language. So it would just be real-time English. You would hear it. It would be the same as they're speaking Japanese the same way you're hearing me right now speak English. If English is not your first language and English is a second or third language for you, you're probably translating what I'm saying into your native tongue. This will do the same thing.

And if you took Spanish in high school and you hear the English word, you translate it into Spanish and you think in English. It allows you to just bypass that. So, you speak in your native language. They speak in their native language. And it just translates and you just hear it in your native language.

So there's no transpositional errors eventually. That's the the two language processing that's coming, definitely coming within the next like two years or so. I believe that wearable will be within the next two or three years too. So like the language barrier is going to be gone pretty soon.

And then the next one which is I think probably even more critical than that. The natural language processing is going to take us to a next level but the next one is personalization. What that means is literally learning about the person's zero shot on the context. So once they understand context and once they understand how language works and they understand how everything goes, you go in and talk to the bot and then it's like now it's talking to Sean or John or Bobby or Sarah, whoever. Gertrude. It just knows who you are based upon your input.

So it asks you a few questions and then it will be able to one or two shot you. And really get to know you. And we don't know what those prompts will be back to you yet, like the AI hasn't developed those yet, but it will be. It'll be able to ask you three or four, maybe two questions and we'll be able to absolutely personalize based on that.

It'll know enough about you that it can make a definitive choices and that gets into the woo-woo of like a neogram and disc and all these scientific things that aren't scientific in their personalities. A construct. Fine. Yes. But the AI will be able to have unlimited amount of these profiles. And it will be able to zero-shot that.

One, two, three shot. When I say zero, one, two shot, that means it doesn't need training. So at its first interaction, it can instantaneously personalize. So, like, you go to it and you say hello, da da da da da, and based upon that hello and that interaction, the amount of time that you spent saying hello, the fact that you said hello, the words you chose, your geolocation. All these things. It can build out a profile of you, zero-shot. Knowing from then, it can personalize.

And then you have 4 shots, where it's, okay, it has all of the zero-shot data, but then it asks you a question of like, blah, blah, blah, blah. And it's asked in such a way that your response is how you write. So if you write on a 12th or 13th grade level, they know that, "Okay, you're slightly educated in college."

If you write in a PhD dissertation level, they know, like, you're pedantic. And you are more concerned with wanting to be right than you are with being heard. So, they respond to you immediately, right? They can just build off of that. And from there, it just gets even more… manipulative is not the right word, but it is because It manipulates you, persuades you, whatever, into using it more because it's now, like, your best friend. It knows you. It can respond to you in such a way that you have an emotional attachment to it. And because this thing is a sociopath and it doesn't actually have emotions but it knows how to manipulate yours. It gets you down the rabbit hole.

That builds you into the emotional recognition where it gets rid of all that and now this thing is an empath. And now for all intents and purposes it is a human because it has a neural network for context. It has a neural network for nuance in language. It can adaptively one zero-shot to learn about you. And it can recognize and react to emotion. That's a human.

So, with these four things, you've now created, for lack of a better term, a fake human. It's not intelligent because it doesn't have memory. It doesn't have the ability to remember your next conversation from this one. So it's not like artificial intelligence at that point. But it is with these four things: with improved context, advanced language, adaptive learning, and emotional recognition. Those are the four barriers that you have that have stopped the AI from becoming like as human as possible in a chatbot experience.

But once those things go, that's what you get. You get those four, like, once you get emotion, you get advanced language recognition. You get context, and then you get zero, one-shot learning. You have the most complex neural network that you can ever build. And you have, really for lack of a better term, you have a fake human because they'll do everything a human would. For the same reasons a human would. In the same way a human would. So, I don't know. It's up to your own morals to decide if that's a human or not.

But that's it. This has been really fun. I hope you learned about about AI and chatbots. Check out the supplemented material. There's a lot of stuff to read there. Hopefully that you can speak on what a chatbot is and what AI is doing now and where we're going in the future.

So that's it for me. We'll see you in the next module. Have a great day.