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UX Considerations for AI-Enabled Products

Gavin Lew*

Department of Information Technology, Columbia University, San Diego, United States

INTRODUCTION

The world is abuzz about Artificial Intelligence (AI). AI-enabled applications are springing up like wildflowers, appearing as virtual assistants and deep learning algorithms that analyze content to possibly replicate what clinicians recommend for treatment. The opportunity to new answer questions defines the power and intrigue of AI. But its potential is dependent upon having technology work [1]. And to be clear, by work, means what AI outputs is both accurate and humans can act upon the insight efficiently.

DESCRIPTION

As entertaining as the discussion around the nuts and bolts of AI might be, let's assume the code works [2]. This places the focus on what AI needs to do to become more functional and more accepted by the intended users. As it stands now, technology (including some of the advances in AI) seems to be advancing simply because developers want to see if they could build it they want to see what would AI can do. As healthcare practitioners, what we want is meaningful advancements in AI that deliver benefit that brings forward insight to improve health outcomes. But, we have to use the AI-enabled system for it to be successful [3]. Here are three considerations that we believe AI needs to be successful.

Context

At its core, AI is based on pattern-recognition. Once AI learns a pattern, it can make predictions about outcomes of similar patterns. However, while we're giving AI the raw data it needs to recognize patterns, we're not giving it the context in which to make good decisions. Our take on this is that we are doing a disservice to AI by not giving it the proper context.

An example of this is IBM Watson health. Then suggested treatments for various cancer types all over the world [4]. It was able to suggest the correct treatment for lung cancer over 96% of the time in India. Everyone patted themselves on the back because AI could predict what oncologists suggested. However, in South Korea, it was only correct 49% when suggesting treatments for gastric cancer. Why because South Korea's treatments for gastric cancer aren't in line with Sloan Kettering's recommended treatments. Suddenly, AI failed.

A different perspective would be to not ask how AI can predict but look at the differential. AI becomes one of many voices. Perhaps as a team, oncologists can work with what AI found to understand how to improve treatment. The argument here is that Watson lacked the context and should not be identified as mimicking oncologists, but instead, uncovering why differences exist in treatment and looking to improve health outcomes [5]. When we build AI tech, there are three stages where context must be considered.

Before it's built: Beyond uncovering the user need that the tech will address, we must make sure that the context in which it will be used gets into the AI process. This will ensure we collect the right data.

During: When the data goes in, it must have context. For example, if you are collecting data on behavior in a car compared to a bedroom or kitchen, it's clear that the context would be important.

Using the collected data: Currently, AI is a 'black box'-you throw in data and see what comes out. But the user must use AI to do something. If we take a user-centered design approach to how the insight might be used, this is when we will really see how powerful AI can be [6].

The potential for AI is astounding and it will likely be one of the defining technologies of the 21st century. However, AI is only going to be as good as the data and information that we feed to it. By providing AI with the proper context for it to advance properly, we are helping to ensure that AI is delivering on its promise of simplifying life for the end users.

Interaction

Our understanding of user interactions with AI is still developing. How is someone supposed to use AI? is "use" even the right term when it comes to AI? once it is fully realized, a complex AI system will intertwine the systems of a home, car, office, appliances and personal tech gadgets, all talking to each other and exchanging information without the user having to actively do anything [7].

Think ahead to the future where you have your own personal AI. Our interactions with AI may consist of nothing more than an offhand comment, essentially interacting with the AI without knowing that we're doing so. For example, when I'm making breakfast and mutter to myself, "almost out of milk," a strong AI will know to remind me at an appropriate time to buy milk. or maybe it will just take the initiative and order me a gallon of milk from the automated grocery service in my area and there will be a milk delivery timed for when I get home from work. Or maybe I don't need to state that I'm out of milk for the AI to act. Perhaps finishing the gallon of milk is my passive interaction and the AI figures out what the next logical step is by ordering automatically [8].

CONCLUSION

Once AI has the three components of context, interaction and trust, it will be much easier for it to hit the mainstream and be the runaway success that futurists predict it will be. Even if the above three pillars are never fully recognized, to truly deliver on the promise of AI to the end users, the developers of AI systems need to keep the end users in mind since the AI is ultimately being created to benefit them.

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