Chatbots: a brief introduction

Perhaps the most visible by-product of A.I. has been the chatterbot or chatbot (a computer program capable of having a conversation, the idea pioneered by Eliza). In 1990 A.I. philanthropist Hugh Loebner and the Cambridge Center for Behavioral Studies in Boston launched a yearly prize to be awarded to the chatbot that went closer to passing the Turing Test. Competitors have included: Joseph Weintraub's PC Therapist (originally written in 1986), a variation on Joe Weizenbaum's Eliza; Michail Mauldin's Julia (1994), by the founder of Lycos; Richard Wallace's Alice (Artificial Linguistic Internet Computer Entity), originally developed in 1995; Rollo Carpenter's Jabberwacky (1997); Robby Garner's Albert One (winner in 1998); Bruce Wilcox's Suzette (2009), first of a dynasty of chatbots; and Steve Worswick's Mitsuku (unveiled in 2013). SmarterChild, the first commercial chatbot, was launched in 2000 by a New York firm, ActiveBuddy, and was used at one time or another by millions of people. None of these was particularly useful. Nor intelligent enough to have a real conversation, but perhaps more fun than playing the game card solitaire. Again, one has to wonder what is the I.Q. of the Loebner Prize judges who are fooled by these chatbots. Then came the generation of Apple Siri (2011), Google Now (2012), Microsoft Xiaoice (2014) and Amazon Alexa (2014) that tried to be useful, not particularly intelligent, thanks to much progress in speech recognition; all the way to the hyper-realistic "human" chatbots made by New Zealand-based startup Soul Machines (the brainchild of Mark Sagar, a former Hollywood animation engineer), starting with "Baby X" (2014). In 2016 Eugenia Kuyda and Philip Dudchuk released the "memorial chatbot" Replika that learns a person's style of chat and can replicate it even when the person is dead. In 2017 the Stanford psychologist Alison Darcy unveiled Woebot, a therapy chatbot for depression and anxiety.

It has certainly become easier to create chatbots. I would rather call them "conversational user interfaces" in which some very limited linguistic skills replace the traditional interaction via menus or touch-screens.

There are now scripting languages such as Artificial Intelligence Markup Language or AIML (Richard Wallace, 1995) and ChatScript (Bruce Wilcox, 2011); corporate (and sometimes open-source) natural language processing (NLP) tools such as Speaktoit, later renamed API.ai (Ilya Gelfenbeyn, 2014, acquired by Google in 2016), Wit.ai (Alexandre Lebrun, acquired by Facebook in 2015), Microsoft's Language Understanding Intelligent Service or LUIS (2015) and Amazon Lex (2017), the technology powering Amazon's virtual assistant Alexa; and free platforms such as Pandorabots (Kevin Fujii & Richard Wallace, largest installed base of chatbots, 2008), Rebot.me (Ferid Movsumov and Salih Pehlivan, 2014) and Imperson (Disney Accelerator, 2015). The advent of conversational user interfaces may or may not be an improvement over previous methods of interaction. I personally think that the old command line of Unix and DOS was not such a bad idea: i used to get things done quickly and efficiently.