

The Secret to Not Letting a Machine Steal Your Job



Robotic equipment moves the shell of a Honda vehicle along an assembly line at a Honda manufacturing plant in Alliston, Ontario. REUTERS/FRED THORNHILL

TOM DAVENPORT: Many really smart people—Bill Gates, [Elon Musk](#), [Stephen Hawking](#) and Steve Wozniak, to name a few—are concerned about the future impact of artificially intelligent machines on jobs.

Their fears are certainly not groundless.

Smart machines have the potential not only to automate structured jobs involving moderate expertise, but also high-end knowledge work jobs like those of physicians, lawyers, marketers, financial advisers and teachers. [IBM](#)'s Watson has shown that virtually any specific problem—from “Jeopardy!” to recipe creation—can be solved quickly and well by a computer.

Unless individuals and organizations respond, it's likely that large numbers of well-paying jobs will cease to exist at some point. Now is the time to begin thinking about alternatives to automation. Specifically, individuals and organizations need to begin to address *augmentation*—how humans can augment the work of smart machines, and vice versa. There has been little

thought devoted to this issue thus far; work has been treated as something that can be done by computers or people, but not both.

There is plenty of worrisome news for humans as computers become ever smarter, but there is good news and opportunity as well. For example, computers are smart, but they are smart in narrow domains of expertise. If you need big-picture thinking about how the world is changing and how your business fits into it, humans are still the best (indeed only) bet. Computers are great at codified, logical knowledge, but not so good at understanding irrationality. In investing, for example, this means that humans will be needed for a while. Computer systems aren't good at comparing themselves to other systems and declaring themselves unworthy of a task, so humans will have to do that for the foreseeable future as well.

Augmentation means designing work so that computers and people can address each other's strengths and weaknesses. In recommending optimal financial portfolios for individual investors, it's hard to beat a computer. But persuading investors to stop buying high and selling low is a human activity. In law, digesting documents to determine their relevance to a case is increasingly the realm of e-discovery software. But big-picture thinking about how those documents fit into a case strategy is the hallmark of a good attorney.

Individuals need to plan now for careers that don't overlap too much with computers, but do complement them. Are you going to emphasize a skill that computers are unlikely to possess, or work closely with them to monitor and improve their decisions? Are you going to emphasize big-picture thinking, or thinking that is so narrow and specialized that it's unlikely to be targeted by any programmer or entrepreneur? It takes time and energy to successfully augment these smart machines, and given the rate at which the machines are improving at their jobs, we have no time to waste.

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