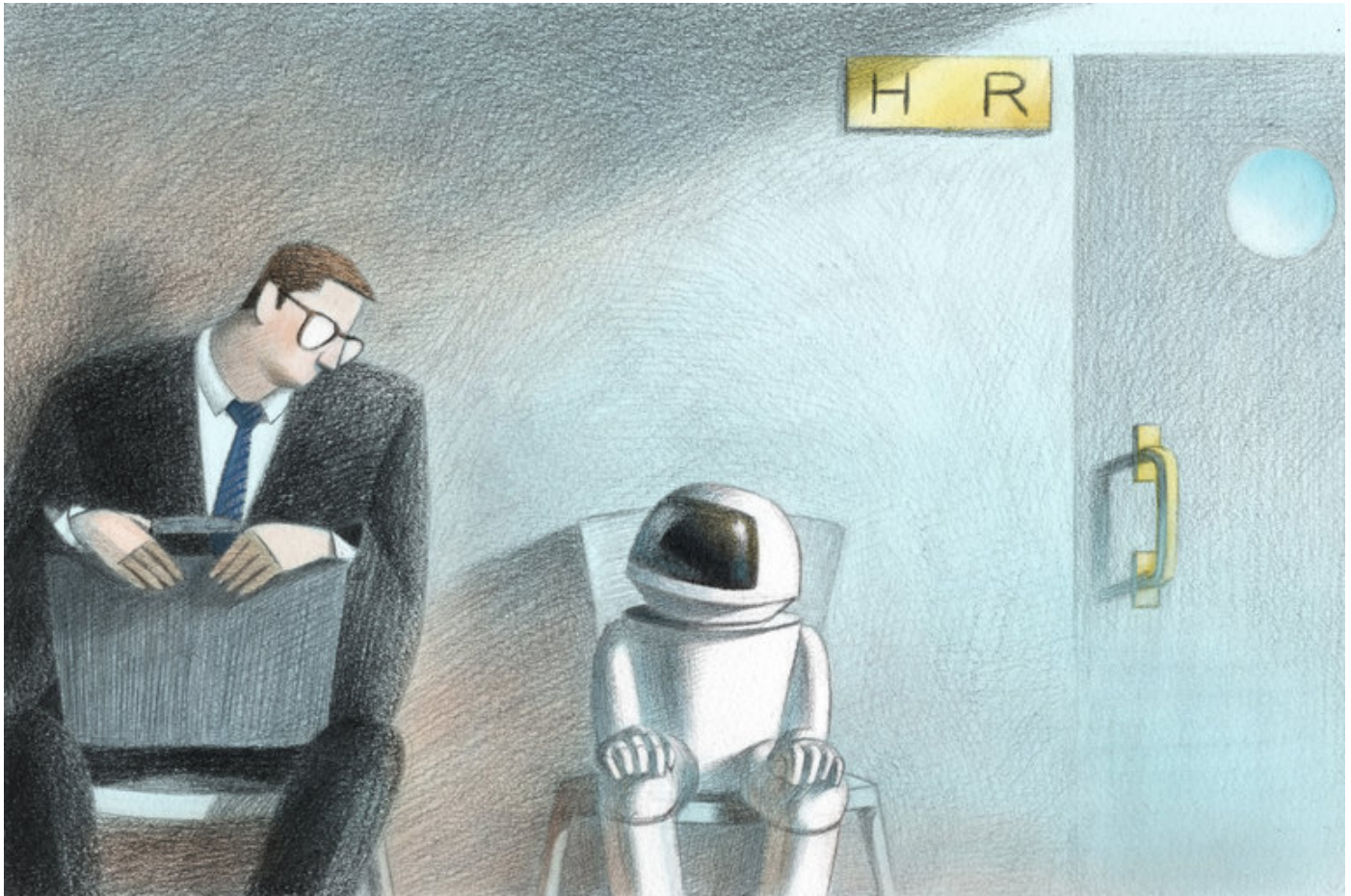


## A Robot May Be Training to Do Your Job. Don't Panic.



Amy Su

In my speaking engagements, when I mention the terms “the future of work” and “automation” in the same sentence, I often see the audience squirm. People’s worst fear is that their job will soon be taken over by the equivalent of [Rosie the Robot](#) from “The Jetsons.” But even though we’re only in the beginning stages of work force automation, I’m optimistic about the effect it will have on human workers.

Over the last two decades, machines have indeed usurped many human jobs in industries like manufacturing, hospitality, transportation and customer service. But here’s what I find interesting: We hang our hats on the idea that there are certain professions, such as teaching and caregiving, in which humans could never be replaced by robots because of the level of personal interaction required.

But according to Richard Yonck, executive director and analyst for [Intelligent Future](#)

[Consulting](#) and author of the forthcoming book "[Heart of the Machine: Our Future in a World of Artificial Emotional Intelligence](#)," we should never say never.

"Starting in the mid-'00s, due to better computer hardware and algorithms, we made some major leaps forward in deep learning," he said in an interview. "As a result, we're now developing emotional computing and software programs that are aware of our moods and intentions and are able to respond accordingly."

For example, I might be fuming at my desk, punching out an irate email to an inconsiderate client. Through text analysis or facial expression recognition, a program on my laptop could identify the high level of emotion, understand what's about to happen, and warn me to take a breather before I send something I'll regret.

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Emotion recognition software is making waves in education, too. Researchers from [North Carolina State University](#) showed that software that tracks facial expressions can accurately assess the emotions of students engaged in interactive online learning, then predict the effectiveness of online tutoring sessions. The researchers' program, JavaTutor, responds not only to what a student knows, but to each student's feelings of frustration or engagement, just as a human teacher would.

Affective computing and emotional awareness in software are likely to come into common use sooner than in robotics. So can we stop worrying that humanoid robots will take our jobs as, let's say, health workers?

Not necessarily. In Japan, the rapidly aging population and shrinking work force have led to significant advances in social robotics. [Riken and Sumitomo Riko Company](#) have released Robear, a nursing robot that looks like a tall, white bear and can lift patients out of bed and help them move. Strong, gentle and nonthreatening, Robear can converse and interact with patients on a rudimentary level.

Then, there's [Jibo](#), which, at 11 inches tall, is used mostly in the home — for now. Jibo, designed at M.I.T., uses speech and facial recognition, and natural language processing, to learn from its interactions with people. This little guy is on my wish list. I can't wait for it to suggest what I should have for dinner and take video of my child's birthday party without being prompted. I'm sure I'll get mad at it sometimes, but we'll make up as soon as I see its movements mimicking human sadness. Maybe I'll be the first person to hire

Jibo as a garden-variety junior staff member.

Realistically, these technologies have far to go. For an idea of how long it might be before social robots can do your job, look at Microsoft Windows' personal assistant Clippy. It took 25 years for that irritating paper clip to evolve to the current [Cortana](#), a more intelligent personal assistant that helps you find things on your machine, manages your schedule and tells jokes that it knows you'll find funny.

The widespread adoption of social robotics in the workplace faces a host of potential problems, including a lack of infrastructure and power requirements, deficient awareness of surroundings, and public resistance. Eventually, though, the moment will come when machines possess empathy, the ability to innovate and other traits we perceive as uniquely human. What then? How will we sustain our own career relevance?

I think the only way forward is to look at artificial intelligence developments as an opportunity rather than a threat. We need the mind-set that success is no longer about our level of knowledge but about our level of creative intelligence. If we accept the process of lifelong learning, in which we adapt to new ways of working as technology improves, we'll always find roles that take advantage of our best qualities.

Maybe I'm overly optimistic, but I also believe that behind every highly intelligent machine will be humans who help build it, train it, distribute it, advise it and repair it when things go wrong. And until (unless?) machines acquire consciousness, they'll have trouble mastering the most complex aspects of human behavior — many of which we still don't understand. I can't, for example, imagine a machine that, without human guidance or input, knows the perfect way to motivate a team of disparate human personalities that has just received bad news.

Mr. Yonck agrees. "Social robots will interact with people, not just replace them," he said. "Human and machine will partner to provide products and services in ways we haven't before — each providing its own strengths."

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Personally, I look forward to the day when my work-from-home job isn't quite so lonely because Jibo is keeping me company.