



Pragmatic Robotics: How Will Robots Really Influence The Workplace?

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Forbes Blog Article: Pragmatic Robotics: How Will Robots Really Influence The Workplace?

The robots are coming — rolling into our world on a road paved with pragmatism.

Working in the field of robotics, I'm often asked by friends about some approaching apocalypse when mechanical beings — somewhere between the joy of R2D2 and the horror of HAL 9000 — will change our lives.

When I instead describe autonomous floor polishers (which my company helps create), warehouse stock pickers, self-driving factory floor supply carts and automated agricultural machines, they tend to yawn and change the subject to golf or football. And that's a good thing. I expect that robotics will change workplace environments in mundane — but exceedingly helpful — ways.

What will these millions of robots be doing? They'll probably be making life easier for the humans they are working with. Whether they're working within a warehouse, retail space, hospital or the home, manufacturers are designing robots to work alongside humans, as well as on their own, to perform chores that could otherwise be onerous or that might simply go undone. In our current booming markets, when unemployment is at record lows and hiring is becoming ever more challenging, I expect the robots will be doing jobs that in many cases defy hiring.

This isn't to say they will be displacing workers but that workers can monitor their progress while attending to other chores that robots simply aren't up to.

You could say that the robots are coming, so how might businesses adopt them?

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capabilities to the tools they already work with.

Will we really see millions of robots in 50,000 warehouses (and far beyond) as soon as 2025?

I think so, because of some basic observations that have emerged from my own experience in the field about what makes robots so promising and how robotics manufacturers can help their products succeed.

- They should meet real needs. For example, companies like 6River Systems and inVia create robots for warehouse work and e-commerce solutions. Badger builds robots that can scan retail shelves to assess inventory needs. Savioke creates secure delivery robots for use in hospitals and hotels, and SoftBank Robotics builds humanoid robots to serve as assistants to humans across a range of environments, including in schools as educational assistants and in the field of hospitality. (Full disclosure: My company invested in Savioke's Series B, and SoftBank Robotics is one of my company's robotic technology partners.)
- The systems should be easy to use. Because autonomous devices are
 generally deployed to perform mundane tasks that can defy human hiring,
 there can be large turnover even for the workers who oversee their
 operations. This is why systems should focus on clear and simple user
 interfaces like in the examples above that require little or no training to use.
- The systems are safe and work alongside humans. We aren't speaking of self-driving cars whizzing by at 60 miles per hour here, but cautiously moving autonomous devices with multiple sensors, collision detectors that tell the robot to instantly stop and wait, and other safety features that allow autonomous robots to operate safely including robots like Amazon's that work alongside human workers, not just after closing. Nuro, with their last-mile delivery of groceries and local goods, is a great example of how robots can work with us to help to make our lives easier. Some writers speak in terms of humans working closely with robots in the same way that humandog teams handle tasks like hunting and bomb detection.
- Robotic systems should be designed to help. Existential fears of robots
 fade away when an autonomous device can work beside a human and
 make their job easier. A robust and growing ecosystem of robotic
 manufacturers are creating devices to help across a spectrum of use
 cases. The greater the degree to which manufacturers can use these robots

to make life easier for the humans working alongside them, the greater the public's acceptance and demand for more is likely to be.

Looking ahead, perhaps the greatest challenge facing robotic manufacturers today to make this happen is the need to use multiple sensors (270 LiDAR, 3D time-of-flight cameras and so on) to achieve greater "vision" and enhance the ways in which they can safely operate in more complex uses and environments. Using multiple sensors will drive up the cost and complexity of manufacturing and employing robots. I believe we need to see more innovation with embedded vision sensor products.

It's been interesting for me to follow the unexpected and pragmatic path on which robotics are rolling into our lives. I dream that maybe someday we'll have R2D2s around to cheer us through the day. I expect that at some point, we'll be talking to Alexa, Siri or R2D2 and having them order our robots around for us.



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