No Programmers? No Problem: READY Robotics Simplifies Robot Coding, Rollouts

Startup's ForgeOS "no code" software, which features NVIDIA Isaac Sim, enables robot programming for non-coders.

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Robotics hardware traditionally requires programmers to deploy it. READY Robotics wants to change that with its "no code" software aimed at people working in manufacturing who haven't got programming skills.

The Columbus, Ohio, startup is a spinout of robotics research from Johns Hopkins University. Kel Guerin was a PhD candidate there leading this research when he partnered with Benjamin Gibbs, who was at Johns Hopkins Technology Ventures, to land funding and pursue the company, now led by Gibbs as CEO.

"There was this a-ha moment where we figured out that we could take these types of visual languages that are very easy to understand and use them for robotics," said Guerin, who's now chief innovation officer at the startup.

READY's "no code" ForgeOS operating system is designed to enable anyone to program any type of robot hardware or automation device. ForgeOS works seamlessly with plug-ins for most major robot hardware, and similar to other operating systems, like Android, it allows running third-party apps and plugins, providing a robust ecosystem of partners and developers working to make robots more capable, says Guerin.

Implementing apps in robotics allows for new capabilities to be added to a robotic system in a few clicks, improving user experience and usability. Users can install their own apps, such as Task Canvas, which provides an intuitive building block programming interface similar to Scratch, a simple block-based visual language for kids developed at MIT Media Lab, which was influential in its design.

Task Canvas allows users to show the actions of the robot, as well as all the other devices in an automation cell (such as grippers, programmable logic controllers, and machine tools) as blocks in a flow chart. The user can easily create powerful logic by tying these blocks together — without writing a single line of code. The interface offers nonprogrammers a more "drag-and-drop" experience for programming and deploying robots, whether working directly on the factory floor with real robots on a tablet device or with access to simulation from Isaac Sim , powered by NVIDIA Omniverse .

READY is making robotics system design easier for nonprogrammers, helping to validate robots and systems for accelerated deployments.

The company is developing Omniverse Extensions — Omniverse kit applications based on Isaac Sim — and can deploy them on the cloud. It uses Omniverse Nucleus — the platform's database and collaboration engine — in the cloud as well.

Isaac Sim is an application framework that enables simulation training for testing out robots in virtual manufacturing lines before deployment into the real world.

"Bigger companies are moving to a sim-first approach to automation because these systems cost a lot of money to install. They want to simulate them first to make sure it's worth the investment," said Guerin.

The startup charges users of its platform licensing per software seat and also offers support services to help roll out and develop systems.

It's a huge opportunity. Roughly 90 percent of the world's factories haven't yet embraced automation, which is a trillion-dollar market.

READY is a member of NVIDIA Inception , a free program that provides startups with technical training, go-to-market support and AI platform guidance.

The startup operates in an ecosystem of world-leading industrial automation providers, and these global partners are actively developing integrations with platforms like NVIDIA Omniverse and are investing in READY, said Guerin.

"Right now we are starting to work with large enterprise customers who want to automate but they can't find the expertise to do it," he said.

Stanley Black & Decker, a global supplier of tools, is relying on READY to automate machines, including CNC lathes and mills.

Robotic automation had been hard to deploy in their factory until Stanley Black & Decker started using READY's ForgeOS with its Station setup, which makes it possible to deploy robots in a day.

READY is putting simulation capabilities into the hands of nonprogrammers, who can learn its Task Canvas interface for drag-and-drop programming of industrial robots in about an hour, according to the company.

The company also runs READY Academy, which offers a catalog of free training for manufacturing professionals to learn the skills to design, deploy, manage and troubleshoot robotic automation systems.

"For potential customers interested in our technology, being able to try it out with a robot simulated in Omniverse before they get their hands on the real thing — that's something we're really excited about," said Guerin.

Learn more about NVIDIA Isaac Sim , Jetson Orin , Omniverse Enterprise .

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