

A.I./REAL LIFE

'No-Code' Brings the Power of A.I. to the Masses

A growing number of new products allow anyone to apply artificial intelligence without having to write a line of computer code. Proponents believe the “no-code” movement will change the world.

By **Craig S. Smith**
March 15, 2022

This article is part of a new series on how artificial intelligence has the potential to solve everyday problems.

Sean Cusack, a software engineer at Microsoft and beekeeper on the side, wanted to know if anything besides bees was going into his hives. So he built a tiny photo booth (a sort of bee vestibule) that took pictures whenever something appeared around it. But sorting through thousands of insect portraits proved tedious.

Colleagues told him about a new product that the company was working on called Lobe.ai, which allows anybody to train a computer-vision system to recognize objects. Mr. Cusack used it to identify his honeybees — but also to keep an eye out for the dreaded Asian murder hornet.

“It was just really simple,” Mr. Cusack said, adding that the underlying data science was “over my head,” despite his title. The Lobe platform allowed him to drag and drop sample photos and click a few buttons to make a system that could recognize his beloved bees and spot unwelcome visitors.

Mr. Cusack is part of a growing army of “citizen developers,” who use new products that allow anyone to apply artificial intelligence without having to write a line of computer code. Proponents of the “no-code” A.I. revolution believe it will change the world: It used to require a team of engineers to build a piece of software, and now users with a web browser and an idea have the power to bring that idea to life themselves.

“We are trying to take A.I. and make it ridiculously easy,” said Craig Wisneski, a no-code evangelist and co-founder of Akkio, a start-up that allows anyone to make predictions using data.

A.I. is following a familiar progression. “First, it’s used by a small core of scientists,” Jonathan Reilly, Akkio’s other co-founder, said. “Then the user base expands to engineers who can navigate technical nuance and jargon until, finally, it’s made user-friendly enough that almost anyone can use it.”

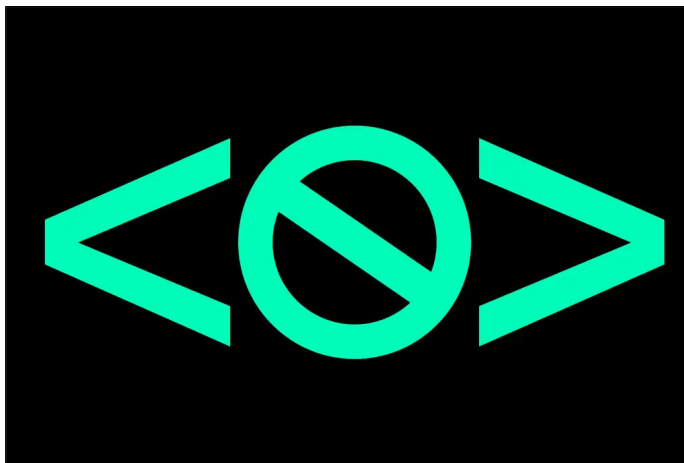
Just as clickable icons have replaced obscure programming commands on home computers, new no-code platforms replace programming languages with simple and familiar web interfaces. And a wave of start-ups is bringing the power of A.I. to nontechnical people in visual, textual and audio domains.

Juji, for example, is a tool designed to make building A.I. chatbots as easy as creating a PowerPoint presentation. It uses machine learning to automatically handle complex conversation flows and infer users’ particular characteristics to personalize each engagement rather than simply serving up preprogrammed interactions.

Its co-founder, Michelle Zhou, said the goal was to give Juji chatbots advanced human soft skills such as emotional intelligence so that they could connect with users on a more human level than existing systems have. Using Juji, staff members at the University of Illinois were able to create and manage their custom A.I. chatbot and scale their student recruitment operations.

But not all of the existing tools are robust enough to do more than simple tasks. Google’s Teachable Machines is a computer-vision tool similar to Lobe.ai. Steve Saling, a former landscape architect who is now living with A.L.S., worked with the Teachable Machines team for about a year and a half to train a system to turn switches on and off using his facial expressions.

“It gets more accurate with more data,” Mr. Saling said in an email. But he said the process of collecting that data — pictures of his face at different angles and in varying light — was labor intensive and the system never reached the level of accuracy required. “Automation needs to be in excess of 99 percent reliable to be dependent on it,” he said. “Teachable Machines will get there but it is not there yet.”



Juan Carlos Pagan

Still, it’s early days. “No-code A.I. tools are still on the fringes of the larger no-code movement, because not many people understand machine learning

enough to dream up what's possible," said Josh Tiernan, who runs No Code Founders, a community of nontechnical entrepreneurs who use no-code tools such as WordPress or Bubble. But he expects no-code A.I. to grow as more people understand its potential.

Another force in no-code's favor: Advances in A.I. itself are making no-code platforms more powerful. OpenAI, the company co-founded by Elon Musk, has a vast A.I. system, GPT-3, that can write code when prompted with simple English. It can even create websites and do other basic programming tasks. OpenAI has used the system to create GitHub Copilot, a tool that acts as an autocomplete function for coders, speeding up their work. DeepMind, a subsidiary of Alphabet, Google's parent company, has gone a step further with an A.I. tool capable of writing complete code to solve complex problems posed to it with normal speech or text.

Already, users of Microsoft's Power Platform, which includes a family of no-code products, can generate simple applications by just describing them.

"I could say something like, 'Look up all the customer records from the last year,' and it will go do that for you automatically," said Charles Lamanna, Microsoft's corporate vice president of business apps and platforms. He estimates that half of all office work could be automated with A.I. if there were enough developers to do the work. "The only way to do this is to empower everybody to be a no-code developer."

Eventually the broader public will be able to create A.I.-enabled software in much the same way that teenagers today can create sophisticated video effects that would have required a professional studio a decade or two ago.

For now, though, most no-code-A.I. users are business professionals who want to streamline the way things are done without having to involve a programmer.

Google's AppSheet, for example, is an open platform where people can connect data and, with a single click, create apps that can be opened on a smartphone, tablet or computer. It uses A.I. to understand the intent of users and enables them to build mobile and desktop applications with integrated computer vision and predictive analytics features. It costs nothing to make apps for personal use.

"We're focused on making this consumable by regular people," said Praveen Seshadri, AppSheet's co-founder and chief executive. There are many organizations around the world that have teams of people that need to coordinate schedules and tasks, he added. Each one is unique and more suited to building a custom app than trying to use something off the shelf.

As an example, he cited New Incentives, an organization that gives small amounts of cash to mothers in some of the poorest parts of Nigeria to encourage them to immunize their children. To track that data, they built an app with AppSheet that their employees now use in the field.

Alex Denning, who runs Ellipsis, a small marketing company for businesses that use WordPress, turned to Akkio to build an A.I. system that could predict which keyword and title would get his clients' blog posts the most visibility on Google and other search engines. He dragged and dropped onto Akkio's site a spreadsheet of past keywords and blog-post titles along with the number of clicks those posts got on Google. After a few keystrokes, Akkio created an A.I. to do the job.

"Results for our clients improved by approximately a third as a result of leveraging Akkio and the A.I.," Mr. Denning said. Once an A.I. system is created on Akkio, users can integrate with their existing software. Mr. Denning renamed the tool Falcon and uses it to market his company.

"I am not a developer," he said, "but it was easy and intuitive for me to make it happen."

And Mr. Cusack, the bee guy? His A.I. system never spotted a murder hornet, but it did catch plenty of wasps and earwigs sneaking into his hives — a modest but important step for no-code.

Craig S. Smith is a former correspondent for The Times and hosts the podcast "Eye on A.I."