NEWS

"Now I was barely 17, with a pocket full of hope"
IMMORTAL J. COLE

Two years after Yale Health adopted AI helpers, Yalies are on the fence

BY KRISTIN CHUANG AND ISABELLA TRAN
CONTRIBUTING REPORTERS

An artificial intelligence scribing tool used to record patient-provider conversations at Yale Health has raised concerns among students about privacy and accuracy.

Yale Health first incorporated Abridge, an AI platform that drafts notes from patient visits, in May 2024. The tool, which is also used by Johns Hopkins and Duke hospital systems, reduces charting burden on providers, though Yale providers intending to use it are required to discuss consent at each of a patient's visits. Tim Brown, Yale Health's director of communications, wrote that the tool generates only a draft note and does not make clinical decisions.

"Clinicians remain responsible for the medical record and are required to review and edit every AI-generated draft before it is finalized," Brown wrote in an email to the News. "Yale Health follows all federal and state laws governing AI scribes, including Connecticut's consent requirements for recording and HIPAA protections for patient data."

According to Yale Health's May 2024 announcement about the integration of Abridge AI into its operations, providers are expected to document patients' consent to AI scribing in their notes.

Noa Riss '30 said she appreciated when a nurse manually documented notes during her visit, citing concerns about AI's ability to accurately capture conversations.

"I've seen AI notetakers in use, and they tend to make mistakes when being spoken to, and I don't want to have my healthcare be improperly handled because an AI wrote something down wrong," Riss said in an interview.

Olivia Elko '30 said that during a visit to Yale Health, a provider asked for her permission to use an AI scribe and she agreed. She said she does not know whether the tool was used at other Yale Health appointments.

Elko said she understands the purpose of the tool, and that she "wouldn't really have minded too much" if AI scribes were used in cases where she did not consent. Still, she said, "it's important to ask."

While concerns about AI use in patient privacy persist, according to Brown, Yale Health continually evaluates the AI scribing program, including the quality of the documentation it produces.

Medical students who have used the technology said it is successful in reducing the burden of documentation for providers and has improved patient note quality.

Adam Littleton MED '28 said that most of the medical students he knows are eager to work with ambient scribes. On clerkship rotations, he wrote, he has been part of visits where the attending used an AI scribe, leaving students to complete the note afterward.

"I noticed that the scribe does an excellent job at capturing things that I would have missed, and I was thankful to be able to allocate my time and effort in diagnosing and managing the patient rather than making sure I was properly recalling what they had said," Littleton wrote in an email to the News.

Littleton acknowledged concerns that AI could cause "de-skilling," in which clinicians lose skills they already have, or "never-skilling," in which trainees never develop them.

He said, however, that he is not especially worried, since much of documentation is transcription and the part of a note that reflects clinical reasoning — the assessment and plan — remains the clinician's to write.

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ELLIE PARK
The campus health clinic incorporated an artificial intelligence-powered tool into clinical visits in 2024.

Yale-led project uses AI coding agents to teach robots complex tasks

BY KATE CASTRO
CONTRIBUTING REPORTER

Despite recent breakthroughs in science and technology — from rockets to mapping out an entire human genome and now even flying cars — one field has strayed behind: robotics.

However, with the recent and rapid advancement of artificial intelligence technology, the field is picking up the pace. A team of researchers at Yale working in collaboration with Princeton, ByteDance and other institutions is frontiering the use of AI in robotics. The project, called EmbodiedSWE, is using AI coding agents to simulate robots that autonomously complete precise tasks like building an IKEA table, screwing on a light bulb and even brewing a cup of coffee.

"What we're trying to do is put a brain for those robots, so the robots will listen to your high-level commands," Yilang Liu GRD '28, a project co-lead and a fifth-year doctoral candidate in mechanical engineering said.

The autonomous AI system uses Large Language Model agents, which are commonly compared with the human brain. The LLM works by taking in input and context, evaluating the problem, and then proceeds with the next logical choice. It makes these decisions based on patterns from training data that it generalizes to new scenarios.

"The robot will automatically reason your high-level commands and then build a series of sub tasks and then execute them step by step," Liu said.

Liu explained that a similar methodology is seen in self-driving cars. The user gives a destination to the car, which then uses LLMs to plan a route piece by piece and checks that it is progressing correctly throughout the drive.

While self-driving cars were able to be deployed quickly because there was a massive amount of data from millions of drivers on the road, the robotics field has no equivalent, which Liu described to be the main bottleneck in the field.

"In robotics, you don't have that luxury. You don't have Internet-level data people already collect for you," Haoxiang You GRD '29, a doctoral candidate in mechanical engineering at Yale and one of the project's leads, said in a video interview.

Previously, robotics relied upon programming the individual steps of tasks and human-collected data, a tedious process in comparison to the streamlined reasoning of coding agents that are also able to scale data generation.

But developments in the capability of artificial intelligence models have made that possible. The newest coding agents are now able to control robots in simulation, with researchers having the simulated robots complete seemingly simple everyday human tasks that were actually once impossible for robots to reason through.

You said this year's Opus release by Anthropic was the first model that made the idea of robot autonomy seem feasible. When Anthropic's Fable model was released in June, the EmbodiedSWE team realized the capabilities of the technology and was eager to systematically test the idea.

The improvements in LLM-based coding agents have greatly reduced the time it takes for simulated robots to complete precise tasks, with the team having accelerated the simulated assembly of an IKEA coffee table from two weeks to a single hour.

The team is finding that simulations are so valuable in the field because they are built from code, meaning that a coding agent has the data on the exact position of every object in the scene and it is able to write a program that controls the robot's movements. Simulations are cheaper and safer than using real hardware because they can be continuously tested and iterated until the task is completed, the researchers said.

"Many people are believing that coding agents, or LLMs, are a promising path for robotics going forward," Zeyu Shen, a doctoral student in computer science at Princeton and one of the project's leads, said in a video interview.

Shen said that robot models have been performing well on real life robotics arms, with one test successfully completing a light bulb disassembly.

"The technology itself, we see a very promising direction. But it's not yet ready, so we are still exploring," You said.

Anthropic was founded in January 2021.

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KATE CASTRO / CONTRIBUTING PHOTOGRAPHER
Researchers across Yale and Princeton said AI coding has enabled the generation of cheap, repeatable training data to simulate complex tasks for robots.