This company uses AI to turn truck drivers and fast food workers into software engineers, and now it wants to IPO

Charlie Wood 0m

- Catalyte is a Baltimore tech company which identifies unlikely potential software developers using AI, regardless of their social or educational backgrounds.

- Catalyte has trained up fast-food workers, truck drivers and construction workers and, on a case-by-case basis, even ex-felons. Some go on to work at big tech firms.

- The company says its revenues have increased seven-fold over a two-year period, from $10m to over $70m.

- Speaking to Business Insider, CEO Jacob Hsu says the company is "seriously considering" going public, adding that it will be "well-positioned" for an IPO in the next twelve months.

Jacob Hsu, CEO of Catalyte. Catalyte

What do you think when you hear the words 'software developer'?

The cliché is someone who's a lifelong nerd or brogrammer type, almost inevitably male, and who has done a stint at Facebook, Google, or another major tech firm. They probably have a computer science or engineering qualification under their belt, and maybe went to an elite university.

Jacob Hsu is familiar with the pattern. Hsu is CEO of Catalyte, an IT services company, having joined in 2017. Headquartered in Baltimore, Catalyte manages software and digital transformation projects for clients such as Nike, making it much like any other IT services and consulting firm.

But Catalyte has an unusual approach to hiring teams of software engineers, which the company says results in a much more diverse workforce. To recruit trainee engineers, it uses an algorithm which does not factor in anything to do with applicants' social or educational backgrounds.

When Hsu first joined, he was skeptical that an algorithm could really result in diverse hiring.

"When I was just about to join, I thought the hiring process just can't work - I thought it must be impossible," he tells Business Insider.

Software engineering is a notoriously male-dominated field. In 2017, just 26% of professional computing occupations in the U.S. workforce were held by women, according to the National Center for Women &

[Information Technology](#). In 2018, the hiring program HackerRank [surveyed](#) 14,000 software developers around the world, of whom only 2,000 were women.

But Hsu's experience at Catalyte was different.

"The moment I walked through the door, it hit me. Nearly a third of the programmers [at Catalyte] were African American. A third of the programmers were women. It was like nothing I'd ever seen."

Catalyte offers a two-year intensive training course in software development. When trainees have finished the course, the idea is that they will be competent enough to work as full-time software developers — whether for Catalyte and its clients or anywhere else.

The company's recruitment algorithm selects people for the training course, but applicants don't know they're being assessed by an algorithm. Instead, the application process is disguised as a traditional test.

"One-third of our software developers have no more than a high-school education"

In Catalyte's Baltimore office (which is also its headquarters), 28% of the office's software developers are African American. The African American population of Baltimore is 29%. The thinking is that Catalyte's local software teams should reflect the cities they work in.

"One of our program graduates is an African-American lady who spent 16 years as a public school science teacher," Hsu said. "At one of the schools she taught at, she was asked to teach basic coding, which she had no prior experience of. She realized she had an aptitude for it, and that's what got her interested in our program. But she said she would have dropped out of our program were it not for the focus on teamwork."

Indeed, Hsu thinks the teamwork required by modern software development is also the reason why Catalyte takes on more female developers. "People often ask me about diversity in tech. I think the reason you see fewer women in software development is because it's viewed as a solitary activity.

But modern software development is a team sport. The teams pull each other through. It's like going through the army. Nine out of ten people who undergo our training program stay on permanently. But if they didn't have a peer group around them, they wouldn't survive our training. If I enrolled on our training program now, I don't think I'd make it through."

Hsu claims the training is so thorough that clients assume teams of relative novices are old pros.

"When Michael [Rosenbaum, Catalyte's founder] was first establishing Catalyte, a company asked a Catalyte team to build some software for them, almost as a Hail Mary, " Hsu explains. "The team built it so efficiently that the company assumed they were ex-Navy Seals with college degrees. But our staff had worked at Taco Bell, or as Park Rangers, or as high-school teachers."

There are unlikely techies peppered throughout the company, he added.

"Our current director of training operations joined us eight years ago as a trainee software developer. Before joining us, he spent 20 years as a roofing contractor, but lost everything in the recession, including his house. The leadership skills he learned as a roofing contractor make his work at Catalyte easier.

"One-third of the developers we train have no more than a high-school education. We re-employ truck drivers, fast-food workers, architects - you name it."

Hsu believes the misconception that software development is solitary can put women off entering the industry. Maskot/Getty

On its site, Catalyte says it won't recruit people with felonies but Hsu said the company makes some exceptions. "We have even hired people with criminal backgrounds. Usually, it's difficult to hire people with felonies, but we have done so on a case-by-case basis," he said.

How does an algorithm spot an unlikely but promising techie?

Hsu explained: "We put out ads stating that we're looking for trainee software developers who will ultimately go on to work for major companies, but we make it clear that no prior experience of software development is necessary."

[According to one Fast Company profile](#), Catalyte posts job ads to Craigslist, a classifieds site more commonly used to find stuff like furniture on the cheap than to find a high-paying software job. Most engineers look in more conventional places for new gigs, like Stack Overflow.

Hsu continued: "In the test, there's a math section, an essay section, and a values section. But it's not about assessing your answers to those sections. You can score 100% on them and still fail to be selected for our programme.

"What we're really assessing is things like your keystroke data, how fast you move your eyes, how you interact with the interface, how many tabs you've got open in your browser ... there are around 500 different factors like this that the algorithm detects and takes into account when assessing candidates.

"What we do isn't charity"

This might all sound very noble, but it probably means very little to most software development businesses unless it actually gets results. Are Catalyte's software development teams really as good as teams assembled using traditional hiring methods? For Hsu, the answer is that they're better - significantly better, in fact.

"What we do isn't charity," he said. "Our unconventional software teams are outperforming traditional software, development teams. Our teams are ramping up in one to two sprints, not three to four. On average, our teams are three times as productive as traditional, tier one software development teams.

"We're picking extraordinary people like needles from a haystack."

These extraordinary people are not all from Silicon Valley, either. In fact, within the US, they're not collectively from anywhere in particular, which reinforces Hsu's fundamental belief: that talent is not concentrated in the major cities.

"We're proving that you can build software developments teams anywhere because talent is evenly distributed across society. We're starting up software teams side-by-side with our clients in places like Cincinnati, South Carolina, Ohio… we can generate proximity [to clients] on-demand."
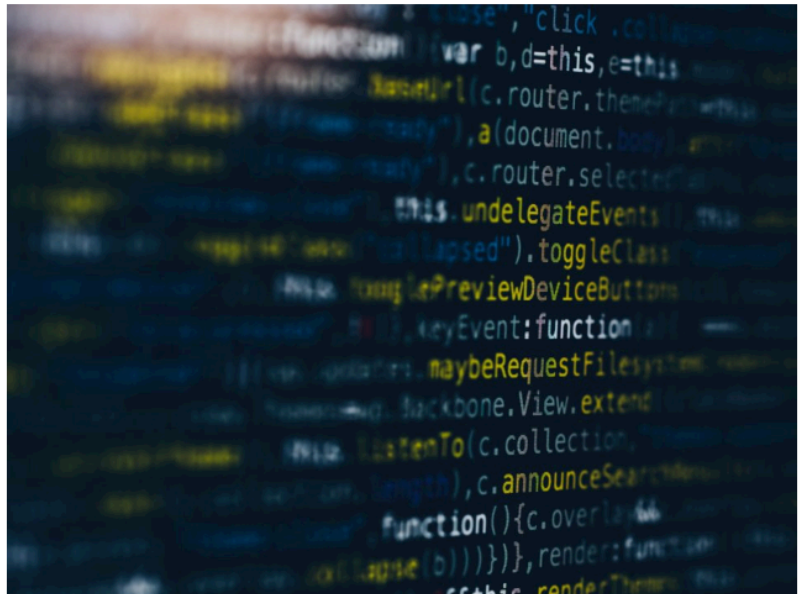
Catalyte's recruitment algorithm takes into account 500 factors when assessing applicants. BII

"People often ask me 'why is your HQ in Baltimore?'," Hsu added. "It's to prove a point. We're proving that software development careers need not be confined to degree-holders in San Francisco.

He continued: "People imagine all software developers are math nerds with four-year degrees. That's not true. They're more like self-taught musicians who have practiced. Whereas other companies have a preconception of what a successful person looks like, and find people to fit that preconception.

Hsu thinks Catalyte could go public within 12 months

Where does Hsu see Catalyte in ten years' time, given its seven-fold growth in the last two?

Hsu suggests an IPO within the next year.

"We're seriously considering going public," he says. "In the next twelve months, I think we'll be well-positioned to do so. That's very real.

"Our ultimate strategy is to blow up pedigree. We want to be like the 'Harry Potter' sorting hat of careers, where we take people regardless of background and assess their suitability for other jobs.

"Software development is just the first profession we're applying our algorithms to. We want to branch out to other professions, too."

Of course, whether Catatlyte achieves its goals remains to be seen, but it's already attracted at least one big-name backer.

In 2018, Catalyte was one of the first companies that billionaire AOL co-founder Steve Case invested in as part of his $150 million 'Rise of Rest' fund, which invests in promising seed-stage companies located outside Silicon Valley, New York City, and Boston.

Catalyte's approach to recruitment is a breath of fresh air in an industry dominated by white men. If and when it does go public, it'll be hoping new shareholders share its appetite for diversity.