

Leaving Talent on the Table

Redesigning College Computer Science to Close Diversity Gaps in Tech

There's a shortage of tech talent

- **There are over 500,000 unfilled software development jobs** in the United States today.¹ But skills gaps in high-growth fields reflect more than a simple imbalance of supply and demand. Because tech employers are leaving talent on the table.
- **Just 7.4 percent of tech industry employees are African-American, and 8 percent are Latinx.**² Workers at Google, Microsoft, Facebook, and Twitter — according to those companies' own reports — were just 3 percent Hispanic and 1 percent black in 2016.³ Black and Hispanic students now earn computer science degrees at twice the rate they are hired by leading tech companies.⁴

There's a disconnect here

- **The problem stems, in part, from the fact that tech employers recruit from a tiny subset of elite U.S. colleges.**⁵
> According to one analysis, more than half of Facebook employees graduated from a top 10 school.⁶ Which means companies may never come into contact with the 20 percent of black computer science graduates who come from historically black colleges and universities.
- **Thousands of talented candidates are overlooked each year because they graduate from less-selective public universities, minority-serving institutions, or women's colleges.** Tech employers are fishing in a talent pool with artificial constraints — and coming up short.



It doesn't have to be this way

- In 2014, CodePath.org set out to bridge this disconnect from both sides, connecting employers to a pool of untapped talent and giving students from outside of elite circles the training they need to launch careers in tech.
- The first step was to build college courses that help students develop industry-relevant software development skills. We collaborate with students and professors to offer in-person, on-campus courses during the academic year, and run remote-classroom courses during the summer.
- College computer science courses often prioritize theory over practice. They emphasize abstract concepts at the expense of concrete, technical skills that graduates will need on the job.

Today, four pillars guide our work:

Industry-Backed

CodePath collaborates with Silicon Valley engineers to create open source content that teaches skills students will need to excel in iOS development, Android development, and technical interviewing.

Continuous Improvement

Our curricula are the product of constant collaboration among students, professors, and engineers across the computer science arena, which means they are updated almost daily to keep up with evolving industry standards.

Personalized Support

Our courses are backed by a team of engineer instructors who are on call every day to provide personalized support to every student.

Reimagining Career Services

We match alumni to employers through a virtual career fair. Companies are required to interview all matches. We coach students throughout their application and interview process.

During the summer of 2018, we invited 133 students from over 80 schools to participate in a virtual version of Codepath.org's courses and job fair.

70%

of students were **women or underrepresented minorities.**

44%

were **first-generation college students.**

55%

of matched candidates were **moved to the next stage of company interviews.**

“

CodePath told us from the beginning: 'stuck is not the goal of this course.' CodePath's model is so different than any other I've ever experienced. How much faster could we all be learning if 'stuck wasn't the goal'? Code Path reawakened the joy I used to feel as a child leaping out of bed excited to make something! As a kid it was Legos, as a Codepath student— it is apps.

ALEXANDER (*alumnus*)



What we're learning

Closing gender and racial gaps

- There was no difference between the performance of men and women in the course. This was true even among the highest performers: the top 25 percent of performers was split evenly between men and women.
- Nonwhite students were actually slightly more likely to land a job or internship after the program than their white peers.

Prestige is not a proxy

- Students from outside the top-20 engineering schools were just as likely to receive a job or internship offer after their technical interviews as those who attended top-20 schools.

Technical skills matter most — and are teachable.

- The biggest predictor of post-completion job placement was fluency with specific technical concepts, particularly data structures and algorithms.
- Underrepresented students were less familiar with these concepts at the beginning of the course, but by the end of the program, they had closed the technical gap in their performance on weekly assessments.

Casting a wider net leads to a stronger catch.

- While companies said they would have only offered technical interviews to two or three students based on resumes alone, after being required to interview at least 10 of our matched students, companies moved forward with 55 percent of candidates.
- This means companies were two to three times more likely to move forward with candidates after the virtual career fair, than if they had come across the resumes during their standard recruiting process.

When underrepresented students are well-prepared for the job search, they are more confident — and they get hired.

- 66 percent of participants had at least one technical internship or job offer after the program. 69 percent of students with no technical work experience got their first-ever technical internship offer after the course.
- Underrepresented minority students said that they were 65 percent more confident in applying to jobs at top tech companies after the program.



Why it matters

We're proving that Silicon Valley's diversity problem is a problem of access and equity — not potential. We're showing that diversity and technical competence are not at odds.

Along the way, we're helping employers to identify recruiting blind spots. But we're also building capacity on the supply side of the talent equation.

Providing underrepresented students at overlooked schools with access to high-quality, relevant educational experiences has the potential to grow the pool of tech talent and close diversity gaps in tech.

Endnotes

- 1 “What’s Wrong with This Picture?” Code.org, code.org/promote
- 2 “Diversity in High Tech.” Equal Employment Opportunity Commission, www.eeoc.gov/eeoc/statistics/reports/hightech/.
- 3 Bui, Quoc Trung, and Cain Miller, Claire. “Why Tech Degrees Are Not Putting More Blacks and Hispanics Into Tech Jobs.” The New York Times, 25 Feb. 2016, www.nytimes.com/2016/02/26/upshot/dont-blame-recruiting-pipeline-for-lack-of-diversity-in-tech.html.
- 4 Weise, Elizabeth, and Guynn, Jessica. “Tech Jobs: Minorities Have Degrees, but Don’t Get Hired.” USA Today, 13 Oct. 2014, www.usatoday.com/story/tech/2014/10/12/silicon-valley-diversity-tech-hiring-computer-science-graduates-african-american-hispanic/14684211/.
- 5 Hartmans, Avery. “These 25 Universities Produce the Most Tech Employees.” Business Insider, 2 May 2017, www.businessinsider.com/top-colleges-for-working-in-silicon-valley-2017-5#4-university-of-southern-california-22.
- 6 Minsky, Carly. “Which Colleges Do Facebook, Google and Other Top Employers Recruit from?” Times Higher Education, 16 Feb. 2017, www.timeshighereducation.com/student/news/which-colleges-do-facebook-google-and-other-top-employers-recruit#survey-answer.



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