



How to Apply

# Data-Driven Recruiting

to Hiring Engineers



UNLEASH THE POWER OF DATA

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# INTRODUCTION

## Software Engineers are the most in-demand professionals in the United States.

Makes sense, right? Our increasingly digital world demands the technical talent to support it.

This demand has created an all-out talent war for high-quality software engineers, especially at high-growth startups and technology companies.

### **But the recruiting process is broken.**

Organizations complain that they can't find the type of talent they're looking for and engineers and other technical talent complain about awful processes and ghosting.

### **How did we get here?**

Back in the day, engineering knowledge was locked in leading institutions like Stanford, MIT, and others. The only way to gain access to leading professors and high-tech hardware was to attend these top institutions.

Soon, software engineering gained momentum and other, smaller institutions started offering degrees and certificates. But, it was still typically locked behind closed doors.

Recruiters focused their efforts on these institutions because they were the only ones teaching the hard skills of software engineering.

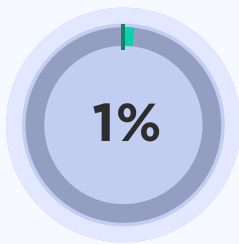
Yet... the top software engineers of our generation are notorious dropouts, who never attended university to begin with.

Technology leaders like Steve Jobs, Bill Gates, and even Mark Zuckerberg have...interesting... backgrounds to say the least.

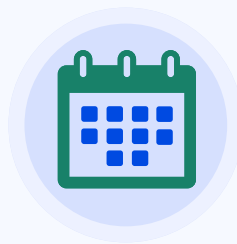
So why do recruiters focus so much on a proxy like educational institution to assess talent and skills?

The other proxy that organizations tend to use when it comes to hiring is previous employers. But, there are a lot of great engineers who don't work at well known companies.

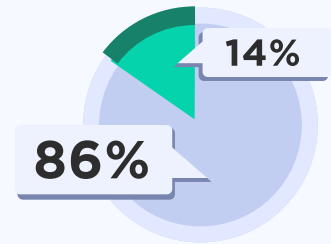
### Figure 1. Recent Hiring Statistics



Only **1** in **100** engineers are unemployed.



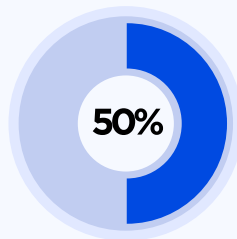
Pedigree candidates are off the market in **10** days.



**86%** of the most qualified candidates are already employed and not actively seeking a new position.



More than **50%** of software engineers are self taught.



Engineers also change jobs a lot -- **50%** of all software developers plan on switching jobs in the next year.



The median annual wage for software developers, applications was **\$103,620** in May 2018.

The entire recruiting and hiring process for engineers is completely broken. Especially when you realize that today, more than 50% of engineers are self-taught! The democratization of education, especially around programming, has destroyed the notion that high-quality learning experiences are only accessible via educational institutions. Both organizations and engineers agree that the process is broken.

Leading organizations like Uber, Quora, and Robinhood have taken a bold step to go beyond traditional recruiting - to go beyond the resume and reviewing candidates based on outdated proxies like past employers and degrees.

They've taken the leap into data-driven recruiting.

Data driven recruiting seeks to replace a system that operates with unconscious bias, familiarity and inconsistency. Why? Because frankly, we want you to hire the right people. And we want those people to get a fair shake.

What is data-driven recruiting? Why does your organization need to adopt it to attract and retain engineers? We're diving deep into the what, why, and how of data-driven recruiting to help you #GoBeyondResumes.

After reading this guide you will:

- 01** Understand and be able to apply core principles of data-driven recruiting.
- 02** Be able to create a more unbiased and fair hiring process.
- 03** Measure technical skills more effectively and at scale.

# 01

## **Understanding the Fundamentals of Data-Driven Recruiting**

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**B**oiled down, data-driven recruiting simply means using data to improve and optimize your hiring process. One of the most important pieces of data in your hiring process is the measurement of skills and abilities. Without the ability to actually measure skills in an unbiased, non-adverse way, you're optimizing a broken funnel.

Many organizations believe that data-driven recruiting is only measuring things like time to hire, pass-through rate, and quality of hire. But, what do these things actually tell you about the people within your hiring pool? Sure, you may have more people at the top or get more to get bottom of the hiring funnel, but are they the high-quality, skilled candidates your organization needs?

While many organizations focus on optimizing different statistics within the overall hiring process, they start to get frustrated when their optimizations don't work and they still suffer with skill gaps and high employee churn.

While organizations should look at these statistics, they really need to look at how they can assess candidates' skills to ensure skill gaps are minimized. By implementing data-driven recruiting with skill and ability assessments, you're setting up candidates, hiring teams, and the entire organization for success by focusing on what really matters.

**Data-driven recruiting is much more than using data to improve your hiring process.**

# Traditional Recruiting VS. Data-Driven Recruiting

Figure 2. Traditional vs. Data-Driven Recruiting Comparison

## TRADITIONAL RECRUITING

- 01 Starts with a resume review
- 02 Uses proxies such as education and previous employers as measurements of skills and abilities
- 03 Hiring from the same small pool of people on LinkedIn and other recruiting sites
- 04 Allows biases to creep into all stages of the recruiting process

VS

## DATA-DRIVEN RECRUITING

- 01 Starts with an automated skill assessment at the top of the funnel
- 02 Uses carefully designed assessments backed by research
- 03 Eliminates biases in all stages of the hiring process
- 04 Uses structured interviews and calibrated processes to ensure all assessment data is captured and analyzed



# Organizations That Can Benefit From Data-Driven Recruiting and Skill Assessments



Small companies seeking to hire developers



High-growth startups recruiting technical talent



Tech unicorns scaling its engineering team by 2-4x



Technology companies seeking a certain set of hard skills



Financial companies aiming to keep pace with current rapid digital transformation.



Recruiting and staffing firms seeking to reinvent and revitalize their business

# Roles Skill Assessments Benefit Most



## Front end

Test a candidate's ability to convert data to a graphical interface by measuring HTML, CSS, and JavaScript skills

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## Back end

Test a candidate's ability to handle 'behind-the-scenes' functionality of web applications by measuring Java, PHP, .NET, Ruby, Python, SQL and JavaScript abilities

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## Full stack

Test a candidate's ability to build backends and craft frontends by assessing a full suite of technical skills around HTML, CSS, and JavaScript and Java, PHP, .NET, Ruby, Python, SQL

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## DevOps

Test a candidate's ability to improve the relationship between development and IT operations by measuring source control, continuous integration, infrastructure automation, container concept, and overall cloud orchestration skills

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## Data Science and Data Analyst

Test a candidate's ability to process raw data into structured insights by assessing SQL, Excel, R, Python, and data visualization skills



## Mobile Engineers

Test a candidate's ability to develop mobile applications on Android and iOS by assessing a full stack of skills including J2EE, Ruby on Rails, PHP, and Amazon AWS abilities

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## Game Developers

Test a candidate's ability to create games from scratch by measuring C/C++, and Unity

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## New Grad Engineers

Test a candidate's ability to understand the basics of what your organization is built on including HTML, CSS, JavaScript, and Python skills

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## Interns

Test a candidate's ability to understand basic concepts and core components of software engineering

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Whatever type of software engineer you're hiring, being able to actually assess hard skills is critical to understanding the potential value add they bring to your organization. Organizations, whether they're hiring their first engineer or have fleets of software engineers, can benefit from assessing the skill gaps in their organizations and finding candidates to fill them.

Every hiring team member at your organization, along with your recruiting partners, should have a basic understanding of what data-driven recruiting is and why assessing skills is critical. Simply knowing what data-driven recruiting is will likely reduce bias in the process and can lead to tiny optimizations that are easy to implement as you assess your holistic recruiting and hiring process.

# Benefits of Data-Driven Recruiting

Now that you understand what data-driven recruiting is, who can benefit, and the basics of the types of skills you should assess across the software engineering spectrum, it's time to dive into the benefits.

If we haven't made it clear, traditional recruiting is broken. It relies on a candidate's ability to write a resume and proxies like education institution and previous employers.

Data-driven recruiting throws that out the window and focuses on assessing a candidate's real skills and abilities. Why is this so revolutionary and beneficial?

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## 01 Reduce Bias and Increase Diversity

Implementing data-driven recruiting means your recruiting process starts with assessing abilities - not looking at resumes or using AI to scan a candidate's cover letter for certain keywords.

Assessments reduce bias and increase diversity by eliminating human-decision making at the very top of the funnel.

## 02 Open up Candidate Pool at Top of Funnel

By focusing on skills and abilities, you don't limit your top of funnel based on keywords on a LinkedIn profile, university attended, or previous employers. This opens up your top of funnel to anyone who can get the job done - regardless of their background.

### 03 Save Team's Time by Only Spending Time with Qualified Candidates

By ensuring that every candidate who makes it into the interview process has the real skills needed to get the job done, everyone in the process saves time. Focus your team's time on identifying soft skills and culture value adds rather than trying to uncover their skills through potentially adverse tests provided by your team members.

### 04 Reduce Skill Gaps at an Organization

Get more out of every team member by understanding their exact skills. Once you integrate data-driven recruiting into your hiring process, you can measure your entire organization's abilities, find potential skill gap holes, and fill them with the right people.

### 05 Increase Quality of Hire

By understanding the skills necessary for the position and ensuring that your new hire has those skills, the quality of hire skyrockets. Because you know someone has the skills at the level you need, they can will likely onboard efficiently and produce results quickly. This means you get results faster and your new hire feels confident and happy in their new role.

# **The Old Process for Hiring Engineers**

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**L**et's walk through a typical hiring process for most organizations. A job opens up, gets posted online, and resumes start coming in fast. Recruiters tasked with reviewing resumes have to eliminate most of them and do so based on their own experience and perspective. Here's the problem. Those resumes are reviewed without the use of objective data and inevitably get sorted with a bias.

Maybe the candidate went to the same school that the reviewer did. Or their name sounds familiar. Perhaps the reviewer is in a better mood on Friday than they were on Monday. They're not trying to be unfair - in fact, they likely have no idea that they're making decisions based on these unconscious factors - they're simply human. From there, the top resumes turn into phone interviews. Phone interviews typically focus on answering basic get-to-know-you questions like:

- 01** What are your strengths?
- 02** What are your weaknesses?
- 03** Why did you leave your last job?
- 04** What's a project where you feel like you really succeeded?
- 05** Why should we hire you?
- 06** Why do you want to work here?
- 07** Where do you see yourself in ten years?

Do you see the problem here? Every candidate is going to answer these questions in the way that best represents them - but that doesn't mean they're not exaggerating or even telling the truth. With this model of interviewing, candidates can overstate their strengths and how much they worked on a project while understating weaknesses and why they left a job.

Typically after an in-person interview, either another interview is scheduled, an offer is placed, references are checked, or the candidate is rejected (hopefully in a nice, positive way).

What good does a reference check really do? A candidate picks the person who is going to say the best things about them, not necessarily the truth about them.

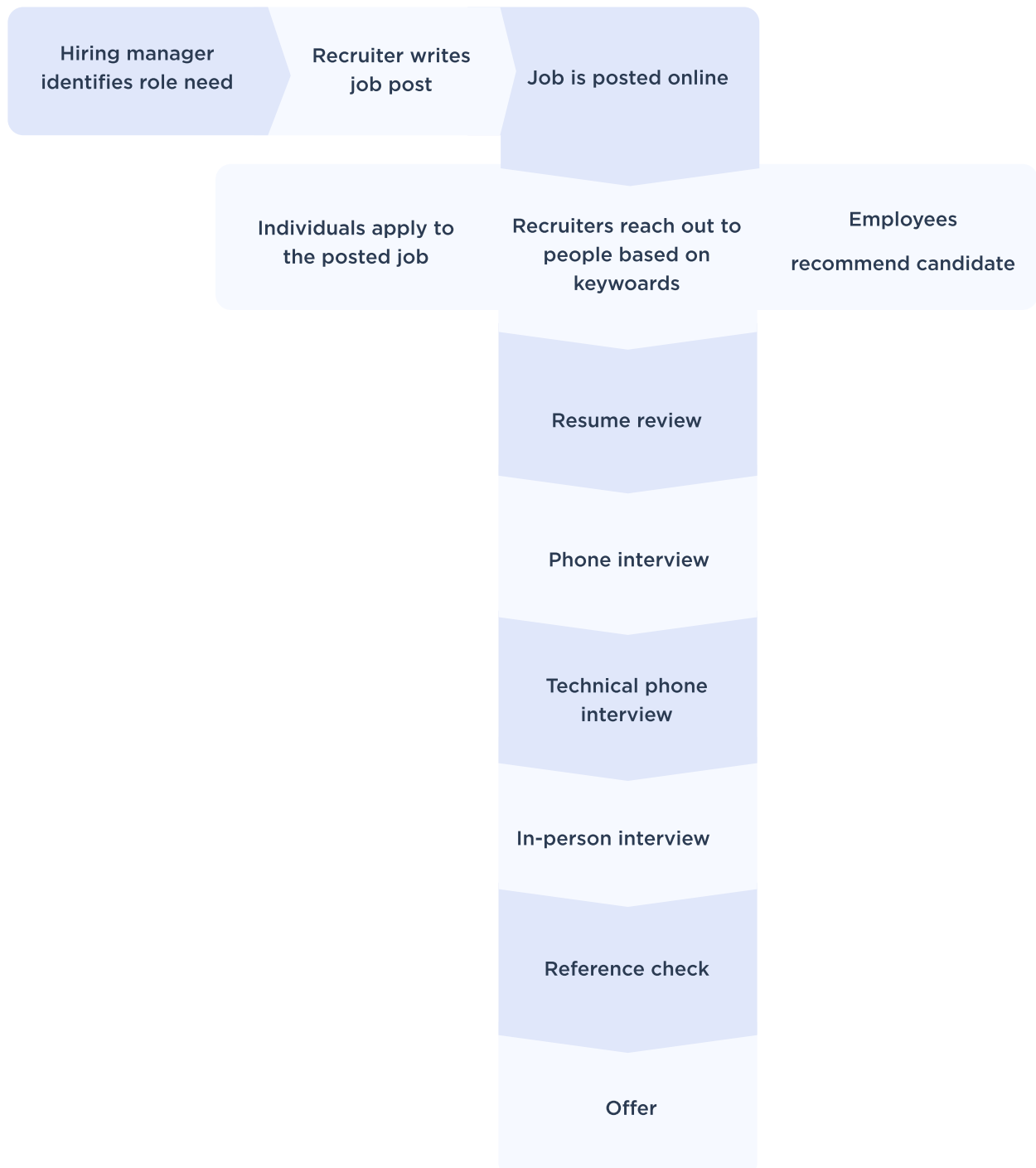
The entire process revolves around someone's resume, their ability to interview, and their references. The testing of abilities is a small, often biased piece of the puzzle that doesn't accurately reflect abilities. So...what are the results of this traditional recruiting process?

**Traditional recruiting relies on resumes, proxies, and broken processes.**





Figure 3. Traditional Process for Hiring Engineers



## Traditional Recruiting Results

### **44 working days**

It takes to acquire a  
new hire

### **8 of 10 recruiters**

References are being  
used as a screening  
method

### **50% of HR Managers**

cannot find qualified  
candidates

These statistics are just the tip of the iceberg when it comes to problems with traditional recruiting. Hiring takes a long time, references are still heavily relied on, and organizations can't find the candidates with the skills they need.

Beyond these end of the funnel statistics, On average, about 90% of candidates are eliminated during the resume review stage. Without an objective and unbiased review, you could be sending the right people straight to the recycle bin. Old school hiring methods can hurt diversity too. Why? Because familiarity breeds comfort. Science even tells us the shape of someone's face can influence our bias. Talk about subconscious hiring!

Take an honest look at your organization's hiring process. Do you start with resumes? Do you rely heavily on reference checks? Are your tests administered by untrained team members and potentially violating EEOC standards? Take the time to analyze your existing process for hiring engineers. Map it out like the diagram above and see which steps are potentially introducing bias and eliminating high-quality candidates. From there, you can look at designing a truly data-driven hiring process that will revolutionize your hiring process.



**The New Data-Driven  
Process for Hiring  
Engineers**

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If you ask companies what their biggest challenge is today (when it comes to recruiting anyways), they'll tell you it's the top of the funnel. AKA, not enough "good" candidates are applying to their jobs. But the truth is, more and more people are entering the tech industry and job market.

We know assessments at the top of the recruiting funnel will help you to identify the right candidates. But doing it wrong can backfire. For example, frontloading a heavy assessment before candidates have done more than submit a resume is like asking someone on a first date to meet your parents. They'll likely be thinking, "Um yeah... I was just hoping to see how dinner goes first."

Don't overwhelm your potential candidates or your team by diving too deep too early. An initial assessment should be simple. You're not going to capture everything in one fell swoop, and that's okay. Start by evaluating something fundamental to the role, then customize as you go to gauge the candidate's fit for the position. For example, if you're hiring an engineer and expect them to have multiple skills as it relates to data structure and programming, start with something foundational - i.e., can they manipulate an array? You're not asking them to recode a major project from scratch but you're identifying that they've applied for the right job.

**Hiring engineers doesn't have to be hard. Implementing data-driven recruiting will transform the entire process if you follow some simple steps**

Figure 4. Data-Driven Process for Hiring Engineers



## Data-Driven Recruiting Results

A high growth technology startup that has recently gone public has seen the following results within 11 months of implementing a data-driven recruiting process with CodeSignal.

- 33%** Onsite to hire rate went up
- 27%** Time to fill went down
- 90%** Engineering time spent on unqualified candidates dropped

One of the 5 largest technical staffing firms in the US has seen the following results within 12 months of implementing data-driven recruiting.

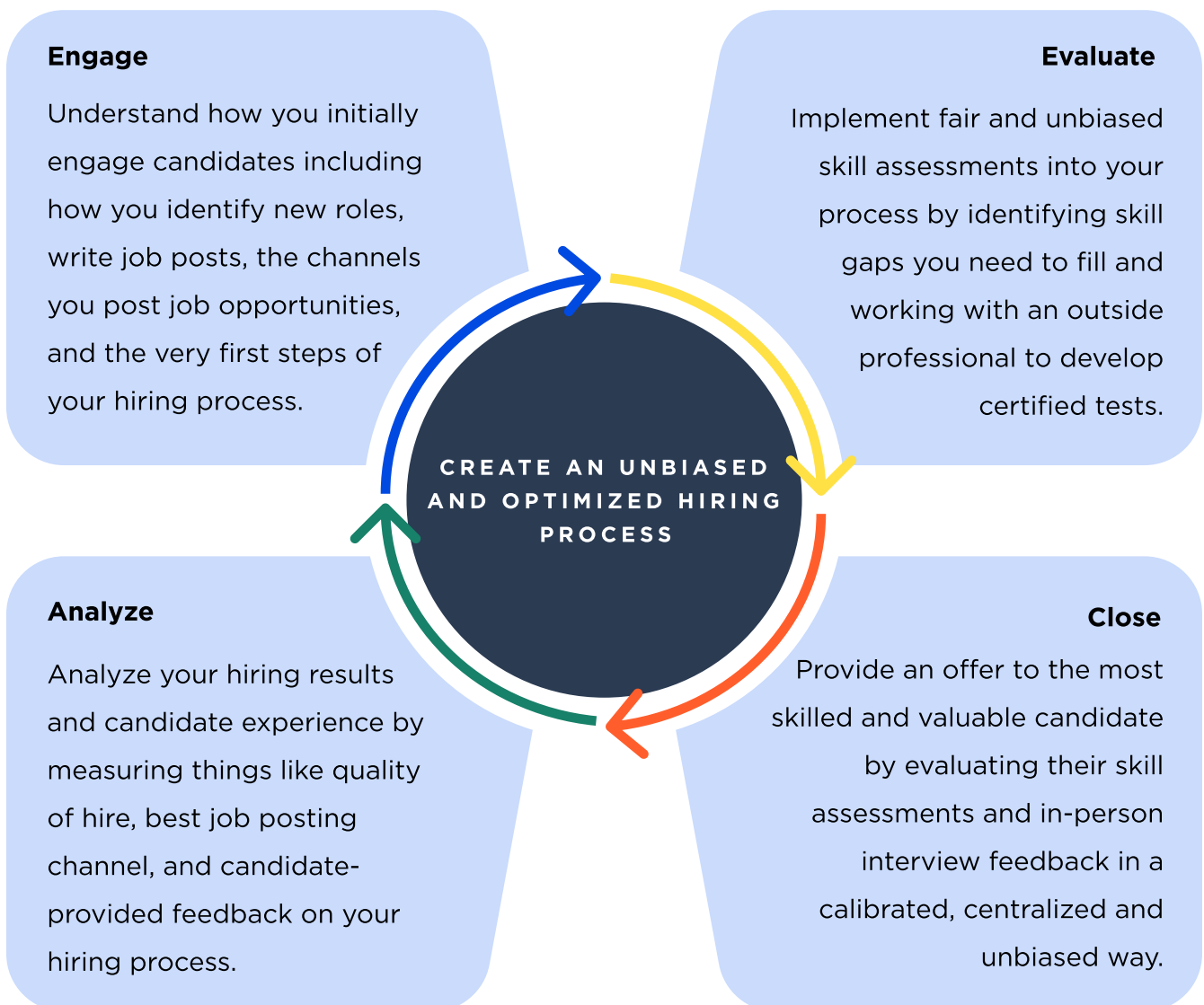
- 70%** Recruiting time spent on unqualified candidates went down
- 31%** Number of placements per recruiter increased
- 25%** Number of candidates processed by each recruiter within a month increased

A Unicorn company with ~1000 employees valued at over \$7B that's aiming to go IPO within the next few years has seen the following results 10 months after implementing CodeSignal.

- 99%** Engineering time spent reviewing coding challenge solutions was reduced
- 59%** Time to hire decreased
- 31%** Onsite to hire ratio went up

## Data-Driven Recruiting EECA Loop for Hiring Engineers

Figure 5. Data-Driven Recruiting EECA Loop for Hiring Engineers



# How to Implement Data-Driven Recruiting When Hiring Engineers

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**N**ow that you understand data-driven recruiting and its many benefits, you're probably wondering how to actually get started. Looking at the examples of the old and new hiring processes highlights the shifts that are going to need to occur in order to really have a data-driven recruiting process.

Don't feel overwhelmed.

It doesn't have to be a daunting process. When you keep the benefits in mind like saving time, money, and solving some of your biggest recruiting headaches, pitching and implementing data-driven recruiting can be pretty simple.

Here are the 11 steps. Let's dive into each one.

- 01** Understand Stakeholders
- 02** Assess Current Process
- 03** Create a Vision
- 04** Outline New Process
- 05** Gather the Right Tools, Resources, and Experts
- 06** Create Skill Assessment Process
- 07** Develop Tests
- 08** Test Your Tests
- 09** Launch New Process
- 10** Analyze
- 11** Iterate

# Essential Steps to Implement Data-Driven Recruiting

## Step 1: Understand Stakeholders

### Who is currently involved in the hiring process?

These are the folks you're going to have to convert to the data-driven recruiting side. The good news is that it shouldn't be too hard - the facts point to the massive benefits in adopting data-driven recruiting.

Since this guide is about hiring engineers, we're focusing on the people typically involved in the process of hiring technical talent. We suggest taking a land-and-expand approach to data-driven recruiting and start by adopting it in one department of your business, in this case the engineering department, and show its results to drive adoption across the entire organization.

The proof is in the pudding when it comes to data-driven recruiting. But, it's still a pretty new and somewhat misunderstood topic. You can be a champion at your organization by successfully adopting best practices and showing the incredible results that are right around the corner.

To get them to understand the importance of true data-driven recruiting, you're going to have to speak their language.

Here's how to pitch data-driven recruiting to the various roles typically involved in the hiring process.



#### **CTO / CIO (or other executive)**

Data-driven recruiting can increase productivity of the whole team by ensuring they aren't wasting time with unqualified candidates. It also provides a competitive advantage in the fierce hiring market and ensures you have the best shot at top talent.



#### **Hiring Managers**

By implementing data-driven recruiting, hiring managers can find better team members faster and avoid spending too much time interviewing unqualified candidates.



#### **Human Resource / Legal**

While you might have skill assessments in your current process, are you able to prove that they don't cause an adverse effect? Implementing data-driven recruiting properly ensures EEOC compliance while increasing diversity and reducing bias by relying on objective and valid skill assessments. It's a win/win for both organizations and candidates - a HR team member's dream.



#### **Team Members**

Highlight how team members can spend less time interviewing and more time building things that really matter at your organization. With data-driven recruiting your entire team stops wasting time with unqualified candidates in both phone and in-person interviews.



#### **Recruiting Operations**

By implementing the data-driven framework, recruiting operations team can refine the hiring machine to make it scale based on assessing skills and measuring data throughout an already optimized process.

## Step 2: Assess Current Process

Now that you've converted everyone to the good side, it's time to sit at the table and examine your current hiring process. The old school hiring process seen above is just an example of a typical hiring process. Map out your process in a similar way and begin to analyze where you're potentially introducing bias. You'll also want to gather baseline statistics on typical recruiting metrics.

### Figure 6. Key Recruiting Metrics



#### Time to fill

Time to fill is the time it takes to find and hire a candidate and is typically measured by the number of days between publishing a job opening and hiring a candidate.



#### Time to hire

Time to hire represents the time it takes for someone to move through the hiring process once they've applied.



#### Source of hires

From the channels that you're currently posting jobs on, which ones are currently performing the best?



#### First year retention

First year retention measures how many team members stay with the company through their first year.



#### Quality of hire

This is often measured by someone's first year performance rating but can also be done earlier.



#### Hire rate

The selection ratio is calculated by dividing the number of hired candidates by total number of candidates.



#### Offer acceptance rate

Measuring how many individuals successfully accepted a job offer by the number of candidates who received an offer reveals problems like low compensation or a long hiring process

### Step 3: Create a Vision

What problems in your hiring process would you want to solve?

What would your dream hiring process look like?

What are the best ways to recruit high-quality engineers?

This is where you set the destiny of your hiring process. While you might be thinking that this is some unnecessary step that only marketers would think about, setting a vision for your hiring process and your engineering teams sets the north star. The north star is something you can refer back to in every step of designing and implementing your data-driven recruiting process. A north star could be:

- 01 Recruiting and training the next generation of technical talent
- 02 Hiring top-tier technical talent
- 03 Cultivating a team that's always learning

Your company's culture comes into play when setting this north star. Are you an organization who puts learning over everything? Maybe you put soft skills above hard skills - or vice versa. Deeply understanding your company's values will impact how you hire and the overall candidate experience you create during your hiring process.

Take the time to really understand your company's needs, priorities, and values before diving into creating your new data-driven recruiting process.

## Step 4: Outline New Process

No one knows your hiring needs better than people within your organization.

This starts with understanding how a new position opens up at your organization. Does a leader raise their hand and say they need someone? Does a team member come to leadership and say they need help?

You should treat this process like you're filling a skill gap at your organization. What skills are missing and what does this person need to be able to do to be successful in this role?

Even with the best of intentions, your team may not be equipped or have the necessary training to create an unbiased assessment or hiring process.

You can refer back to the image above as a reference to a data-driven recruiting process for inspiration.

One of the most important things to consider is how to set the bar for who you're hiring. You want to ensure you don't miss quality candidates or create a huge time suck in the recruiting department. So where do you start?

Begin by assessing your company and the role itself. If you're a large organization that can hire and train candidates to become a great team member, you may be willing to set the bar lower. It doesn't mean you want to open the floodgates unnecessarily, but you can focus on measuring more fundamental skills. If you're a smaller organization or startup - where every member counts and must hit the ground running - have a slightly higher bias and take your time to be selective.

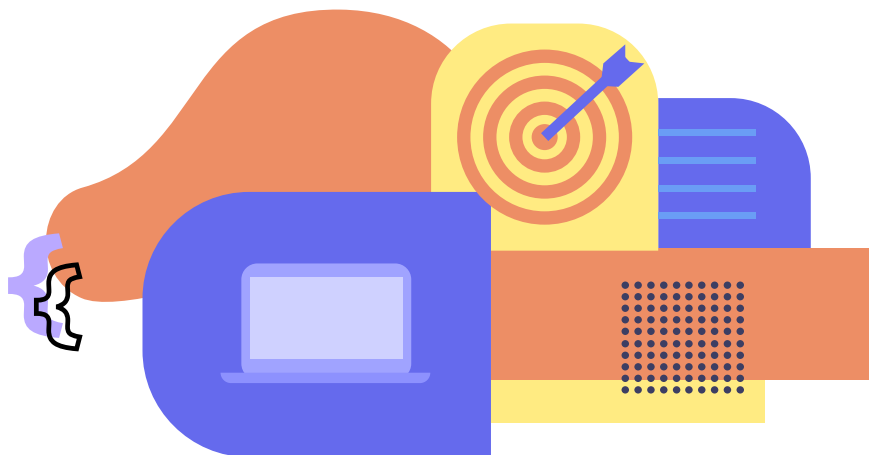
## Step 5: Gather the Right Tools, Resources, and Experts

Ideally, you want to work with professionals who have designed assessments and can help you avoid any landmines. They'll instinctively know how to limit context and comply with the EEOC guidelines, ensuring you won't be favoring one demographic over another.

Bias has many shapes and forms, and it's easy to replace one type with another. Focus on receiving proper training or support and utilize third-party experts to ensure you can eliminate bias once and for all.

You don't need to invest in an entire new tech stack to switch to a data-driven recruiting process. That's overkill.

However, there are things you must be able to verify during your assessment process to ensure you comply with EEOC's Uniform Guidelines on Employment Selection Procedures. Plus, aren't you switching to data-driven recruiting to hire better candidates by measuring hard skills and reducing bias? Being able to verify that should make your company feel great about putting your best foot forward in this new age of recruiting.



## Step 6: Create Skill Assessment Process

Today, many organizations attempt to assess candidate skills by implementing things like take-home tests and whiteboarding quizzes. However, these traditional skill assessments can continue to introduce bias into the process and not actually measure hard skills.

How?

If you're supplying a take-home test, do you know how long it took them to actually complete the assessment? Do you know if they were the one who actually completed it? Did they have to search for hours to find the answers or did the test take them five minutes? You have no idea of knowing these answers when you rely on take-home tests.

We recommend utilizing tests throughout the hiring process. First, you should test at the top-level to gain a sense for basic hard skills. Does the candidate have the hard skills to complete the job?

Once you confirm their core skills, what's next when it comes to measuring talent, specifically as it relates to assessments? Drill down and choose an assessment piece that's more targeted. At this point, you've both decided you want to make the relationship work (everyone is still answering each other's texts so to speak), so this shouldn't be unreasonable to the candidate or an unnecessary burden for the team. This can be done with an automated test if you have a lot of people you're reviewing, or a phone interview if time allows.

Measuring skills and having a data-driven process isn't a single event. Start with high level, standardized assessments and progress to more targeted, individualized reviews as candidates progress. Keeping that data-driven focus throughout the process will ensure that you'll end up with the right hire.



## Step 7: Develop Tests

Test design. What does that actually mean and how important is it in the process of going beyond resumes? It's not just about the assessment because having a bunch of shiny new tests isn't the goal. You can have all the tests in the world, but if you end up with candidates that can't do the job or aren't a good fit for your organization, you haven't gained anything.

The assessment is just a tool in the tool belt, and the goal is measuring the right skills as a way to get to the right candidates. So, let's uncover what ingredients go into the secret sauce.

Like a good friend, a good assessment is defined by its characteristics. What skills does it need to test for and what level of expertise does it need to measure? It should also consider the experience of the test taker. It may be easy to forget, but there's a human on the other end of any assessment. Designing what you consider to be a test extraordinaire doesn't really matter if you're torturing the subject that's taking it (spoiler alert - even if they pass they probably won't want to work for you).

Anything over an hour and people will be turned off. After all, they may want to see their family and friends instead of taking the weekend to hover over a laptop and answer rapid-fire questions. What's the best advice to keep it brief? Step back and determine what really matters. There may be questions you need answered or skills you want to measure but take the time to evaluate if you have to get those answers at THIS stage of the game.

Another common mistake is assuming the steps to creating an assessment are simple. But buying a product off the shelf and testing it with a few in-house engineers works about as well as buying a piece of artwork from eBay and hoping it's a real Van Gogh.

The value isn't in having any piece of art; it's in having a piece of art that was created by an expert. The same is true with assessments. Use experts to ensure you're implementing something that will be effective and also not have an adverse impact on your hiring process - which can cause real problems down the road.

### Sample Assessment Frameworks for Assessing Software Engineers Skills

These assessment frameworks set the stage for how to design an unbiased, high-quality assessment.



#### GENERAL CODING ASSESSMENT

This framework analyzes the overall capabilities every software engineer candidate should have.



#### JAVASCRIPT SPECIALIZED ASSESSMENT

This framework analyzes the overall capabilities every software engineer candidate should have.



#### JAVA SPECIALIZED ASSESSMENT

Measure Java skills and knowledge in a highly consistent and EEOC-compliant way.



#### DATA SCIENCE ASSESSMENT

Enable direct measurement of Data Science skills while helping the technical recruitment industry go beyond resumes

## Step 8: Test Your Tests

An assessment is a valuable tool when it accurately represents the work of the organization. A candidate who has the freedom to complete a project at home then present it to a group of colleagues can experience a real-life scenario they would have as an employee. Both the candidate and the company can evaluate things like motivation, skills and team interaction.

One of the main reasons to begin the process of going beyond resumes is to eliminate bias - while still measuring skills. It sounds straight-forward enough, but good intentions don't always end the way we think they will. Instead, we find that when companies begin to focus on eliminating one form of bias, they can inadvertently introduce a new one. Not exactly a slam dunk.

Let's walk through how this could happen. Your team has acknowledged that relying exclusively on resumes or pedigrees isn't going to work anymore. It's time to start measuring skills directly and implement assessments. So far, so good. The problem shows up when you begin to create those assessments. For example, you want to evaluate a candidate's ability to write code by asking a question, framed in a particular context. The context of the question can very quickly introduce a bias against a particular demographic.

It's a common problem, that isn't just related to recruiting. In the world of education, the SAT is a standardized assessment to measure various skill sets. Although this test is widely accepted, it's been shown that questions on the test reflect a bias. A question framed by a subject like football, for example, will instantly give an advantage to individuals who have knowledge in that area.

After you get your assessments validated by an expert, or work with a certified company, the next best step is to have employees test it.

Existing employees have real-life experience of the necessary job skills and organization, which means their input on the assessment is critical.

Your best bet for any assessment is to avoid topics that certain groups may have higher familiarity with. Which means the most obvious team to help you create an assessment (your team) may be part of the problem.

Unintentionally, companies seek out veteran staff to provide input on standardized questions. But those long-term employees will prepare questions based on what they know to be true, not based on assessment creation skills or even equal employment guidelines. This can be complicated by the current state of a particular group.

Let's talk software engineers for a minute. We know this group is already heavily skewed towards a specific demographic. It stands to reason that when you ask the current demographic to create questions that will attract new individuals, they'll be framed by that group's viewpoint. Which means you're just reinforcing the vicious cycle of recruiting and hiring the same kinds of people.

That's why working with a third-party company or expert to utilize certified standardized tests or to craft your own is the best first step when implementing assessments.

## Step 9: Launch New Process

You have to remember that the hiring process shouldn't just be optimized for your organization, it must also be optimized for the candidate experience. Imagine your team puts in all the work to really understand candidates as a whole, only to be left with the same leads you've always had. No thank you!

Make sure that before you launch you've analyzed your process for these best practices:

- 01 First assessment should be between 60-90 minutes
- 02 Have research to back up the design of your assessments for compliance
- 03 Set clear expectations by outlining your hiring process to candidate at beginning
- 04 You can collect feedback from candidates throughout the process, including at the end of your assessments
- 05 Your interview panel is fully calibrated and you have a standard set of questions to ask during interviews

When companies set clear expectations with their candidates, we see their participation levels increase to the higher side of the average (95% completion rate). Companies who do not set clear expectations can fall to the lower side of the average, around 45% completion rate of assessments. No one wants to settle for less than 50% of anything.

Hiring is all about hitting the sweet spot - whether that's attracting the right candidates, ensuring your process isn't too long to keep their attention, making the right offer, and so much more.

## Step 10: Analyze

Now that you've put the work into implementing a data-driven process, you're going to want to analyze those awesome results, right?

For starters, you're going to want to know what someone's score really means. For example, if someone got 9/10 questions right...is that a good score? Or, do more than 90% of people who take the assessment get that score?. Practitioners of data-driven recruiting need to understand the context of their results. It's important to measure results between candidates, but it's even better if you can compare the results to the overall developer population.

Understanding what your test results really mean is the only way you're going to be successful in data-driven recruiting.

Once you analyze and understand your actual tests results and how they compare against each other and, hopefully, the wider population, you can move on to analyzing the entire process.

This means going back to those baseline statistics like time to fill, time to hire, source of hires, selection ratio, and the other baseline metrics you analyzed in the first step. How have they improved since you implemented data-driven recruiting? Have the top recruiting channels changed?

It's going to take some time to actually be able to measure these longer term results, but it's critical to analyze results so you can pitch data-driven recruiting to the whole organization beyond simply the engineering team. The results will speak for themselves and it should be a piece of cake to convert your team on the power of data-driven recruiting!

## Step 11: Iterate

Just like analyzing, iterating is about both your actual assessments and the overall process.

Data-driven recruiting is all about using data to eliminate bias. This means you should be proactive in how you look for ways bias can creep into your hiring process.

Requesting feedback immediately from any candidate who completes the evaluation is critical. Ideally, the feedback should be included in the testing tool itself, so candidates can offer unbiased input, before they receive word of whether or not they'll move on in the process. Let's be honest, a candidate who gets a rejection letter may be influenced subconsciously to be more critical of the assessment and a candidate who is offered a position more influenced to offer praise.

As you incorporate a commitment to data-driven recruiting, take steps to understand the candidate's experience, ensuring you attract and retain the top talent for your company. If you find that people are dropping off taking assessments, it could mean that they're too complex for the role.

Candidate's feedback can be used to optimize the assessments themselves, along with the overall hiring process. Beyond analyzing a candidate's feedback, analyze the statistics mentioned above so you can focus your time and energy on the recruiting channels that work, getting more high-quality candidates into the funnel, and expanding data-driven recruiting across the entire organization.

# Conclusion

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# CONCLUSION

**H**iring engineers doesn't have to be hard. You can easily attract and retain the talent your organization needs by implementing a process that works for both you and potential candidates.

The first step is going beyond the resume - a document that relies on assessing proxies like education institutions and previous employers to assess abilities and skills. Engineers aren't necessarily known for their marketing abilities, so why rely on a document or their LinkedIn profile for recruiting?

Share this guide with the rest of your team to get them on the data-driven recruiting train. Once they've bought in to the multitude of benefits, it's time to roll your sleeves up and get started.

Have questions about data-driven recruiting? We'd love to answer them on an episode of our Data-Driven Recruiting podcast. Email your ideas to [ddr@codesignal.com](mailto:ddr@codesignal.com).

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**Over the next ten years, data-driven recruiting will become the norm and not the exception. Today you can gain a competitive advantage by getting ahead of the curve.**

- Tigran Sloyan, CEO at CodeSignal



To learn more about data-driven recruiting listen to  
our [podcast!](#)

Have Questions? Email our Founder Tigran,  
[tigran@codesignal.com](mailto:tigran@codesignal.com)