



# Angular vs React Industry Trends

**FEBRUARY 2019 DATA REPORT**



## Introduction

This data report primarily explores data surrounding two popular front-end libraries: Angular and React. Cloud Academy generally releases one public data report per month on a set of technologies or a specific job role. You can explore previous data reports [here](#).

## Why Angular vs. React?

The comparison between Angular and React in front-end web development has been characterized as a front-end “showdown” and a “battle.” Angular is a full-stack web application framework based in Typescript and it is commonly associated with the front-end architecture trend toward Single Page Applications. React is a user interface library based in JavaScript and is commonly associated with the trend toward component-based architecture. Angular is maintained by Google. React is maintained by Facebook. Both have large communities of individual developers and organizations supporting them. The differences are well-documented and at your fingertips with a Google Search.

So why focus an entire Cloud Academy data report on Angular versus React? Behold the power of Data.

## Summary: Angular vs. React 2019 Trends

- Angular is more prevalent than React in corporate use: of full-stack engineer job posts in the Cloud Roster database, Angular was mentioned 59% of the time and React was mentioned 37% of the time
- Developer sentiment is trending more positively for React than it is for Angular
- React interest and use is growing overall among the broader developer community
- Employers are looking for professionals to develop in either React or Angular – typically not both
- Larger companies and those in more established industries are more likely to use Angular; smaller companies are using React. 1000+ employee organizations look for Angular in 80% of new hires and for React in just 20%
- With legal hurdles removed, expect React popularity to begin to spill into the enterprise in 2019



## Testing assumptions with Cloud Roster

Let's start by examining publicly available data.

Techmagic.io has published write-ups on the leading JavaScript frameworks in the past: [first in 2017](#), then again in [2018](#). We are not here to debate or dispute the merits of the qualitative portions of their 2018 write-up on ReactJS vs Angular5 vs Vue.js. In fact, we encourage you to read the post. It provides a thoughtful list of the benefits and drawbacks of each framework.

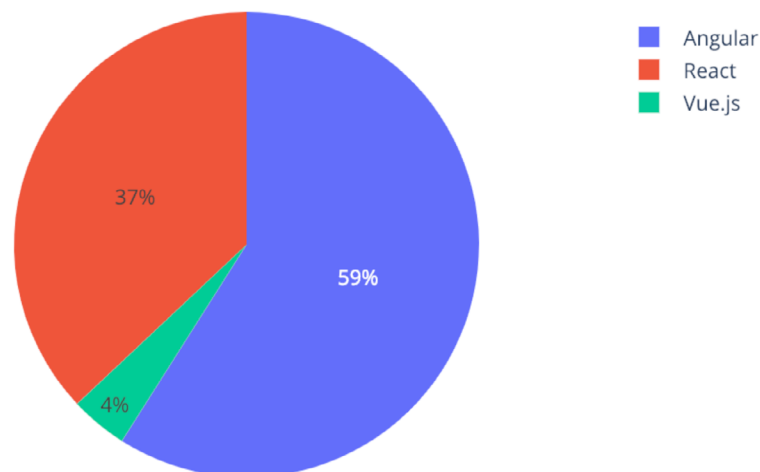
This data report is concerned with available industry trend data, so the data source in their 2018 post caught our eye: indeed.com job posts. If you are reading this, then you may know that, in addition to providing an enterprise technology training platform, Cloud Academy publishes online research tools like Cloud Roster and Catalog. One important data source for Cloud Roster is job posts. On an ongoing basis, we capture an average of 3,000 job posts per day across eight roles, de-duplicate the posts, and analyze them to inform skill demand by technology and role.

The Techmagic.io conclusion (that React was the framework to learn in 2018) is not necessarily incorrect, but their data, which seems to indicate that React had completely outpaced Angular in 2018, is not accurate.

## Angular is maintaining its enterprise lead over React

In fact, among full-stack developer job posts, Angular was mentioned 59% of the time and React was mentioned 37% of the time. (Vue.js was mentioned 4% of the time.) This measure takes into consideration open job posts from our Cloud Roster database over the past two quarters.<sup>1</sup>

Full-Stack Engineer: Angular vs. React vs. Vue.js





It is worth noting our analysis leverages full-stack developer job descriptions – not strictly front-end developer job descriptions. It is possible and even likely that hardcore front-end developers have a much stronger reason to use React than full-stack engineers who must operate up and down tech stacks. At larger organizations, specialization among software engineers is more likely. Consider that one of the consistent top technology skills for [full-stack developers](#), as measured by Cloud Roster, is Java. Angular is based on Typescript, which offers static type checking, providing a more rigorous framework for full-stack engineers accustomed to using strongly typed languages such as Java.

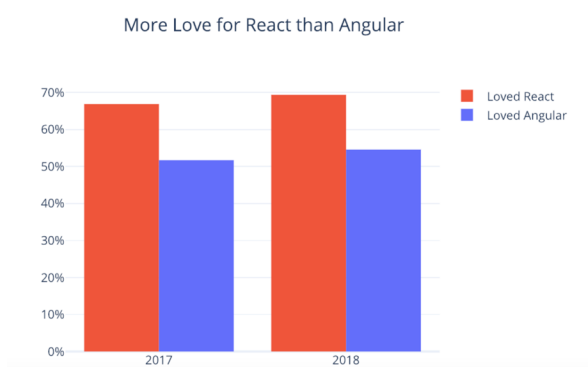
**It is also quite likely, given the nature of the job posts data set, that we are seeing the natural remnants of legacy technology decisionmaking and software availability.** Angular has been around for a few years longer than React and in light of that, demand for React in 37% of engineering roles is quite impressive growth.

## React is popular and growing fast

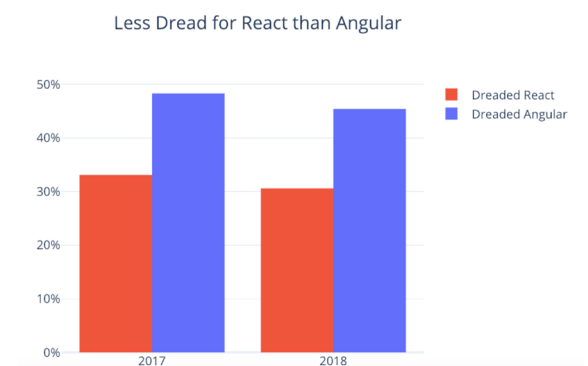
Speak with Cloud Academy front-end engineers, and they will tell you React is the tool of choice. They aren't alone. By many measures, React is on fire. **StackOverflow's developer survey listed React as the #1 "Most Loved Framework" in 2017 and as the second-most-loved in 2018 (only to [Tensorflow](#)).**<sup>2</sup>

On the whole, there's a trend toward more love – and less dread – for both React and Angular, but **there is more love and less dread for React than Angular.**

We've summarized the results from the surveys below.



Year	Loved React	Loved Angular
2017	66.9%	51.7%
2018	69.4%	54.6%

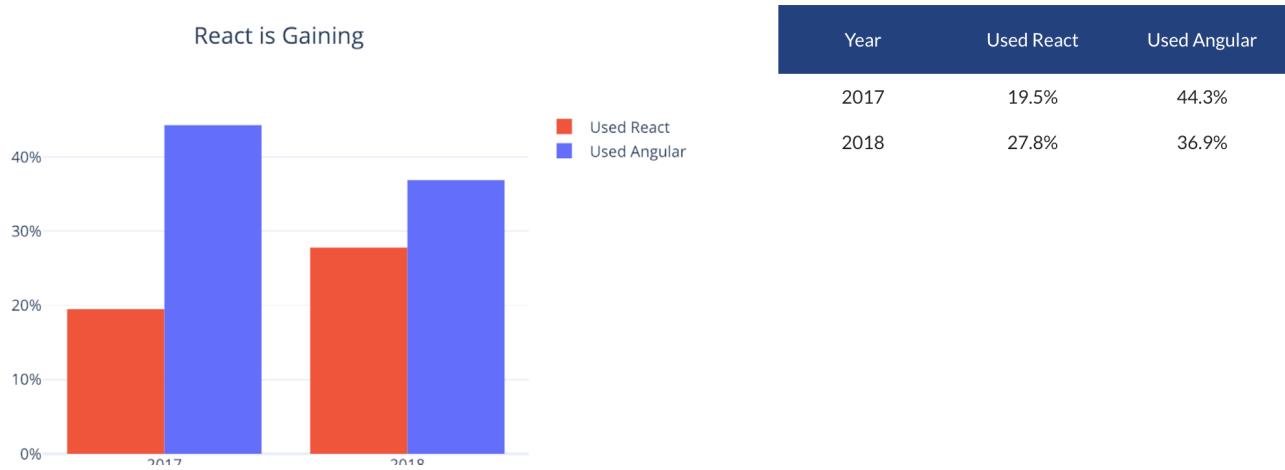


Year	Dreaded React	Dreaded Angular
2017	33.1%	48.3%
2018	30.6%	45.4%



The same survey in 2018 found React to be the single “framework developers say they most want to work with if they do not already.”

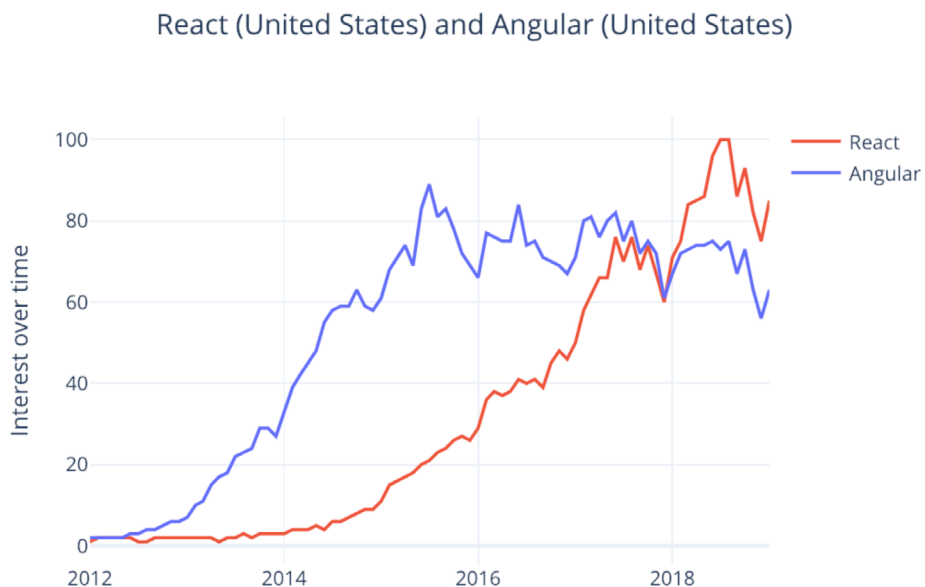
StackOverflow also surveys developers about which technologies they use (irrespective of their feelings toward them). Over the past two years, the data shows a tightening in the race.



Developers’ stated preferences and usage can help us understand the likelihood of a technology remaining on a growth track. **In terms of developer preference, it appears that React is indeed on a growth trajectory and Angular is on a shallow decline.**

## Public interest levels (Google Trends: Angular vs React)

Google Trends data tends to mirror StackOverflow surveyed trends on usage, showing React matching interest in Angular in the United States during the second half of 2017 – and then surpassing it in February 2018.



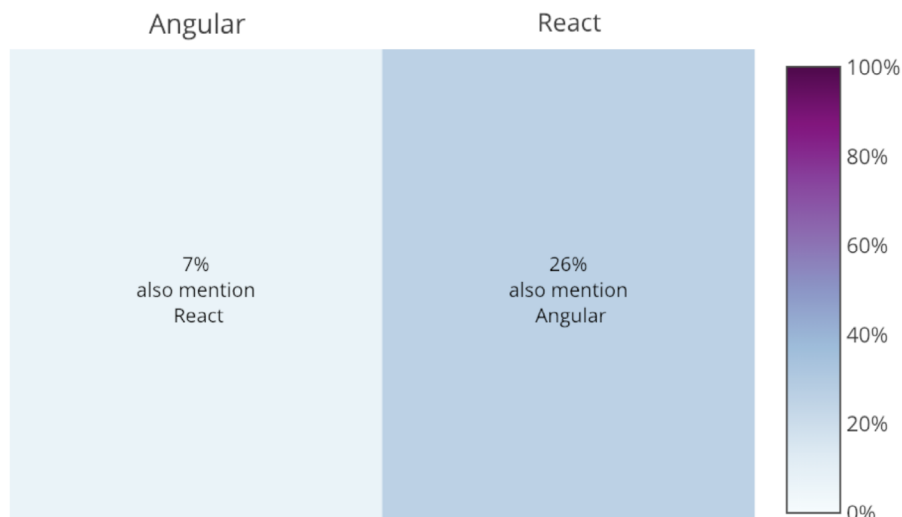


Interest Over Time is explained by the Google Trends team as “search interest relative to the highest point on the chart for the given region and time. A value of 100 is the peak popularity for the term. A value of 50 means that the term is half as popular. A score of 0 means that there was not enough data for this term.”

## Employees are asked to develop in either React or Angular – typically not both

In order to understand the likelihood of React overtaking Angular in the enterprise, we thought it was important to understand one thing that surveys and Google search data doesn't cover – skill interchangeability. We found very little overlap. **Of job posts that mentioned React, just 26% also mentioned Angular and of job posts that mentioned Angular, only 7% mentioned React.**

Skill Proximity: Full-Stack Engineer Jobs Mentioning



To borrow StackOverflow's survey terminology, this means that if you are a developer who loves React and dreads Angular, you will have some convincing (or waiting) to do before your organization makes the switch. The good news for React fans: the wait might be shorter. Some sticky legal issues that prevented companies (who did their due diligence) from using React disappeared in 2017.



## Another Usage Measure (Aggregated StackOverflow Scores: Angular vs React)

Our [Cloud Catalog](#) database stores StackOverflow data in a slightly different manner. We have begun taking snapshots of aggregate question data via the StackOverflow API. One interesting measure of technology usage is the aggregated “score” of questions and their answers by tag. The score for a question on StackOverflow is set based on the sum of all values of all upvotes minus the sum of all downvotes. (It is our belief that changes in this metric by tag could be a predictor of future skill demand in the labor market. For more on how we’re thinking about this, you can read the [postscript](#) below, tweet us [@cloudacademy](#), or [get in touch](#) directly.)

We did some tag clean-up, then aggregated for Angular and React. Here is the snapshot from January 2014 through the last week of January 2019:

Year	Angular	React
% of All StackOverflow Scores	5.70%	2.93%
Aggregate StackOverflow Scores	605,038	311,378

Considering the age of Angular versus React and the fact that Angular has a history of causing developer angst about code-breaking changes with new versions, the aggregate StackOverflow score contribution from React is impressive. We will report midway through 2019 on how these aggregated score snapshots evolve over the next two quarters.

## Who’s recruiting for Angular vs React?

We wanted to understand what types of companies are recruiting for talented professionals with skills in Angular versus React. We matched a significant portion of the full-stack developer posts in the Cloud Roster database to a firmographic enrichment tool.<sup>3</sup>

The results were fairly clear: **Larger companies are recruiting for Angular and smaller companies are recruiting for React.**

Percentage Recruiting for Angular vs React





We also grouped by industry and found that **older, more established industries like the finance sector are more likely to recruit for Angular.**

Sample Group	Recruiting for Angular	Recruiting for React
Finance Industry	84%	16%
Technology Industry	71%	29%

The behavior of smaller and nimbler firms (i.e., not subject to heavy regulation) may be an indicator of what's to come to an architecture conversation near you.

## Another reason that React will grow in the enterprise

So far, we've seen React rocket from zero to what appears to be at parity with or overtaking Angular in developer communities. We've already seen it overtake Angular among smaller organizations.

**There is another reason to expect that React's popularity among developers will spill over into the enterprise over the coming months: its switch in late 2017 to the MIT license.**

An important aspect of maturity (beyond community interest, documentation, and support) is legal in nature. React has a licensing story.

In September of 2017, React changed their licensing model from a custom BSD+Patents license to the MIT license. Under the BSD+Patents license, Facebook essentially had excused itself from any litigation in which it could have been accused of infringing on the licensee's patents. It also entitled Facebook to essentially unilaterally revoke your React license if Facebook deemed you to be a competitor. This posed obvious problems for any organization whose developers wanted to use React. <sup>4</sup>

Facebook was forced to react (pun intended) to an avalanche of criticism from the likes of WordPress and an actual ban from the Apache Foundation during the late-summer and early-fall of 2017. Quincy Larson did a [succinct write-up](#) at the time on the events that ultimately led to [Facebook switching the license](#) over to MIT when React 16 was released on September 26, 2017.

The triumph of the opensource community seems to have accelerated interest in React. Notice the spike in Q4 2017 for React and its subsequent overtaking of Angular in the [Google Trends chart above](#).

Facebook made the change somewhat begrudgingly, but it seems committed to it. You can expect drastically different conversations among your technology teams during front-end re-architecture conversations in the coming months: React is very popular and the licensing showstoppers have been removed.





## Postscript: Building a simple model to predict technology maturity

At this point, a few notes on how we’re contemplating the industry data collected in connection with Cloud Catalog. One simplistic way to think of the data sources that we’ve leveraged so far in terms of predictive power is described in the table below.

	Job Posting Data Source →	Growth Trend or High-Demand	Stagnation Trend or Low Demand
Technology Forum & Search Engine Data Sources →	<b>Growth Trend or Highly Mentioned</b>	<i>Technology is maturing</i>	<i>Technology is nascent</i>
	<b>Stagnation Trend or Few Mentions</b>	<i>Technology is dying</i>	<i>Technology lacks popularity</i>

In the grip of one palm, we have data that is correlated with raw public interest in a technology or tool: snapshots of Q&A forums like StackOverflow and Google Search volume. While new versions of a framework or a newsworthy event could impact metrics coming from these sources, such events cause temporary blips in data. Overall, these are reasonable indicators of interest and usage over time.

In our other hand, we have data that indicates skill demand or, more specifically, unmet skill demand. In this data set, there are two reasons why skill demand goes unmet for a specific technical skill: (1) the technology is growing rapidly and there’s a limited talent pool, or (2) the technology is on its way out and the organization’s tech stack hasn’t caught up. The nature of the organizations doing the hiring provides additional dimensions by which the unmet skill demand can be explained.

Admittedly, this is a relatively tactical view of unmet skill demand. Broader studies examine the technology skills gap endemic to the United States like Gary Beach’s book, [The U.S. Technology Skills Gap: What Every Technology Executive Must Know to Save America’s Future](#). The broader skills gap impacting organizations results from what Beach carefully documents as an inadequate and inactive response from public policy makers affecting America’s math and science educational system. Technology leaders should read and debate Beach’s recommendations. Too few are. Most are caught up in the micro impact of the macro forces he attributes to our hiring woes. Skill deprivation is setting in and the tight U.S. labor market is playing a role in firms’ ability to recruit technical talent.

Cloud Roster’s approach of examining skill demand by job role is relatively tactical, and that’s precisely what makes it actionable for managers at organizations. If you were hiring a full-stack developer, holding all else constant, which would you choose?



	Candidate A	Candidate B	Candidate C
Experience	Angular – 4 years	Angular – 2 years React – 2 years	React – 4 years
Market Rate	\$100k	\$140k	\$100k

The answer obviously must consider technical roadmap and budget. But it is complicated by changes in demand for expertise in platforms and technologies – and the corresponding differences in costs to recruit or train up technical expertise in those areas. **Understanding leading indicators of a technology’s growth arc toward enterprise-grade maturity (or its slump to irrelevancy) enables sounder decision-making and forges a more balanced digital skills profile.**

We have begun collecting data from multiple additional sources that would enable you to bring these insights to your organization, and we look forward to sharing those with you.



## About Cloud Academy

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WRITTEN BY

### Alex Brower

Alex is responsible for go-to-market research, operations, and analysis at Cloud Academy.



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