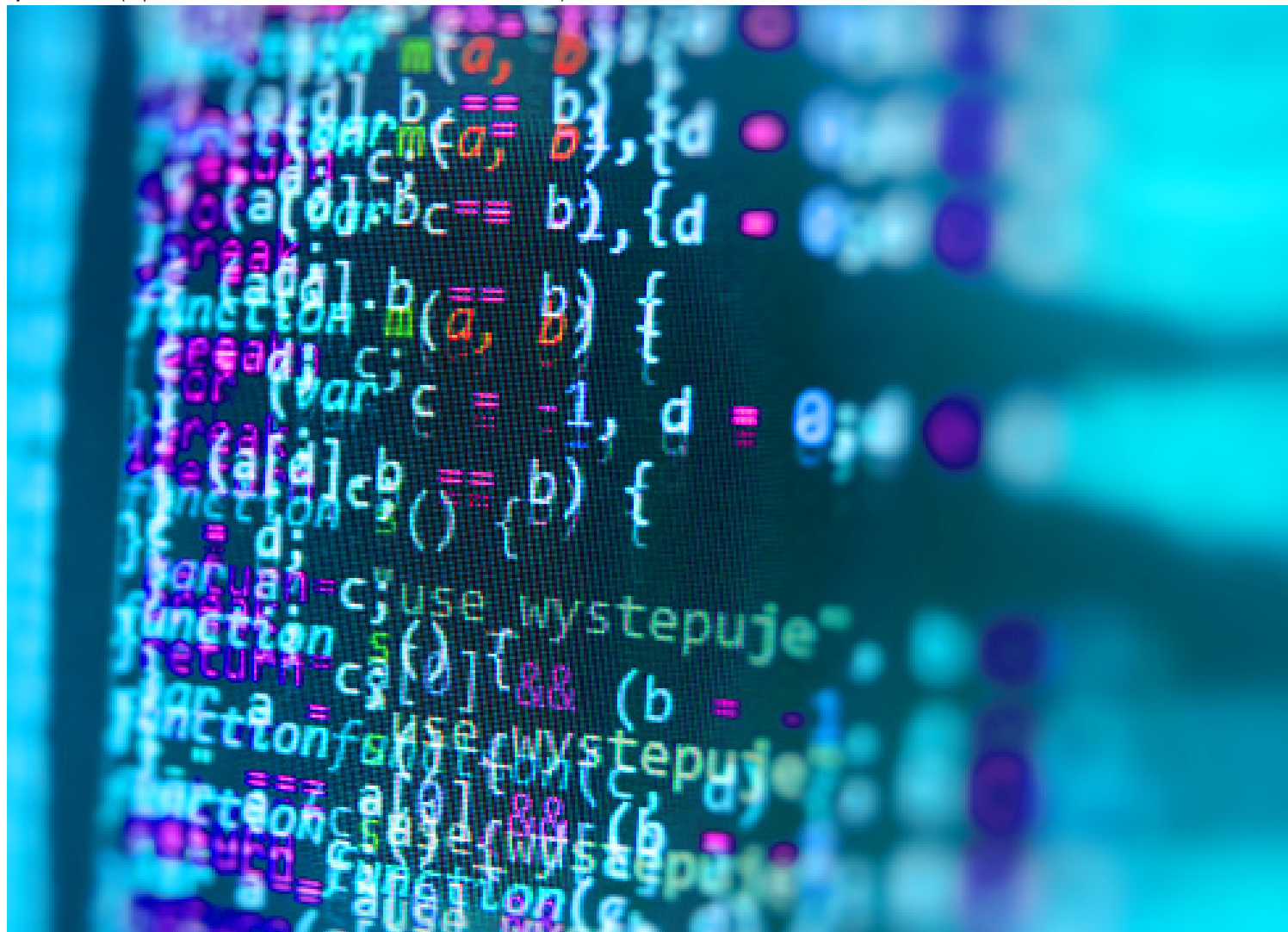


## Julia programming language: this is the new skill hedge funds are asking for

by Dan Butcher (<https://news.efinancialcareers.com/us-en/en/author/dbutcher/>) 3 June 2016



Traders and other financial services professionals who know how to code (<https://news.efinancialcareers.com/us-en/228154/how-to-learn-to-code/>) have a leg up on less tech-savvy candidates, as there are an increasing number of jobs available to them as banks and asset managers cut back in other areas. For example, many quant hedge funds (<https://news.efinancialcareers.com/us-en/237294/quant-hedge-funds-are-ramping-up-their-hiring-heres-what-they-look-for-in-candidates/>) have continued their hiring push with an emphasis on candidates who have strong computer skills and investment knowledge. No financial services firm can ignore the need to invest in people that understand technology (<https://news.efinancialcareers.com/us-en/244842/essential-skills-that-will-keep-you-employed-on-wall-street/>) to keep it at the forefront of the industry and ahead of its competitors.

So you know your way around a computer and you've heard of C#, C++, Java, SQL, Hadoop, HTML5 (<https://news.efinancialcareers.com/us-en/246253/hottest-programming-languages-in-singapore-banking-technology/>), Python (<https://news.efinancialcareers.com/us-en/236550/python-coding-finance-job/>) and R (<https://news.efinancialcareers.com/us-en/244980/get-a-financial-analytics-and-data-science-job-by-learning-the-r-programming-language/>). But what about Julia? While it's still early days and Julia is not yet among the most in-demand programming languages on Wall Street (<https://news.efinancialcareers.com/us-en/197544/demand-programming-languages-wall-street/>), its user base is already approaching 200,000 and its growth rate is doubling every nine months, with hedge funds among the early-adopters.

That means Julia should be on the radar of everyone from traders and operations executives to IT managers, developers and data scientists and really anyone who wants to expand their job options (<https://news.efinancialcareers.com/us-en/244842/essential-skills-that-will-keep-you-employed-on-wall-street/>) as electronic trading takes over (<https://news.efinancialcareers.com/us-en/245138/pit-traders/>) and the industry as a whole becomes more technology-centric.

We spoke with Viral Shah, co-founder of Julia Computing (<https://julialang.org/>), about the evolution and current status of this fast-growing open-source programming language.

## How did your collaboration with MIT lead to the creation of Julia Computing?

We started the project that became the Julia programming language in 2009.

I am a computational scientist by training. My thesis at the University of California, Santa Barbara focused on parallel computing and it became part of the Star-P product at Interactive Supercomputing Corp. When Microsoft acquired the firm, [co-founder] Jeff Bezanson and I started talking about a new approach to parallel computing. At the same time, [co-founder] Stefan Karpinski and I were discussing the same issues in our research collaboration at UCSB. Jeff asked [co-founder] Alan Edelman, who was also on my thesis committee, about joining the Ph.D. program at MIT, and the four of us came together.

We set out to solve the “two language problem” back in 2009. Much of our progress in parallel computing was thwarted by the fact that while the users are programming in a high-level language such as R and Python, the performance-critical parts have to be rewritten in C/C++ for performance. This is hugely inefficient, because it introduces human error and wasted effort, slows time to market and allows competitors to leapfrog ahead. This two language problem hinders not just researchers, but also quants, scientists, data scientists and engineers in the industry.

Many of the earliest adopters were quantitative analysts (<https://news.efinancialcareers.com/us-en/245706/traders-can-use-predictive-analytics/>) in the finance industry.

## How are financial services firms using Julia in terms of practical applications?

The rapid adoption of Julia in finance is due to the particularly severe effect of the two language problem in that industry.

Algorithmic traders and quants (<https://news.efinancialcareers.com/us-en/245264/quants-and-traditional-traders-and-hedge-fund-managers-will-have-to-master-both-fundamental-and-quantitative-trading/>) want to write algorithms in high-level languages and then deploy them without having to rewrite them in Java or C++. That rewrite process is common, and it destroys their time to market. It is not uncommon for large financial institutions to have in-house languages trying to do what Julia does for this very reason, but having an open-source language built on best-of-breed compiler technology is far better.

Solving this key business pain point of avoiding to rewrite code in the high-level language is driving the adoption of Julia in finance. It is being used by large hedge fund managers, long-only asset management firms, insurance companies and investment banks. Even U.S. regulators are adopting Julia – it is being used at the New York Federal Reserve Bank (<https://libertystreeteconomics.newyorkfed.org/2015/12/the-frbny-dsge-model-meets-julia.html#.V1CMI8ArJD8>) and the Federal Aviation Administration (<https://www.youtube.com/watch?v=19zm1Fn0S9M>).

I would say that Julia is currently at the point where the early-adopters have already come onboard. We have incorporated feedback from the open-source [web development] and finance communities and are actively moving towards mass adoption, not only in finance but many other domains as well such as engineering.

## Will Julia be a more sought-after skill in finance?

Absolutely. The Times of India (<https://timesofindia.indiatimes.com/tech/tech-news/New-age-IT-skills-can-double-your-pay/articleshow/51386706.cms>) reported that knowing Julia could double your pay.

This is also happening from both ends. Financial services firms see Julia giving them unfair competitive advantages due the combination of performance and productivity. Simultaneously, more and more students are graduating from universities having learned Julia.

Follow @danbutchrwrites

1,941 followers



eFinancialCareers

Like Page

152K likes

## Related articles:

## The most in-demand programming languages on Wall Street (<https://news.efinancialcareers.com/us-en/197544/demand-programming-languages-wall-street/>)

We conducted an informal survey of banking technology recruiters to see which programming languages their clients are asking for most.



(<https://news.efinancialcareers.com/us-en/197544/demand-programming-languages-wall-street/>)

## How to learn the R programming language to secure this hot finance job (<https://news.efinancialcareers.com/us-en/244980/get-a-financial-analytics-and-data-science-job-by-learning-the-r-programming-language/>)

High-frequency/low-latency trading shops and other financial firms use the R programming language and need people who can develop analytical programs.



(<https://news.efinancialcareers.com/us-en/244980/get-a-financial-analytics-and-data-science-job-by-learning-the-r-programming-language/>)

## Quant hedge funds are hiring – this is what they look for (<https://news.efinancialcareers.com/us-en/237294/quant-hedge-funds-are-ramping-up-their-hiring-heres-what-they-look-for-in-candidates/>)

Quant hedge funds are flying while other strategies are tumbling. They're hiring, and this is what they're looking for.



(<https://news.efinancialcareers.com/us-en/237294/quant-hedge-funds-are-ramping-up-their-hiring-heres-what-they-look-for-in-candidates/>)

Photo credit: maciek905 (<https://www.thinkstockphotos.co.uk/search/2/image?artist=maciek905&family=creative&stock=thinkstock>)

## Comments (2)

Oldest First (<https://news.efinancialcareers.com/us-en/246387/boost-your-salary-by-learning-the-julia-programming-language/oldest/>)

Latest First (<https://news.efinancialcareers.com/us-en/246387/boost-your-salary-by-learning-the-julia-programming-language/latest/>)

Seems like growin up of new interesting language. Pararell programming is not easy to adapt by procedural or object oriented programming, however if this gives productiveness it is fine. I am interested what kind of license this programming language has. Is it free to use or is it proprietary?

I also think that productiveness has many factors – reasons, not only entire programming language, but it managers, motivation of programmer, skills and knowledge.

Cyan Reply (<https://news.efinancialcareers.com/us-en/246387/boost-your-salary-by-learning-the-julia-programming-language/?replytocom=110732#respond>)

who knows if Julia will ever become de facto..

I've seen lots of such ideas come and go, never to be heard again

quant guy Reply (<https://news.efinancialcareers.com/us-en/246387/boost-your-salary-by-learning-the-julia-programming-language/?replytocom=110743#respond>)

# React

Screen Name

Email

The email address you provide will not be made visible anywhere on the site.

I'm not a robot

reCAPTCHA  
Privacy - Terms

**Submit Comment**

Consult our community guidelines here (<https://news.efinancialcareers.com/page/efinancialcareers-community-guidelines-policy>)

Search news by keyword

## Search 10999 Jobs

Job title, Company, Sector, Skill

City, Country, Zipcode

**Search Jobs**

### Top Sectors (<https://www.efinan...>)

Accounting & Finance **2266**

([https://www.efinancialcareers.com/jobs-Accounting\\_\\_Finance.s001](https://www.efinancialcareers.com/jobs-Accounting__Finance.s001))

Asset Management **1792**

([https://www.efinancialcareers.com/jobs-Asset\\_Management.s002](https://www.efinancialcareers.com/jobs-Asset_Management.s002))

Compliance/Legal **1105**

(<https://www.efinancialcareers.com/jobs-ComplianceLegal.s005>)

Credit **446**

(<https://www.efinancialcareers.com/jobs-Credit.s008>)

FX & Money Markets **208**

([https://www.efinancialcareers.com/jobs-FX\\_\\_Money\\_Markets.s012](https://www.efinancialcareers.com/jobs-FX__Money_Markets.s012))

- Information Technology **2211**  
([https://www.efinancialcareers.com/jobs-Information\\_Technology.s019](https://www.efinancialcareers.com/jobs-Information_Technology.s019))
- Investment banking/M&A **812**  
([https://www.efinancialcareers.com/jobs-Investment\\_bankingMA.s021](https://www.efinancialcareers.com/jobs-Investment_bankingMA.s021))
- Operations **964**  
(<https://www.efinancialcareers.com/jobs-Operations.s025>)
- Private Equity & Venture Capital **441**  
([https://www.efinancialcareers.com/jobs-Private\\_Equity\\_\\_Venture\\_Capital.s027](https://www.efinancialcareers.com/jobs-Private_Equity__Venture_Capital.s027))
- Risk Management **1194**  
([https://www.efinancialcareers.com/jobs-Risk\\_Management.s033](https://www.efinancialcareers.com/jobs-Risk_Management.s033))
- Sales & Marketing **745**  
([https://www.efinancialcareers.com/jobs-Sales\\_\\_Marketing.s034](https://www.efinancialcareers.com/jobs-Sales__Marketing.s034))
- Trading **268**  
(<https://www.efinancialcareers.com/jobs-Trading.s035>)

[View all](#)



eFinancialCareers  
152,203 likes

Like Page
Share

5 friends like this

## eFinancialCareers

[About Us \(https://news.efinancialcareers.com/uk-en/page/about-us\)](https://news.efinancialcareers.com/uk-en/page/about-us)

[Editorial Team \(https://news.efinancialcareers.com/uk-en/page/meet-our-english-language-emea-editorial-team\)](https://news.efinancialcareers.com/uk-en/page/meet-our-english-language-emea-editorial-team)

## Contact Us

[Work at eFinancialCareers \(https://news.efinancialcareers.com/uk-en/page/work-at-efinancialcareers\)](https://news.efinancialcareers.com/uk-en/page/work-at-efinancialcareers)

[Contact Us \(https://news.efinancialcareers.com/uk-en/en/contact-us\)](https://news.efinancialcareers.com/uk-en/en/contact-us)

## Links

[Site Map \(https://www.efinancialcareers.co.uk/sitemap/html\)](https://www.efinancialcareers.co.uk/sitemap/html)

[eFinancialcareers jobs search \(https://www.efinancialcareers.co.uk/search\)](https://www.efinancialcareers.co.uk/search)