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| Searching for Unicorns - The Data Scientist Skills Gap 101  *“The Tech Skills Gap Reimagined”* |
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# Searching for Unicorns - The Data Scientist Skills Gap 101

## “The Tech Skills Gap Reimagined”

Data Scientist jobs rank as one of the top jobs in 2016. There is high demand and low availability making these roles expensive and challenging to fill.  As a hiring manager you need to get it right.

**What does a Data Scientist do?**A data scientist is a hybrid scientists/software engineer/business person and their job is to analyze large amounts of data and turn their findings into competitive advantage for the organizations they work for.

**What is the difference between a Data Scientist and a Data Engineer?** A Data Engineer is involved in identifying and implementing data analysis tools and working with database teams to ensure that data is prepared for analysis. They do not need the variety of skills that a Data Scientist requires.

**What is the role of Data Analytics in a business?**According to Ed Burns in his article Bring Data Analysis to the Masses, *"The goal of basing decisions on data is simply to make the right decision more often than you would when relying on intuition."*

**What skills do Data Scientists have?**  Their skill set includes analytics, data mining, machine learning and statistics, plus experience with algorithms and coding. They are individuals with innate curiosity and the most valuable are business-minded.  Because of this unique combination of skills they are often referred to as 'unicorns'.

**What makes them so valuable?**They not only analyze data but also can turn their research findings into products and services that help companies gain a competitive edge and generate revenue.

**How long has there been a demand for this role?**Data Scientists have been in demand since around 2014.  This is about the time large organizations began to pay attention to 'big data' and see the potential it had to help them stay ahead of their competitors and assist their transformation initiatives.  Many had made investments in data warehouse initiatives.

**What is the median salary for a Data Scientist?**  According to job listing provider, Glassdoor Inc. the median salary is $116,840 U.S.

Craig Stedman, Executive Editor of SearchBusinessAnalytics recently wrote an excellent article titled "***Building Data Scientists Teams takes Skills Mix and Business Focus"*** which appeared in Information Management Digest.  Here are some of my take always from this article, which was based upon an expert panel of managers of data science initiatives, from the recent **Strata + Hadoop World 2016 Conference**:

* Data Scientists are difficult to find.  The role requires a unique combination of technical skills coupled with business acumen and analytics.
* Hire the right people at the right time.  If you hire too early your data scientists could get bored with nothing to analyze.
* Look for people that have a 'get things done' attitude.
* Identify candidates that are grounded and can understand what's feasible, what's doable and what's important.
* Communication/educator skills are important in these jobs - so that analytical findings can be explained to business executives in understandable terms.
* To ensure co-operation between data scientists and data engineers have them work in the same team.
* Allocate time for data scientists to do exploratory analytics work to keep them engaged.
* Emphasize the business problem they are solving and the impact of the work they are performing on the organization.

**How long can it take to fill a Data Scientist role?**On average companies are saying it takes 6 months or more to find the right candidate.

**Where can I find Data Scientist candidates?** There is a war on for technical talent.  With huge numbers of baby boomers retiring over the next few years it is likely to intensify.  The first thing you should do is developing an overall technical talent master plan.  By taking a holistic approach to the problem you will feel in control and understand your options.

Some of the tactics you can employ to specifically find Data Scientist talent includes:

Work with a recruiting company that specializes in hard to find talent.

Another longer-term tactic is to partner with a local university or community colleges that is offering programs producing data scientists.  Unfortunately there are few universities or colleges that have Data Scientist programs.[[1]](#footnote-1) A study by Amy Gershkoff, Chief Data Officer at Zynga and adjunct professor at the University of California, Berkeley, Haas School of Business found that only 29% of the U.S. News and World Report’s top 100 universities globally are offering degree programs in data science. In most cases they focused on technical skills or business acumen but rarely both – which is needed by those in the data science field. Gershkoff mentions Northwestern, New York University and UC Berkeley as examples of institutions that are blending technical content with real-world business applications. According to Tom Davenport, the president’s distinguished professor of information technology and management, Babson College, his employer, is another institution bridging the technical and business skills.

You may also want to expand your Early Talent or Internship Program to include data scientist positions and offer them an internship, capstone or summer job early in their career. This is also a great way to identify the talented 'unicorns' that will be a fit with your organization.

Other organizations with high demand for Data Scientists have developed unique Boot Camp programs to develop their own pipeline of candidates.   There are also some interesting intensive Data Scientist Boot Camps, which are popping up across the country.

**What if I can't find or afford a Data Scientist?**  There is a current move towards putting a team together that collectively would have the skills that are required.  The cross-functional group approach could include a business analyst and data engineer, as well as product managers that tie the analytical effort back to business objectives.  A shared interest common to all is recommended.  R is a popular statistical programming language that could provide the common thread.

**Where should you start?**

* If you don’t have a Talent Skills Gap Strategy this is a good place to start because it forces you to look at all aspects of the challenge relative to your company.
* Create an accurate job description and ask yourself if you really need a Data Scientist or if a Data Engineer could do the job. If you are a large organization you will likely need the Data Scientist but if you are a smaller organization you may find the Data Engineer coupled with a team that provides additional key skills may be just what you need and easier to find.
* Ask yourself if you are preventing candidates from being hired through your own practices? Look critically at the job description and your hiring practices to make sure you are not inadvertently excluding qualified candidates. An example of this might be a statement that says you require 5 – 7 years experience. With Data Scientists jobs being in such short supply, you may need to rethink job requirements that while reasonable in the past are too restrictive today.
* Look at your budget around on-the-job training. *Ask yourself whether someone with most of what you want could pick-up the necessary skills through additional and whether you need to change your financial support in this area and make it a priority.*
* Review your IT culture and ask yourself if there are simple things you could do to make improvements. Something as simple as recognizing someone’s birthday or having a candy or beverage bar can go a long way for little cost.
* *Ask yourself what skills you really need from candidates coming out of school.* Work with industry associations, universities and colleges to lobby for development of programs offering these skills.

LegacyNEXT: *“The Tech Skills Gap Reimagined”*

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Based in Toronto, Susan’s focus is at the intersection of People, Process and Technology. LegacyNEXT helps organizations develop talent and culture strategies that mitigate the business risk associated with the technology skills shortage. Susan and her team bring thought leadership and innovation to *“Reimagine the Tech Skills Gap.”* ‘You can contact Susan at 416.659.0511 or susan.dineen@legacynextstrategies.com

1. http://searchcio.techtarget.com/news/4500269097/Universities-arent-doing-enough-to-fix-the-analytics-talent-drought [↑](#footnote-ref-1)