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January 7, 2015

9 Must-Have Skills to Land Top Big Data Jobs in 2015

Alex Woodie

The secret is out, and the mad rush is on to leverage big data analytics tools and techniques for competitive advantage before they become commoditized. If you're in the market for a big data job in 2015, these are the nine skills that will garner you a job offer.

1. Apache Hadoop

Sure, it's entering its second decade now, but there's no denying that Hadoop had a monstrous year in 2014 and is positioned for an even bigger 2015 as test clusters are moved into production and software vendors increasingly target the distributed storage and processing architecture. While the big data platform is powerful, Hadoop can be a fussy beast and requires care and feeding by proficient technicians. Those who know there way around the core components of the Hadoop stack–such as HDFS, MapReduce, Flume, Oozie, Hive, Pig, HBase, and YARN–will be in high demand.

2. Apache Spark

If Hadoop is a known quantity in the big data world, then Spark is a black horse candidate that has the raw potential to eclipse its elephantine cousin. The rapid rise of the in-memory stack is being proffered as a faster and simpler alternative to MapReduce-style analytics, either within a Hadoop framework or outside it. Best positioned as one of the components in a big data pipeline, Spark still requires technical expertise to program and run, thereby providing job opportunities for those in the know.

3. NoSQL

(http://2s7gjr373w3x22jf92z99mgm5w.wpengine.netdna-cdn.com/wp-content/uploads/2015/01/big-data-skills-and-dollas.png)
Source: Dice Tech 2014 Salary Survey

On the operational side of the big data house, distributed, scale-out NoSQL databases like MongoDB (http://www.mongodb.com) and Couchbase (http://www.couchbase.com) are taking over jobs previously handled by monolithic SQL databases like Oracle (http://www.oracle.com) and IBM (http://www.ibm.com) DB2. On the Web and with mobile apps, NoSQL databases are often the source of data crunched in Hadoop, as well as the destination for application changes put in place after insight is gleaned from Hadoop. In the world of big data, Hadoop and NoSQL occupy opposite sides of a virtuous cycle.

4. Machine Learning and Data Mining

People have been mining for data as long as they've been collecting it. But in today's big data world, data mining has reached a whole new level. One of the hottest fields in big data last year is machine learning, which is poised for a breakout year in 2015. Big data pros who can harness machine learning technology to build and train predictive analytic apps such as classification, recommendation, and personalization systems are in super high demand, and can command top dollar in the job market.

5. Statistical and Quantitative Analysis

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This is what big data is all about. If you have a background in qua

(http://2s7gjr373w3x22jf92z99mgm5w.wpengine.netdna-cdn.com/wp-content/uploads/2015/01/R.png)ntitative reasoning and a degree in a field like mathematics or statistics, you're already halfway there. Add in expertise with a statistical tool like R, SAS, Matlab, SPSS, or Stata, and you've got this category locked down. In the past, most quants went to work on Wall Street, but thanks to the big data boom, companies in all sorts of industries across the country are in need of geeks with quantitative backgrounds.

6. SQL

The data-centric language is more than 40 years old, but the old grandpa still has a lot of life yet in today's big data age. While it won't be used with all big data challenges (see: NoSQL above), the simplify of Structured Query Language makes it a no-brainer for many of them. And thanks to initiatives like Cloudera (http://www.cloudera.com)'s Impala, SQL is seeing new life as the *lingua franca* for the next-generation of Hadoop-scale data warehouses.

7. Data Visualization

Big data can be tough to comprehend, but in some circumstances there's no replacement for actually getting your eyeballs onto data. You can do multivariate or logistic regression analysis on your data until the cows come home, but sometimes exploring just a sample of your data in a tool like Tableau (http://www.tableau.com) or Qlikview (http://www.qlik.com) can tell you the shape of your data, and even reveal hidden details that change how you proceed. And if you want to be a data artist when you grow up, being well-versed in one or more visualization tools is practically a requirement.

8. General Purpose Programming Languages

Having experience programming applications in general-purpose languages like Java, C, Python, or Scala could give you the edge over other candidates whose skill sets are confined to analytics. According to Wanted Analytics (https://www.wantedanalytics.com/analysis/posts/programmers-see-biggest-growth-in-big-data-hiring), there was a 337 percent increase in the number of job postings for "computer programmers" that required background in data analytics. Those who are comfortable at the intersection of traditional app dev and emerging analytics will be able to write their own tickets and move freely between end-user companies and big data startups.

Source: Wanted Analytics 2014 hiring survey

9. Creativity and Problem Solving

No matter how many advanced analytic tools and techniques you have on your belt, nothing can replace the ability to think your way through a situation. The implements of big data will inevitably evolve and new technologies will replace the ones listed here. But if you're equipped with a natural desire to know and a bulldog-like determination to find solutions, then you'll always have a job offer waiting somewhere.

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