



A Guide To What You Should Know:

Breaking Into Analytics

Northeastern University



The proliferation of data across all sectors of the global economy has given rise to one of the most in-demand, booming fields today: Analytics.

Data is transforming and powering business everywhere—from hospitals and cities to higher education and corporations. As a result, workforce needs have shifted dramatically. Companies are searching for qualified candidates who possess both a deep understanding of the mechanics of working with data, and the capacity to identify and communicate the data-driven insights that ultimately influence business decisions.

This has sparked a hot hiring market—and it's getting hotter. With more than 2.3 million job openings today, experts predict that by 2020, that number will swell to more than 2.7 million. And because qualified professionals are difficult to find, these analytics jobs pay quite well.

“The analytics field is growing substantially, and there’s market demand for skilled workers,” says Uwe Hohgrawe, lead faculty member for Northeastern University’s Master of Professional Studies in Analytics program. “Businesses are trying to make sense of all this big data and how they can use it to be competitive.”

Many of these jobs require candidates with both experience and advanced degrees. In a burgeoning, new field, that’s not easy to find. Eighty-one percent of all analytics job postings seek workers with at least three years of prior work experience, and many of these roles—the highest-paying ones, in particular—require a master’s degree.

As a result, analytics jobs in certain industries can take twice as long to fill than the national benchmark average. Employers hope that this urgent need for talent with the right skills, education, training, and experience will encourage more professionals to enter the analytics field.

The Skills for Success

The necessary skills that businesses desire in analytics professionals vary based on the job and responsibilities, but all require problem-solving, communication, creativity, and teamwork.

“Anyone can learn statistics, but the differentiators are the soft skills: business analytics agility; how you manage projects; process management; communicating with different stakeholders; cultural sensitivity; leadership skills,” Hohgrawe says. “These are what really make the difference in a company today.”

Analytics jobs usually fall into two categories, each with a different skill set focus: analytics-enabled jobs and data science jobs.

Analytics-enabled jobs include chief executive officers, chief data officers, directors of information technology, financial managers, business analysts, and marketing

managers, for example. This subset of professionals need to know how to use analytics to identify customer needs, how to detect unusual activity in real-time dashboards, or how to forecast inventory using predictive analytics. These jobs require hands-on experience with reporting and visualization software to assist in the collection and examination of data.

“They need a basic understanding of analytics to enable them to make decisions faster,” Hohgrawe says. “If you know a little more about how a car operates and how the engine works, you’re able to make a decision quicker, for example.”

Data science jobs, on the other hand, are the most analytical roles in the market and focus on aptitudes that entrepreneurs and innovators need. These professionals must be experts in programming and applied science, and must be proficient with large ranges of specialized analytical skills and tools, such as machine learning, Apache Hadoop, and data mining, in addition to SQL, Python, and data analysis, according to [IBM](#).

The ROI of Analytics: Careers and Compensation

Analytics is a lucrative and high-growth field, and can be a great way to progress your career while building off your prior knowledge. Data-literate professionals are valued across all industries, in all corporate divisions, and at all seniority levels. As such, there is a wide range of jobs with impressive salaries that seek people who can analyze, organize, and interpret data.

Data scientist and advanced analyst jobs are expected to grow 28 percent by 2020.

(IBM, 2017)

Functional Analysts

These professionals use data and models to inform domain-specific decisions. These professionals might find themselves in roles that include actuaries, business/management analysts, financial analysts, and operations analysts, for example.

Career Outlook

Total Job Postings:
770,441

Salary Range:
\$100,000-\$146,250

Projected Five-Year
Growth: **15%**

(PwC, 2017; Robert Half, 2017; IBM, 2017)

Data-Driven Decision Makers

There's a growing demand at the top of organizations for data-driven executives—the CEOs, CIOs, and CDOs of businesses; and financial, HR, and marketing managers, for example—who can connect the dots and build successful business, digital, talent acquisition, and marketing strategies using massive amounts of unstructured data.

Career Outlook

Total Job Postings:
812,099

Salary Range:
\$108,000-\$279,000

Projected Five-Year
Growth: **11%**

(PwC, 2017; Robert Half, 2017; IBM, 2017)

Data Analysts

Data analysts fill jobs such as business intelligence architects, computer systems engineers, data warehousing specialists, data administrators, database architects, and systems analysts. These professionals design, build, and maintain an organization's data and analytical infrastructure.

Career Outlook

Total Job Postings:
124,325

Salary Range:
\$75,000-\$180,000

Projected Five-Year
Growth: **17%**

(PwC, 2017; Robert Half, 2017; IBM, 2017)

Business Analysts

Business analysts are a subset of management analysts who work with organizations to identify problems within business structures and help to develop solutions. They use a variety of tools and techniques from interviewing employees to analyzing documents and data to find out what issues may be present.

Career Outlook

Total Job Postings:
350,000

Salary Range:
\$90,000-\$138,000

Projected Five-Year
Growth: **3.6%**

(PwC, 2017; Robert Half, 2017; IBM, 2017)

Data Scientists and Advanced Analysts

These professionals develop and implement processes and systems to extract knowledge or insights from data, and are the most challenging positions to fill compared to the market average.

Career Outlook

Total Job Postings:
48,347

Salary Range:
\$80,000-\$163,500

Projected Five-Year
Growth: **23%**

(PwC, 2017; Robert Half, 2017; IBM, 2017)

Emerging Fields for Analytics Professionals

These skilled analytics and data professionals are found across all industry verticals, including a number of emerging fields.

» **Health Data Analytics:** The health data analytics field combines health informatics, data science, and computational modeling, and has a strong demand for certified health data analysts.

- » **Higher Education:** There's a shortage of data-driven professionals in higher education leadership roles. These professionals include chief academic officers, directors of learning analytics, learning analytics specialists, and directors of institutional research.
- » **Urban Informatics:** Given the continuous growth in urban data and technology, urban informatics professionals will be essential to shaping the future of urban areas around the globe and tackling key social, infrastructural, and environmental changes.
- » **Geospatial Services:** As the world continues to use and rely on geographical data, geospatial professionals and their skills have become invaluable in diverse areas like climate change modeling, surveying, commercial agriculture and more.

» **Artificial Intelligence:** Artificial Intelligence and Machine Learning are playing an increasingly important role in enterprises, in the private and public sector. This field is rapidly growing with a predicted 2.3 million jobs by 2020.

39% of data scientist and advanced analyst roles require a master's degree.

(IBM, 2017)

An Insider's Perspective

Is an advanced degree in analytics the right move for me? Here's why some recent Northeastern alumni chose to pursue a master's degree and how it has benefited them:

“ Stephen O'Halloran, Master of Science in Health Informatics, '14, and CIO of Community Affiliates at Beth Israel Deaconess Medical Center

The program allowed me to understand the differing healthcare IT environments, from hospitals and vendors to payers, patients, and doctors. I have used my Northeastern experience to help me with a leadership role in my organization in which I brought together three community hospitals onto one common hospital information system. One of the classes focused explicitly on the exercise of getting the budget right to complete the work. Looking back, this was very helpful.

“ Melisa Lacroix, Master of Education in Learning Analytics, '17, and database administrator at Ladue Schools

I was able to apply a lot of what I learned to my current job. I didn't previously have a degree in education, so getting the foundational knowledge about how people learn, how to assess learning, and how to measure learning gave me a better-informed foundation for my work with data. The analytics portion of the program was also key, because what I was using in the workplace was a result of self-taught efforts. Being formally educated in learning analytics and better understanding the field, where it came from, and where it's headed have helped me gain not only practical skills but a more robust understanding of the field itself.



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