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Storytelling: The Next Big Step for Data Science

Daphne Stanford · Wednesday, April 20th, 2016

As it turns out, my decision to major in English and creative writing wasn't a mistake after all—speaking from an IT perspective. Storytelling is the way of the future in the data and business intelligence (BI) world, because it translates raw data that is ordinarily inaccessible and abstract into a tangible narrative that people can relate to on a human level. Moreover, the business world needs strong writers and critical thinkers capable of adopting roles as both Program Manager and Data Scientist.

[The data science career track](#) evolved from the software design and statistics fields, requiring extensive knowledge in software architecture and at least one core programming language, as well. In terms of daily job duties, the main role of a data scientist is to discover patterns in data. They're often asked to use their knowledge of programming to find solutions that will produce fast and practical results. A data scientist position alone is quite lucrative on average. Furthermore, an understanding of project management can open up additional leadership opportunities.

The interdisciplinary nature of data science, along with the large amount of unexplored territory involved in organizational implementation of the information gleaned from a data scientist's research and analysis, makes the job a challenging one. Many, however, would likely welcome the challenge as a refreshing change from straightforward nature of traditional coding or analysis of financial statistics. Professionals with data science skills are in high demand and only projected to become more highly valued as BI programs and visual tools continue to proliferate, requiring the expertise of a knowledgeable professional who can parse out and unpack all the numbers and data in order to make sense of it all.

Beyond the mere crunching of numbers, data scientists are charged with analyzing and then predicting market conditions, product placement, and ideal production output, so as not to outpace demand for products or market to the wrong audience. In fact, [54% of business professionals](#) say their company needs to be more analytics-driven to be competitive. The thing is, we have a lot of data to sift through now—more so, in fact, than ever before. In order to help sort and make sense of all this data, there has to be a way to distinguish between internal and externally sourced data, as well as between different types of information. Therefore, “Not just reacting to changing market conditions but predicting them will be a huge competitive advantage.”

However, going beyond business analytics to business intelligence, although data scientists are well and good, the next big thing in data science seems to involve user-friendly intelligence that is already analyzed and explained for us. It's almost as if

we've been given access to interpretation of data that is one step closer to artificial intelligence than we're used to. Nevertheless, as many business intelligence software programs are out there, we still prefer our analysis to be conducted largely by humans who can sit us down by the fire and tell us a story about the fate of our company—hence the ongoing demand for data scientists, as demonstrated by this [recent article on Mashable](#).

To give you a sense of the enormity of the situation, here is a quote from [Rick Tolman, Director of Online Marketing at Domo, who points out](#) “Google CEO Eric Schmidt’s claim that every two days we modern humans create as much information as did all our ancestors combined; or that every day Facebook processes more than 500 terabytes of data; or that Google processes more than 2 million search queries a minute.” In other words, our society as a whole has a ridiculously large amount of data on our hands, so we may as well invent ways to interpret it. Enter the world of “big data-fueled marketing BI.”

Rather than being focused around the building of data reports, an approach more in line with business intelligence would attempt to build a data-reporting app, instead—so as to be more user-friendly and accessible. More advanced forms of business intelligence may even try to replace data scientists; however, it’s doubtful they will have a chance of succeeding until we are much closer to the AI realm.

One approach that tries to come close is called [Artificial Neural Networks \(ANN\)](#), which mimics the processing of biological neurons by processing data via neural networks: “information flows into the mathematical neuron, is processed by it and the results flow out. This single process becomes a mathematical formula that is repeated multiple times.” The result of this procedure is the discovery of associations or regularities within a set of data. There’s also prescriptive analytics, which “examines data or content to determine what decisions should be made and what steps taken to achieve an intended goal” via techniques like simulation, neural networks, and machine learning—all processes that can ultimately save much time and money.

Another big trend in the business intelligence realm, these days, is [data visualization](#), which helps us process information more easily through the use to charts or graphs to illustrate large amounts of data. Visualization is a great way to simplify information that would otherwise remain convoluted and unclear, due to its complex nature and sheer volume. Data visualization can identify areas in need of improvement, clarify which factors influence consumer behavior, assist in product placement, and predict sales volumes.

Furthermore, one step beyond data visualizations is the increase in the number of organizations building their own analytical applications for use by customers and partners. [Yellowfin, a BI consultation firm, predicts](#) that “in the next five years, analytical apps will become a component of every cloud service or embedded into every modern software application.” All these self-contained business intelligence tools might make you start wondering if the need for data scientists will gradually be eliminated. One last related trend worthy of mention is ‘[Intelligence as a Service](#)’—otherwise known as self-service BI. The idea is for business users to be provided with visual-data-discovery tools that help them independently extract and integrate data from various databases, “organizing it into a high-performance data warehouse or data lake, and giving business users access to all this data and the possibility to process data through an easy-to-use interface.”

The short answer to that question is no, in part because of the ongoing need for

storytellers to help us interpret all those data visualizations. In [a recent blog post](#), Amanda Gessert points out a few reasons we continue to tell stories, as well as steps that will help us to effectively build stories from our data. She notes that not only do “stories move people,” they also manage to “elevate key metrics, bar charts, and scatterplots to persuasive and effective messages that are difficult to ignore.” She lists four steps to take in getting started with data-storytelling: 1) figure out your point; 2) support your point; 3) include a plot twist; and 4) end by making a recommendation or suggest the next step.

The next step for the field of data science is to assume a willingness to branch out, to avoid the either/or dichotomy of business intelligence versus business analytics, and instead to encourage businesses to both hire in-house data scientists *and* to encourage those data scientists to educate their colleagues on the ins-and-outs of data analytics. They should be willing to introduce their colleagues to self-service BIs as well as give presentations that tell stories and effectively interpret available data so as to make it more understandable and helpful for the proverbial line. The best scientists, after all, are the ones able to explain their methods to the uninitiated.

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