

WHITE PAPER

# Machine Learning for Business Analysts

## INTRODUCTION

---

Machine learning allows you to gain insights from data and use them to improve every part of business. Its usefulness goes beyond knowledge gathering to informing action that can affect future outcomes.



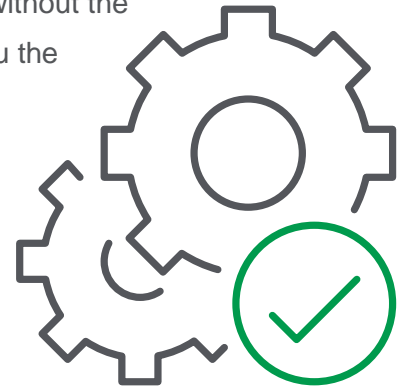
As an analyst, you know better than anyone how volatile and unpredictable the data landscape can be. The last few years have been an interesting roller-coaster ride. A decade ago, business intelligence (BI) systems were the sole domain of large companies with seemingly inexhaustible resources. Analysts like you drove this part of the business and the insights you uncovered gave your organization a major competitive advantage.

Today, BI systems and analytics are an expected contributor to the bottom line, in other words – table stakes. And although your analyst role may have lost some of its original luster and perhaps “your self-confidence has taken a beating,” as Cassie Kozyrkov, Chief Decision Scientist at Google, said to Harvard Business Review, all is not lost.

Change is here, and to remain competitive, companies have begun to pivot and find creative ways to both collect more data from additional sources and mine that data for unique business insights by pairing it with artificial intelligence (AI). Predictive analytics and deep-learning technologies like machine learning (ML) have quickly gone mainstream and are now heralded as the next step in the evolution of business analytics. And with it, the demand for machine learning—and data scientists—has skyrocketed as success stories emerge from early adopters.

## Empowering Decision Makers

The growing demand for capable data scientists gives you a unique opportunity as an analyst to contribute to your organization by taking on some ML initiatives. Even without the formal training of a traditional data scientist, your experience makes you the perfect person to pair BI with ML. You only need software to help you extend the insight and value you extract from the data you already use. With automated machine learning, or AutoML, you can become an invaluable member of your data team and help augment the efforts of your data scientists by becoming a citizen data scientist.



As a citizen data scientist, you help your organization gain competitive edge by creating and deploying your own models based on your understanding of business needs. Since you already own BI, you have a better understanding of business context than a traditional data scientist has. You know the business strategy and what matters to the business, so you are in an ideal position to be a citizen data scientist and help enact rapid change in your organization. You also know the data. How it's used, what's used, by whom, and why. That means you can use ML to ask the right business questions. And you drive the delivery/communication system for insights that the business relies on from BI to act, too. You are literally the trusted source for business decision makers. You are in the perfect position to leverage AutoML to give your company a distinct competitive advantage and make a real difference.

## Why Your Organization Needs Automated Machine Learning

As organizations race toward more and better data, technologies like AI and ML are viewed as magic bullets designed to solve all problems and pave the way to success. Management author Ram Charan illustrated the importance of a data-centric approach, declaring, “Any organization that is not a math house now or is unable to become one soon is already a legacy company.”

But it's a double-edge sword. Those possessing a mastery of AI/ML technologies are seen as invaluable but are in short supply. “By 2020, the number of positions for data and analytics talent in the United States will increase by 364,000 openings, to 2,720,000. In 2020, job openings for data scientists and similar advanced analytical roles will reach 61,799,” according to The Quant Crunch: How the

Demand for Data Science Skills is Disrupting the Job Market. Consultants at McKinsey predict, “The United States alone could face a shortage of 140,000 to 190,000 people with deep analytical skills.”

The growing demand for predictive analytics and corresponding shortage of data scientists will leave businesses scrambling for alternative solutions and technologies. This is where AutoML fits in. An AutoML solution can benefit your company in two very significant ways.

### 1. Scale current/future data scientist resources

In organizations fortunate enough to have in-house data scientists, there is often a “breadline” of demands from various departments – each with its own agenda and initiative as well as an insistence its need takes precedence over all others. As requests build up and backlogs get bigger, it’s impossible for a single data scientist – or even a team of data scientists – to meet all of the demands. By leveraging AutoML, your organization can alleviate burdens on data scientist time by re-assigning specific tasks to your analysts. This frees up your data scientists to scale service across the entire organization and take on higher-priority business challenges. A data scientist is a significant resource and will contribute a higher ROI if that person is free to tackle the more significant, complex ML use cases.

### 2. Up-level existing analyst teams to tackle specific ML tasks

As an analyst, you’re the perfect candidate to take ownership of AutoML. There is a huge benefit to be realized by having someone with actual industry and business experience analyzing the data. Combining your understanding of business needs with existing analytical knowledge can be a significant benefit to your organization as you work alongside your data scientist (or in place of one) and begin to build and deploy ML models that meet your business needs and provide valuable insights. Not only does this reduce the backlog of work waiting for data science, it creates an entire team of citizen data scientists who can work with very little oversight and deliver immense value.



## Becoming a Citizen Data Scientist: How It Benefits You

Now that you understand what a citizen data scientist is and why it helps your organization, how does becoming one benefit your job and career?

## What Is a Citizen Data Scientist?

In *Citizen Data Science Augments Data Discovery and Simplifies Data Science*, Gartner defines a citizen data scientist as “a person who creates or generates models that use advanced diagnostic analytics or predictive and prescriptive capabilities, but whose primary job function is outside the field of statistics and analytics.”

In many cases, analysts don't want to take on the responsibility of a full-blown data scientist, let alone the additional learning required. However, by becoming proficient in BI and ML, analysts can provide many of the same benefits a data scientist does.

“Users throughout the business want a more democratized approach to Big Data and analytics. Not every company can afford a data scientist, which is a big reason why citizen data scientists will become a big part of the data ecosystem as it evolves,” according to Shawn Rogers, Chief Research Officer at Dell Statistica.

## The Value of a Citizen Data Scientist

An organization that says it's data-driven realizes that while historical data has its place – and is undoubtedly vital to the decision-making process – forward-looking and predictive insights are the next step in affecting outcomes. Knowing not only what might happen, but why it might happen and how to affect it is key. And ultimately, the insights gained from analytics matter only if they can be converted into action. That's the metric for success, based on how quickly insights can be surfaced and put into use, driving better business decisions and action. Speeding change for the better also requires communicating these insights – and their potential impact – to the business leaders who need to know about them.

The ability to understand and communicate business needs is where the citizen data scientist provides the most value. As a citizen data scientist, you'll be someone who understands the business needs and can communicate with decision makers, gather insights from your BI and AutoML solutions, and work with data scientists to add value. The insights you uncover, as well as those that come from your data scientist, have the power to alter the course of your organization for the better.

Going forward, citizen data scientists will be in high demand. Gartner predicts there will be five times as many citizen data scientists as expert data scientists going forward since analysts believe,



“one data scientist will not have all the necessary skills – save for a few ‘unicorns’.” Early adopters of AutoML will have a distinct competitive advantage in the job market over less proactive peers.

## The Future is Bright

“Data-driven organizations that do analytics well will unquestionably have an edge –especially if they hire the right people, select the right tools that increase speed to insight, and work toward being able to forecast the future.”

Our world is experiencing something of a modern industrial revolution. Just as robotics and automation revolutionized many industries, rising use of ML will forever change the way people think about and use data. The improvements in technology and access to new ways of storing and analyzing data will give companies of all sizes greater capacity to collect more data from a variety of sources with the confidence that there are insights hidden within that data, undiscoverable by humans.

“Organizations can obtain more insights (and more valuable insights) to improve the customer experience continuously. In addition, they can do so faster – often without human intervention.”

Analysts and data scientists are poised to lead this new industrial revolution, as the gatekeepers to invaluable insights. That’s why competition for talented, skilled people who simultaneously understand the business need and have the analytical skills to ask the right questions will only increase. The future is bright for you analysts and others willing to take the training and gain the knowledge beneficial to data-driven organizations.



### About Qlik

Qlik’s vision is a data-literate world, where everyone can use data and analytics to improve decision-making and solve their most challenging problems. Our cloud-based Qlik Active Intelligence Platform delivers end-to-end, real-time data integration and analytics cloud solutions to close the gaps between data, insights and action. By transforming data into Active Intelligence, businesses can drive better decisions, improve revenue and profitability, and optimize customer relationships. Qlik does business in more than 100 countries and serves over 38,000 active customers around the world.

[qlik.com](https://www.qlik.com)

© 2021 QlikTech International AB. All rights reserved. All company and/or product names may be trade names, trademarks and/or registered trademarks of the respective owners with which they are associated.