Data Analytics in 2021

A Comprehensive Trend Report

INTRODUCTION

Data is the new oil in today's digital economy, and businesses that are able to harness it are the ones staying ahead in the competition. It's evident when you look at some of the biggest and the most innovative brands of the era — such as Google, Facebook, Amazon, and Apple — that treat data as their holy grail. And, they are investing heavily in data analytics to drive the maximum value out of their data.

Data analytics has surfaced as one of the key competitive resources in recent times. And not just for these tech giants, but businesses of all sizes. In fact, 67% of small businesses today spend more than $10K annually on analytics tools and technologies. Also, the number of businesses relying on data analytics has seen a massive jump in the last few years.

Looking back at 2017, which was a banner year for analytics adoption, more than 50% of organizations across industries like healthcare, education, finance, and telecom made data analytics a part of their business expense and operations. By 2020, that figure has inflated massively, with 90% of businesses considering data and analytics to be key to their organization's digital transformation initiatives.

The data explosion of the past decade has made it critical, if not essential, for organizations to become more data-driven and derive value from their data. And now, with the global pandemic forcing millions of companies to re-think their business models almost overnight, the race to achieve digital transformation is more intense than ever. They are under mounting pressure to adapt in order to survive and sustain. And they need people skilled in interpreting and managing their data to unlock the potentials and opportunities that Big Data presents.

With analytics sitting at the top of the current skill gap in tech jobs, there lies an enormous opportunity for aspiring analysts to carve a great career in this field. If you're one of them, updating your knowledge and learning new skills could be your first step towards a fulfilling career that holds limitless potential for decades to come.

This **data analytics trend report** rounds up the top **data analytics trends for 2021** and glances back at the trends that developed over 2020. It further highlights the most popular analytics tools in use and the most sought-after skills that hiring companies are looking for to fill their data analytics positions.

LOOKING BACK: TRENDS THAT DEFINED 2020

With the business landscape doing a topsy-turvy, organizations have been challenged to raise their data and analytics game this year. In their attempt to meet the shifting consumption patterns of consumers and the needs of employees working remotely or from their homes, companies have had to make radical changes in their digital strategies. Data analytics has allowed them to identify these changes and draw insights to make appropriate business decisions with speed and precision. Overall, it's been a year when data analytics captured the attention of top business execs and decision-makers who made real time implementations to reduce cost, innovate, make faster decisions, and adapt to the changing times.

Let's take a look back at some data analytics trends that we're wrapping up 2020 with.
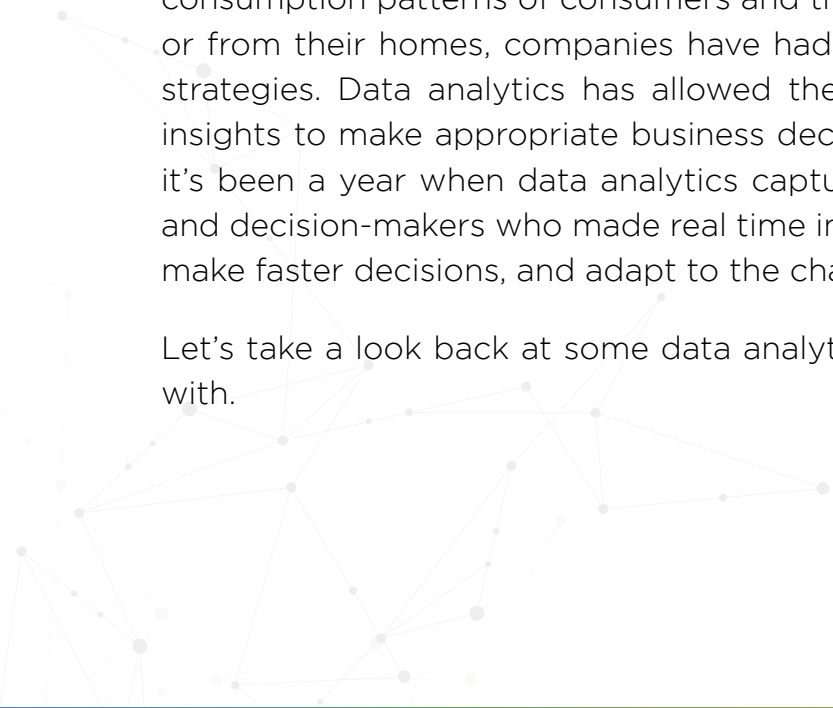
Augmented Analytics

By automatically sifting through huge data repositories of a company, analyzing them, and presenting actionable insights, augmented analytics made it faster and more accurate for businesses to crunch their data.

As a trend that emerged from the world of analytics colliding with that of artificial intelligence and machine learning augmented analytics made developing, sharing, and interpreting analytics much easier. Gartner calls it the "dominant driver of new purchases of analytics and business intelligence as well as data science and machine learning platforms."

Natural Language Processing (NLP)

2020 has been a busy year for Natural Language Processing (NLP) research. One of the biggest news in this field has been the release of the largest natural language processing (NLP) transformer ever — GPAT-3, which is known to be 10X ahead of Microsoft Research's Turing-NLG. On the business front, companies have been using NLP for applications such as chatbot technology, speech recognition, clinical trial matching, spam filters, and so on.
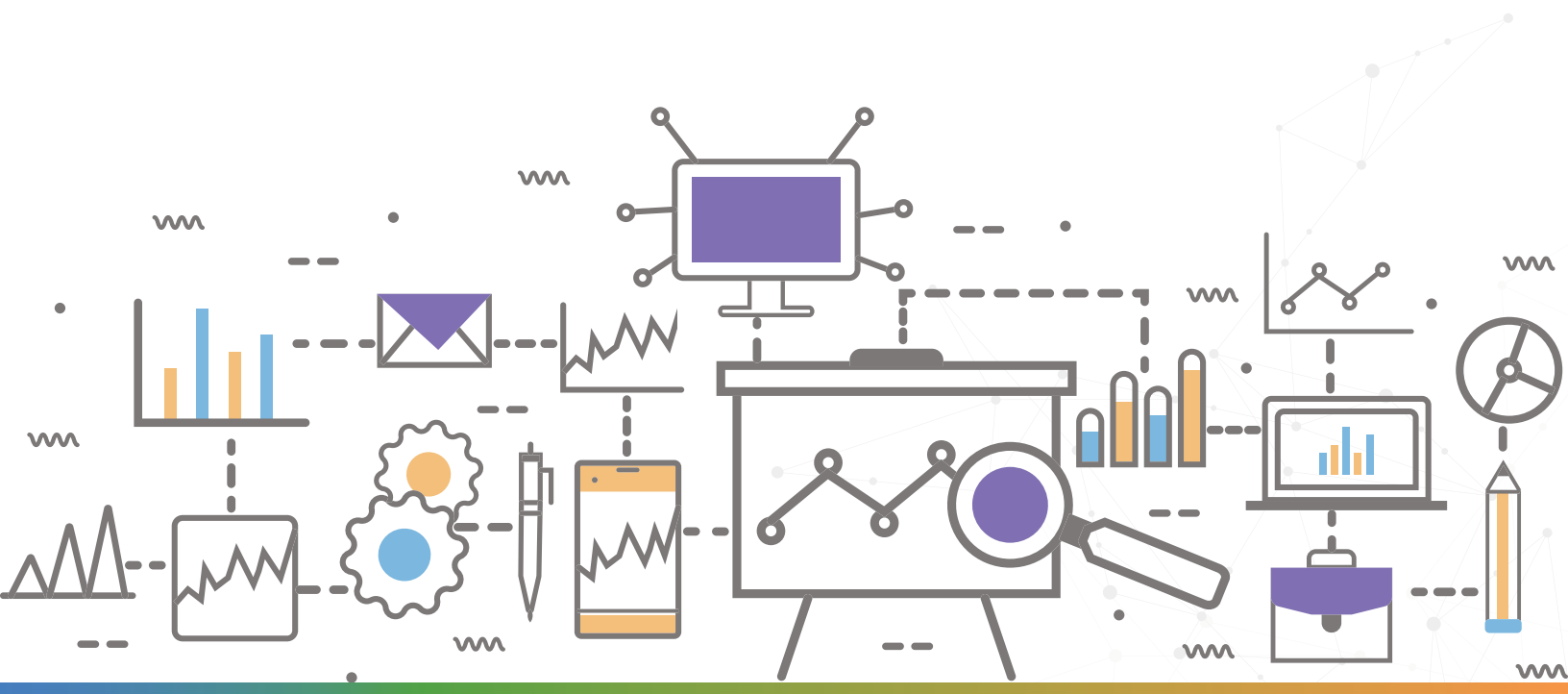
Continuous Intelligence

Continuous intelligence or real-time intelligence became more available and usable by companies thanks to technologies like the cloud, machine learning, the Internet of Things (IoT), and streaming software growing more interconnected.

Data Pipelines

A data pipeline is a series of data processing steps that allow you to merge data from multiple sources and makes it accessible for analysis and visualization purposes. With data booming from all quarters, data pipelines are playing an important role in helping citizen data scientists to work better with machine learning models and formulate strategies for better implementation.

Data analysts are utilizing data pipelines for the management of and crisis response against COVID-19. An excellent example is the US State of Ohio that used smart data pipelines to collate and analyze data from 88 counties without hand-coding and created a COVID-19 dashboard overnight.

ANALYTICS TRENDS TO WATCH OUT FOR 2021

The trends that played out this year will continue to ripple through 2021, while fresh trends might appear on the horizon. With new data practices and challenges coming up, it will be interesting to watch how data analytics evolves to address these changes. But one thing is for certain — businesses will become more analytics-driven, whether they want it or not.

That said, let's take a peek into data analytics trends that are likely to have a big impact in the coming year.

More focus on business value

IDC predicts the global data will boom to 175 zettabytes by 2025. Given the scale and complexity of the data landscape, drawing business value out of data is getting tougher than ever.

According to Roberto Torres of Ciodive.com, *"organizations emerging from the initial reactive phase will look to their data analytics initiatives to enable a smarter company, one that automates insight generation and finds ways to monetize its data inventory."*

Eventually, this could lead to more scalable data analytics solutions that have a higher business impact.

Crisis prevention will become a big area of implementation

During the pandemic, AI and analytics have been critical in helping healthcare organizations comb through tens of thousands of journals, research papers, news sources, social media posts, and clinical trials data to predict disease spread, develop capacity-plan, find new treatments, and identify vulnerable populations.

What Gartner terms as "X analytics" could become a means to find answers to the most hard-hitting challenges facing our society, including disease prevention, climate change, and wildlife protection.

"X analytics" is "an umbrella term, where X is the data variable for a range of different structured and unstructured content such as text analytics, video analytics, audio analytics, etc.," according to Gartner.

Blockchain in data and analytics

Blockchain isn't alien to data analytics; the coming year will see blockchain, within the data analytics realm, being used for vertically specific, business-driven initiatives such as smart contracts.

According to SmartData Collective, "When paired with Blockchain, Data Science is turned into something far more structured and concrete, so it becomes even more useful." Blockchain also enables data analytics applications to mine larger amounts of data, making insights that much more worthwhile.

More emphasis on regulation

While GDPR and CCPA have been huge steps in the direction of streamlining the data regulatory landscape, experts believe it's just the tip of the iceberg. With data volumes multiplying at a break-neck speed, it's fast paving the way for an environment where it will be necessary for businesses to define how they collect, handle, and use consumer data. As such, enterprises have to get used to the tightening of the data-handling and privacy laws.

The maturity of Data-as-a-Service (DaaS)

By enabling companies to access real-time data streams from anywhere in the world, DaaS solutions seek to break down silos and promote better sharing of data between departments within an organization.

Many experts have long been supporting the cause of DaaS becoming a way to internally store, process, and reuse the data businesses collect for capitalizing on them externally. As the trend matures, it will transform into functional services driven by processed data, which businesses will use to set up complex real-time analytical systems to gain a competitive edge.

THE MOST POPULAR DATA ANALYTICS TOOLS FOR BUSINESSES IN 2021

Businesses are increasingly trying to forge new paths within their data analytics strategies. And supporting them in their journey is a huge swath of data analytics tools and platforms.

The entry barriers are falling steadily, making it easier for businesses to adopt data analytics tools into their operations. Plus, the unique business challenges presented this year have further pushed businesses into recognizing the importance of leveraging data-driven efficiency and growth strategies.

Today's analytics tools are empowering organizations to harness and make better use of their data to predict trends and challenges, identify opportunities, improve decision making, and increase the speed, scale, and sustainability of their business.

Here are some top analytics tools that are helping some of the most successful companies of today achieve their data analytics goals.

01 ▸ Apache

• **Hadoop –** Hadoop is an open-source software framework, written in the programming language Java, and is arguably one of the most popular tools employed by the likes of IBM, Facebook, Microsoft, and AWS.

• **Storm –** As a fast, reliable, and scalable framework written in Java and Clojure, Storm is a hit with companies such as Yahoo, Alibaba, and Groupon for its varied use cases, including machine learning, distributed RPC, continuous computation, and real-time analytics, to name a few.

• **Samoa –** Scalable Advanced Massive Online Analysis, condensed as Samoa, is an open-source platform most commonly used to mining big data streams and in ML (Machine Learning) applications.

02 ▸ Cassandra

This free-to-use, open-source database offers an ideal platform for managing massive data loads across cloud infrastructures or legacy hardware and is used by Fortune 100 companies such as Uber, Spotify, Walmart, Netflix, Instagram, among others.

03 ▸ Knime

A provider of end-to-end data science solutions, KNIME offers no-fuss ETL (Extract, Transform, Load) operations, a set of rich algorithms, and highly-organized workflows, making it an effective and powerful tool for data mining and analytics tasks.

04 ▸ Microsoft HDInsight

This open-source, full-spectrum, fully-managed, cloud-based service is one of the top choices for companies that want a fast and cost-effective way to process big data sets.
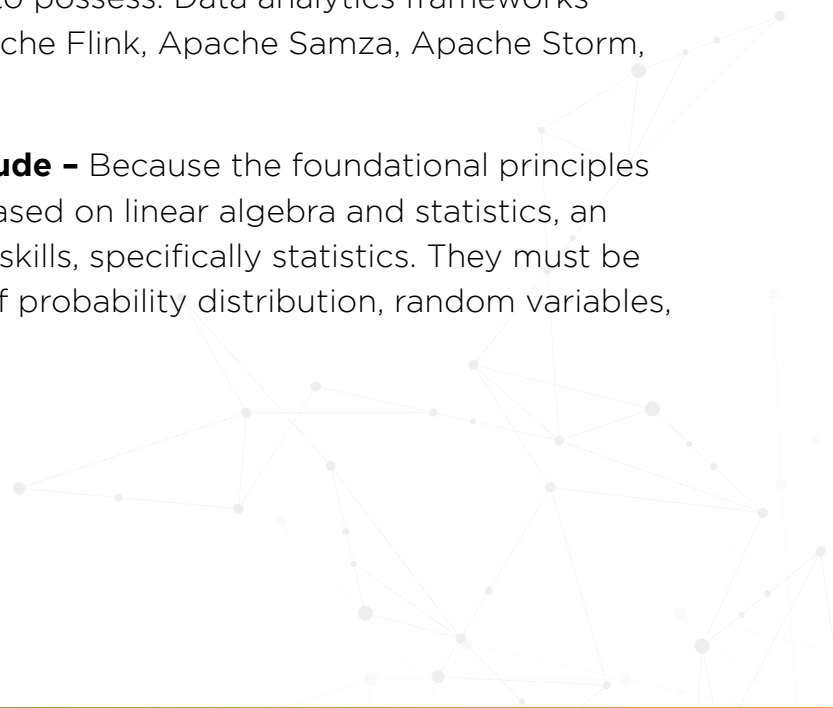
05 ▸ Skytree

This is an enterprise-grade big data analytics platform that enables data analysts and scientists to develop predictive models quickly and accurately.

Other popular tools in this field include XPlenty, Datawrapper, Lumify, Rapidminer, and, SpliceMachine.

DATA ANALYST CAREER: SKILLS REQUIRED TO GET HIRED IN 2021

Today, the role of a data analyst is counted among the most in-demand data jobs of the coming years. If you're planning to get a foot in the door of the data industry, there are some skills to master.

- **Programming –** The knowledge of Python, R, and Java is mandatory for performing the tasks of a data analyst. Other programming languages you must be familiar with include SQL, C ++, Ruby, Scala, Tensorflow, Weka, Julia, MATLAB, SPSS, SAS, and Hive.

- **Data Warehousing –** A data analyst must have an understanding of non-relational and relational databases. Some of the most popular relational databases include IBM DB2, MySQL, Oracle Database, and Microsoft SQL Server, while common non-relational databases include Neo4j, Redis, HBase, Coachbase, Cassandra, DocumentDB, and MongoDB.

- **Computational Frameworks –** The knowledge of frameworks relevant to big data analytics is another key skill to possess. Data analytics frameworks include Hadoop, MapReduce, Apache Flink, Apache Samza, Apache Storm, and Apache Spark.

- **Statistics and Quantitative Aptitude –** Because the foundational principles of big data analytics are largely based on linear algebra and statistics, an analyst needs to have basic math skills, specifically statistics. They must be able to grasp the core concepts of probability distribution, random variables, or summary statistics.

Visualization – A critical aspect of data analysis is visualization. With the business focus getting more intense in the field of data and analytics, it's a necessary skill to have to present the insights in a way that's digestible for business leaders, partners, and stakeholders. As such, aspirants must have a working knowledge of data visualization tools such as Tableau.

Inference skills – As a person tasked with drawing out workable insights from data sets in their day-to-day role, a lot depends on their skills to derive appropriate conclusions from available data plus previous experiences and knowledge.

Besides those, you'll also need Microsoft Excel skills, basic web development skills, basic SQL skills, data mapping skills, and the ability to identify patterns in large data sets.

As for qualifications, a bachelor's degree in computer science, math, statistics, or information management can serve as an ideal foundation to build your career in the field of data analytics.

CARVE YOUR CAREER PATH IN DATA ANALYTICS

The race to deploy data analytics is getting intense, with businesses scooping up data professionals such as Data Analysts, Data Scientists, Database Developers, Big Data Engineers, and Data Modelers faster than skilled talents entering the market.

While a bachelor's degree in the aforementioned subjects can help you set the right basics for this career, it's certainly not enough. Apart from keeping yourself updated with the latest trends and best practices in the industry, it is crucial to upgrade your knowledge base with specialized skills in order to build a thriving career in data analytics.

The good news is, you can learn the skills you need at your own pace, without going back to school. A certification from revered industry-recognized institutes such as Simplilearn can offer you an edge to stand out and become a sought-after candidate for hiring companies.

Arm yourself with our Data Analyst Master's Program and master the skills such as advanced analytics, data visualization, and programming, as well as learn to use the relevant tools that are essential for a data analyst's role.