Where data makes a difference for the future

As you have been learning, the data analytics field is dynamic, spanning a variety of industries. For you and other data professionals searching for new job prospects, there are great opportunities across a spectrum of career fields. As you start to think about your own future role in data analytics, it can help to investigate how data is being used within different industries. In this reading, you'll consider some examples of industries and how data analytics helps guide them. You'll also consider the future of data analytics and how the field is still evolving!

There are so many different industries taking advantage of data analytics in so many different ways. Here is just a sample of some of these industries and how they use data:

Industry	Overview	How data is used
App-driven business (sharing economy service)	Facilitates users acquiring, providing, or sharing access to goods and services, often through online or app-based communities	• Maintaining functioning mobile applications • Delivering customized content based on user history including discounts • Using machine learning models to send notifications at key times or even locations
Automotive	Includes industries associated with the production, wholesaling, retailing, and maintenance of motor vehicles	• Gaining greater control over their supply chains • Improving production line performance, and designing new and more efficient vehicles • Enhancing vehicle safety and new features
Cybersecurity	Protects networks, devices, and data from unauthorized access or criminal use and the practice of maintaining confidentiality, integrity, and availability of information	• Locating weak points within networks and systems using predictive analytics • Defending against security attacks • Detecting data breaches through logic, models, and data tools • Improving the ability to identify attacks and respond to them with Artificial Intelligence (AI)
Digital marketing	Assists in advertising and promotional efforts of companies using the internet and online technologies	• Translating customer interaction into actionable business data • Predicting user behaviors to personalize content and offers • Identifying patterns and trends that guide innovations • Determining the return on investment (ROI) of marketing efforts
Energy	Includes companies that explore, produce, refine, market, store, and transport both renewable and non-renewable energy resources	• Analyzing real-time data from power systems and monitoring devices • Optimizing technologies, monitoring power grids, and predicting failures • Preventing accidents and malfunctions
Gaming	Hosts an estimated 2.7 billion gamers worldwide, facilitating the interaction of players across the globe	• Designing world-building and character creation systems • Monitoring character engagement and how the environment reacts to player input • Optimizing game-play by identifying potential new features or upgrades • Regulating in-game purchases and fraud detection systems • Personalizing marketing campaigns
Streaming media and entertainment	Provides access to live and recorded content on-demand, delivered via the internet to computers, smart devices, and mobile devices	• Analyzing and monitoring user interactions to better understand customer sentiment • Matching users with advertisers with real-time analytics • Guiding future content decisions • Personalizing marketing campaigns
Telecommunications	Primarily involves operating and providing access to facilities for the transmission of voice, data, text, sound, and video	• Assisting the deployment, optimization, and predictive maintenance of telecommunications networks • Optimizing pricing models • Targeting advertisement and incentive campaigns, as well as detecting fraudulent activity • Analyzing customer data to customize subscriber plans
Travel and tourism	Encompasses a variety of services from transportation, accommodations, attractions, booking, and much more	• Marketing to individuals based on their previous travel or searched destinations • Directing machine learning systems that can adjust a traveler's itinerary based on set factors including weather and availability • Generating recommendations based on personal preferences and location-based discounts • Managing reservations and processing transactions

Data trends for the future

As you can already tell, data analytics is an emerging field with a wide range of exciting opportunities. And, even more exciting is the fact that big data is getting bigger. The need for people to understand, prioritize, manage, and analyze that information is not slowing down in any industry. Businesses will continue to rely on data-driven decision-making, fueled by both simple trend analyses and more complex techniques like predictive modeling and forecasting.

Additionally, more companies are storing all of their raw data within large repositories accessible across the organization. As companies become more reliant on insights generated by this data, there will be many opportunities for data analytics professionals to use their skills and knowledge to organize that information and make it useful.

Innovative technologies

Innovations in accessing this data are leading to new approaches in making data interconnected—meaning that there are still new and evolving ways businesses in different industries are going to use data in the future. Technology is also ever-changing and adapting to these new needs. Because of this, there will always be exciting new tools and data solutions to explore.

Artificial intelligence will continue to have a large impact on business, helping to streamline many areas. For example, an increase in sales is understood to be a direct result of forecasting product demand. Artificial intelligence helps companies ensure warehouse supply, keep items in stock, reduce delivery time, and boost operational efficiency through automating processes.

Additionally, artificial intelligence will combine with machine learning, business intelligence, and automation to deliver more personalized services to customers.

Offering additional services will push forward innovation, bringing computer applications and the sources of stored data closer together physically. This concept is referred to as **edge computing**. By closing the gap between data and computation, speed improves. This results in greater support of real-time analytics and the automation necessary to support the increasing number of devices that are becoming linked through the internet of things.

An increasing number of data analytics tasks will be automated by creating, managing, and analyzing data in edge environments. Artificial intelligence and machine learning systems are only as equitable and inclusive as the people who create and train these systems. You will learn more about how you, as a data analytics professional, will need to take steps to ensure equity in the future.

Key takeaways

As you progress through your career as a data analytics professional, you will need to stay up-to-date with the latest trends and technologies used across different industries. The one certainty about the future of data analytics is that an increasing amount of data will continue to be generated and that new systems and innovations will continue to be developed, allowing data professionals an opportunity to learn, grow, and develop new skills.

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