

16 TOP TECH TRENDS

ABOUT BIG DATA, DATA SCIENCE,
ARTIFICIAL INTELLIGENCE
AND MACHINE LEARNING

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With the fourth industrial revolution on the horizon, the global pandemic served as a wake-up call for businesses. [According to a McKinsey study](#), the crisis forced millions of companies to accelerate their plans for digital transformation. The world is constantly adapting to unexpected events like political unrest, global pandemic, and climate change.

With IT at the forefront, any startup or enterprise can create products that keep their brand relevant or even one step ahead of global technology trends.



Driving your business forward is not easy, especially in an ever-changing landscape. But by embracing force-multiplying innovations, you can accelerate your business's growth. Finding ways to adapt the newest technologies with the latest trends can deliver the following benefits:

- ◆ **Innovative capabilities for accelerating business growth**
- ◆ **Solutions ready to scale from anywhere and anytime**
- ◆ **Faster and simplified business processes**

The world is on the edge of the [fourth industrial revolution](#) (or industry 4.0). An incoming combination of cyber-physical systems is where technologies matter. In short, industry 4.0 is about modernized factories that augment the machines with web connectivity. Now manufacturers can visualize an entire production chain and make accurate predictions and corrections without human assistance.

In this fourth revolution, we face a range of new technologies capable of merging the digital, physical, and biological worlds. These new technologies will impact every profession, economy, and business sector. They may even question what it means to be a human. It's safe to bet that IT trends and technologies are the main drivers of the fourth industrial revolution.

To thrive, business leaders need to expand their thinking beyond traditional approaches. Instead, they should include ideas, systems, and technologies they never considered before. This ebook provides an overview of the top tech trends for 2023 that can help you meet all your CEO's priorities to scale, adapt, and grow.

FOUR BIG DATA TRENDS

Everyone and everything is running behind big data these days. [According to Forrester](#), nearly every major brand is in the data business today.

Data has been an ambivalent word for some time in the business world. Big Data is everywhere. And though it has been with us for a while, its full potential is yet to be unlocked.



1 Proliferation of Data

The convergence of social, technological, and economic trends with the rise of internet-connected devices and infrastructures, the appeal of social networking, and the ever-expanding networks that provide wired and wireless broadband access have generated massive data streams.

Thus, there is more opportunity to create, collect, and use data. Worldwide data worth collecting and analyzing will surge to [more than 180 zettabytes by 2025](#). IT enterprises become the business heroes that shape the future of business.

2 Data Analytics

The number of interconnected devices is growing at a blistering pace and will [hit 27 billion by 2025](#) as supply constraints ease and growth continues to accelerate. More and more businesses will start exploring and capitalizing on IoT benefits to fulfill various business objectives.

More data enables marketing strategies to be more precise and effective. In turn, businesses can create more functional products and services for their customers. In comparison, traditional data analytics approaches will face new challenges since they are not as automatized as large-scale data analysis.



3 IoT and Streaming Analytics

As more and more devices connect to the internet, the volume of generated data will continue to grow at a blistering pace. Streaming analytics will come in handy to analyze and decipher IoT data in real time. It will allow businesses to take the appropriate actions before a problem gets out of hand.



4 Cloud-Based Tools and Platforms

Business Intelligence (BI) software is evolving and migrating to the cloud to meet modern enterprise needs. In 2023, BI will become an essential requirement for many businesses. Several factors push this shift, including the need for greater flexibility, the growing popularity of analytics and big data, and the growing need to analyze various volumes of data.

Cloud-based BI tools come loaded with many more benefits than traditional on-premises solutions. They are faster and easier to deploy and configure, saving precious time and resources. Typically, these solutions can be scaled up or down upon request. Another significant benefit of cloud-based BI solutions is their unmatched accessibility. They allow employees to access data and analytics from any device and any part of the world.

FIVE KEY DATA SCIENCE TRENDS

As more businesses and companies adopt data-driven models, the data science industry is experiencing historic growth. The latest trends in data science suggest that a new perspective is taking shape. Data science is no longer a tool for a selected group of specialists. It is becoming an invaluable asset for every business professional.



1 Data Fabric

Data fabric lays the foundation for building and storing composable data and analytics of each business. Data fabrics as the central architectures facilitate the effective coupling of software and hardware, allowing complete access across internal and external locations without breaking data privacy laws. Pre-built data lakes, hubs, and warehouses can link with new software tools and approaches. Hence, less integration and maintenance are required.

2 Real-time Data

Data analysis is moving away from the historical to the real-time. Companies can now interact with customers more effectively by reacting to customer actions right when they happen rather than reviewing post-mortem. [Seagate points](#) out that 75% of the world's population will interact with data every 18 seconds by 2025. Thus, there is a need to increase the speed of data analysis and reactions to the changing users' patterns.





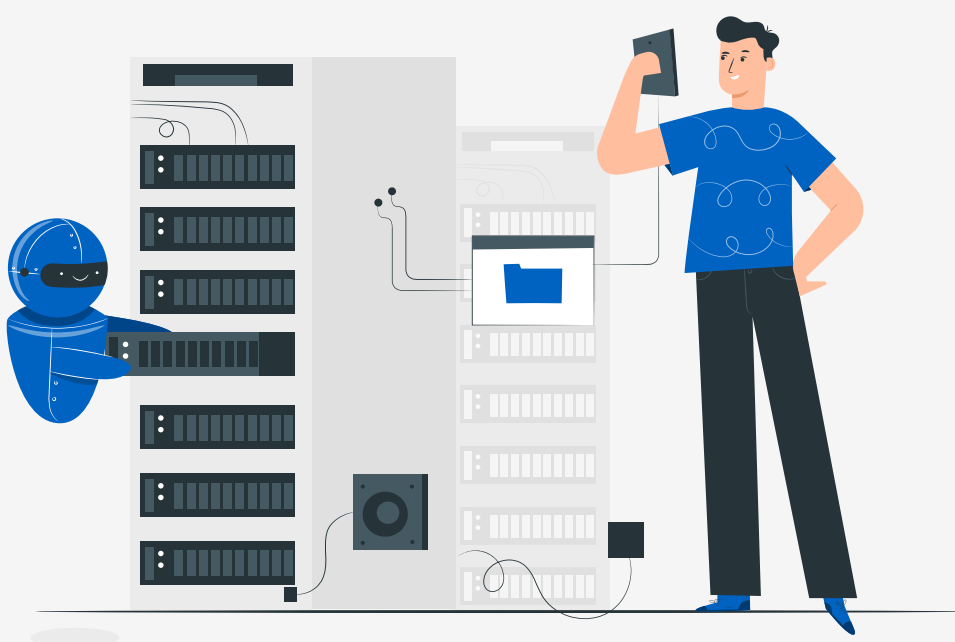
3 Augmented Analytics

Augmented and user-friendly analytics go hand in hand with cloud-based data. Interpretation and evaluation of data required trained specialists before augmented analytics came along. Now employees at any level can analyze data thanks to integrated data technology. Employees have personalized dashboards with insights tailored to their roles. Instead of relying on the opinion of a few specialists, businesses can benefit from multiple viewpoints of all their employees.

4 Python Sidelines R

Historically, data and analytics used R as their coding language, but the shift towards a more user-friendly focus has made Python the number-one language for data science tools. It requires less coding and is a lot simpler to pick up.

Thanks to the diversity of Python, all data analyses can be written in the same language, from machine learning models to blockchain applications. Python allows easy integration with existing software, while R is more closed.

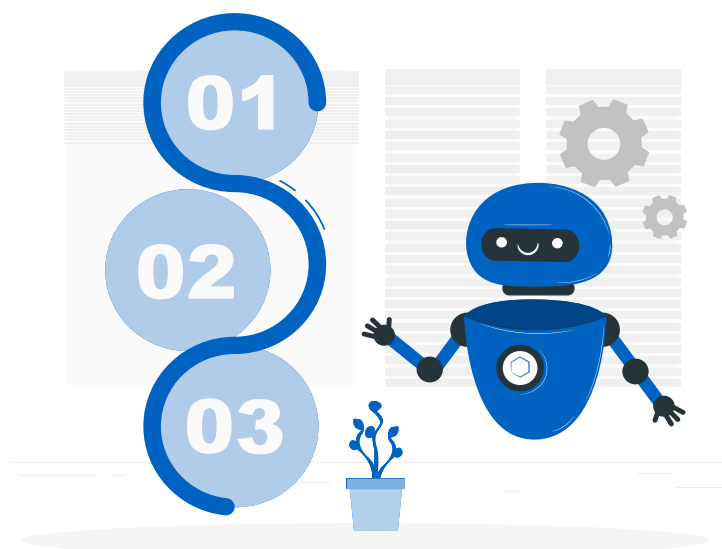


5 Increased AI Automation

Machines understand natural speech patterns, human queries, and the relationships between words and meanings better with each day. Many data analytics processes are now automated and occur before any data reaches an analyst.

THREE AI TRENDS

In 2023, AI will continue its journey toward becoming the most transformative technology that humanity has ever created. With the ever-growing development of science and technology, AI applications will continue to grow in value concerning their daily use.

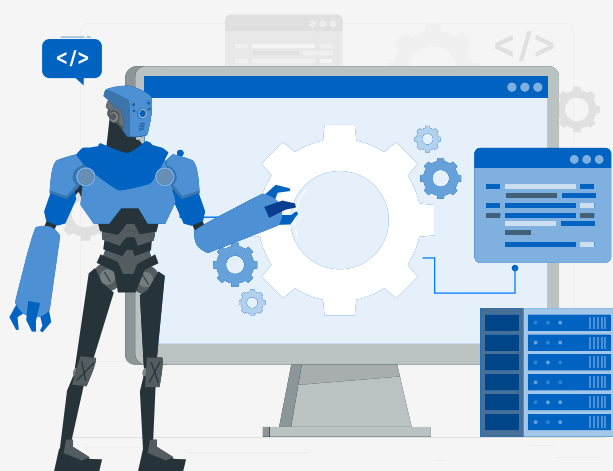


1 Natural Language Processing (NLP)

NLP refers to the ability of machines to understand the meaning of human speech or text. NLP has already revolutionized how we and robots interact. Let's take Siri, Alexa, and Cortana – these voice assistants can understand what people say, analyze the speech, and act accordingly. However, NLP has much more to offer than allowing users to navigate their smart devices hand-free.

2 Generative AI

Generative AI refers to the ability of AI to generate content such as written texts, images, and music. [According to Gartner](#), Generative AI is one of the most anticipated strategic technologies for 2023. It is fit for multiple purposes, including generating content for media and search engines and even artistic creations.



3 Reinforcement Learning

It's a branch of machine learning where scientists deal with decision-making and reward-based training. Reinforcement learning mimics how we learn and goes through the trial-and-error processes to achieve desired outcomes. It's widespread in data science, robotics, and financial trading.

FOUR ML TRENDS

Machine learning powered by data science makes our lives easier. Properly trained ML algorithms can complete tasks more efficiently than humans.

1 No-Code Machine Learning

Setting up machine learning doesn't require coding. No-code ML is a way of programming ML apps without going through all the processes of pre-processing, modeling, designing algorithms, collecting new data, retraining, deploying, and others. You can easily create your ML model with simple drag-and-drop editors. However, assembling and setting up complex ML models still requires the expertise of skilled professionals.

2 Tiny ML

With the rising popularity of IoT devices, TinyML is paving its way into the mix. While the usability of large-scale ML applications is quite limited, there is a growing need for smaller-scale applications. By running tiny ML applications on IoT devices, we can lower power consumption and ensure user privacy since it eliminates the need to transfer data to data processing centers.

IoT with TinyML algorithms can track and make instant predictions in various sectors like predictive maintenance for industrial centers, healthcare institutions, agriculture, etc.

3 Quantum ML

Many believe that quantum computing will boost the performance of machine learning systems. Since quantum computers are the most powerful machines in the world and are designed specifically for solving the most complex problems, they can process large datasets and provide in-depth analysis. Quantum ML algorithms run these giant computers and process large volumes of data that would take teams of specialists years to sift through.

4 Unsupervised ML

Machines cannot learn in a vacuum. They need to take in new information and analyze the data for the solution they intend to deliver. Typically, machine learning requires the intervention of data scientists who feed the information into the system. Unsupervised ML can draw their conclusions without guidance from specialists. It can quickly study data structures and identify beneficial patterns.

LEVERAGE THE RIGHT IT TRENDS FOR YOUR BUSINESS GROWTH WITH GLORIUM

The future is happening around us. Moving further, we should always be ready to innovate. You see how experiences that seemed science fiction ten years ago become commonplace in daily life. Keeping a constant look at what's coming allows companies to develop a plan for success as the next industrial revolution arrives.

Achieving business objectives in a new world requires innovative methods. Sit down with some of Glorium's experts to understand how technologies like ML, AI, or Big Data can improve the efficiency of your business.





Thanks for reading!

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Glorium Technologies professionals deliver projects in the shortest timelines without losing quality in the process as they utilize some of the techniques and strategies for effective team collaboration described in this book.