Technologies like Internet of Things (IoT) and Artificial Intelligence (AI) tell us that the future is now. Remarkably, these technology concepts perfectly complement each other. The number of connected devices will only expand, and the mass of data produced by them will grow to head-spinning volumes. AI can help organizations gain meaningful insights from big data that IoT provides. But how do you get the insights? Has anyone already made use of AI in IoT? Let's look.

AS THE INTERNET of Things (IoT) continues its run as one of the most popular technology buzzwords of the year, the discussion has turned from what it is, to how to drive value from it, to the tactical: how to make it work.

IoT will produce a treasure trove of big data – data that can help cities predict accidents and crimes, give doctors real-time insight into information from pacemakers or biochips, enable optimized productivity across industries through predictive maintenance on equipment and machinery, create truly smart homes with connected appliances and provide critical communication between self-driving cars. The possibilities that IoT brings to the table are endless.

AI and IoT: Why Do We Need It?

The potential of Big Data is incredible. AI in IoT is how we unlock it. According to Deloitte, the acquisition of AI and IoT startups was growing fast in 2017 and is expected to hit record numbers in the future. AI-focused IoT startups deal with intelligent reasoning and speedy data analysis showcasing it across industries.

Artificial intelligence is a functional solution to managing multiple connected IoT elements. On top of that, its unlimited processing and learning abilities are critical for making sense of piles of data transmitted by IoT devices. Companies can achieve this in practice by using a powerful subset of AI which is called machine learning.

Examples of AI in IoT

Let's take a closer look at industries and businesses that have already managed to cut costs, create a better user experience and open up new business models with AI in IoT. Perhaps, these examples will make you consider implementing AI and IoT in your business.

Industrial Internet of Things (IIoT)

The widespread use of IoT devices with industrial equipment provides a plethora of data. With AI algorithms applied to the gathered data, business owners can detect potential issues, fix them in advance and apply these insights to other cases. The system is gradually taught to recognize external and internal factors that have an impact on the operation of the machines. By optimizing resources and increasing industrial safety, the entire production process is streamlined.

Predictive maintenance is the brightest showcase of AI used in IIoT. Predictive or perspective maintenance means that a system powered by the machine learning algorithms can predict a need for maintenance on a plant floor. On top of that, artificial intelligence can help in creating self-healing and self-calibrating IoT devices like sensors, inductors or transmitters. The biggest benefits that AI adds to the IIoT due to the described capacities are the reduction of maintenance costs and downtime.

Healthcare

The healthcare industry generates showers of data. Sensors from medical devices, healthcare mobile apps, fitness trackers and digital medical records have been producing and collecting patients data for years. The AI and IoT approach can help predict diseases, suggest preventive maintenance and provide drug administration. When it comes to health protection or disease control, patients and hospitals would welcome the benefits that come with the AI and IoT approach.

Smart Home

The idea of a fridge "communicating" with a smartwatch is still just a concept. Even so, "intelligent" vacuum cleaners, doorbells and lightning systems are found on the market in good supply. According to IDC, consumers will make more investments in smart home ecosystems to the tune of $63 billion by 2020. Will there be a place for artificial intelligence at home which is "smart" enough already? We bet it will.

Artificial intelligence means even bigger automation in a smart home. Since the entire idea of connected objects is to make a life easier, more automation sounds great. On top of that, AI can make life in smart homes even more pleasant. AI systems can "learn" your mood and preferences, as well as analyze your interaction with home objects. With such knowledge, it can adjust temperature for both heating and cooling, adjust lighting, put on the music you like and close or open windows depending on the weather. IoT and machine learning can also water plants when sensors state the dry soil and start a vacuum cleaner every Saturday at 1 PM.

The Bottom Line

AI and Machine Learning as its subfield are a huge leap for businesses that make active use of IoT. Despite certain concerns largely connected with safety and security of AI in IoT, a combination of these disruptive technologies has already been successfully tried out. Business goals become more attainable with actions taken in advance. The ability to analyze, predict and automatically adjust to a need is highly prized. When it comes to AI and IoT, global tech leaders have already learned some ropes. Like Google, Amazon, Tesla, Uber and other tech giants go on exploring intelligent tech, one thing is certain — the impact of AI and IoT is going to be tremendous.

Resource:

1. https://dzone.com/articles/artificial-intelligence
2. www.wired.com/insights/2014/
3. https://sg.news.yahoo.com/ai-iot-playing-growing