2017 Machine Learning Trends

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Machine Learning (ML) has revolutionized the world of computers by allowing them to learn as they progress forward with large datasets, thus mitigating many previous programming pitfalls and impasses. Machine Learning builds algorithms, which when exposed to high volumes of data, can self-teach and evolve. When this unique technology powers Artificial Intelligence (AI) applications, the combination can be powerful. We can soon expect to see smart robots around us doing all our jobs – much quicker, much more accurately, and even improving themselves at every step. Will this world need intelligent humans anymore or shall we soon be outclassed by self-thinking robots? What are the most visible 2017 Machine Learning trends?

2017 Machine Learning Trends in Research

In the research areas, Machine Learning is steadily moving away from abstractions and engaging more in business problem solving with support from AI and Deep Learning. In *What Is the Future of Machine Learning*, Forbes predicts the theoretical research in ML will gradually pave the way for business problem solving. With Big Data making its way back to mainstream business activities, now smart (ML) algorithms can simply use massive loads of both static and dynamic data to continuously learn and improve for enhanced performance.

2017 ML Application Development Trends

Gartner's Top 10 Technology Trends for 2017 predicts that the combined AI and advanced ML practice that ignited about four years ago and since continued unscathed, will dominate Artificial Intelligence application development in 2017. This lethal combination will deliver more systems that "understand, learn, predict, adapt and potentially operate autonomously. " Cheap hardware, cheap memory, cheap storage technologies, more processing power, superior algorithms, and massive data streams will all contribute to the success of ML-powered AI applications. There will be steady rise in Ml-powered AI application in industry sectors like preventive healthcare, banking, finance, and media. For businesses that means more automated functions and fewer human checkpoints. 2017 Predictions from Forrester suggests that the Artificial Intelligence and Machine Learning Cloud will increasingly feed on IoT data as sensors and smart apps take over every facet of our daily lives.

Democratization of Machine Learning in the Cloud

Democratization of AI and ML through Cloud technologies, open standards, and algorithm economy will continue. The growing trend of deploying prebuilt ML algorithms to enable Self-Service Business Intelligence and Analytics is a positive step towards democratization of ML. In *Google Says Machine Learning is the Future*, the author champions the democratization of ML through idea sharing. A case in point is Google's Tensor Flow, which has championed the need for open standards in Machine Learning. This article claims that almost anyone with a laptop and an Internet connection can dare to be a Machine Learning expert today provided they have the right mind set.

The provisioning of Cloud-based IT services was already a good step to make advanced Data Science a mainstream activity, and now with Cloud and packaged algorithms, mid-sized ad smaller businesses will have access to Self-Service BI and Analytics, which was till now only a dream. Also, the mainstream business users will gradually take an active role in data-centric business systems. *Machine Learning Trends – Future AI* claims that more

enterprises in 2017 will capitalize on the Machine Learning Cloud and do their part to lobby for democratized data technologies.

Platform Wars will Peak in 2017

The platform war between IBM, Microsoft, Google, and Facebook to be the leader in ML developments will peak in 2017. *Where Machine Learning Is Headed*, predicts that 2017 will experience a tremendous growth of smart apps, digital assistants, and main-stream use of Artificial Intelligence. Although many ML-enabled AI systems have turned into success stories, the self driving cars may die a premature death.

Humans will Make Peace with Machines

Since 2012 the global business community has witnessed a meteoric rise and widespread proliferation of data technologies. Finally, humans will realize that it is time to stop fearing the machines and begin working with them. The InfoWorld article titled *Application Development, Docker, Machine Learning Are Top Tech Trends for 2017* asserts humans and machines will work with each other, not against each other. In this context, readers should review the DATAVERSITY® article *The Future of Machine Learning: Trends, Observations, and Forecasts*, where the readers are reminded that as businesses develop a strong dependence on pre-built ML algorithms for Advanced Analytics, the need for Data Scientists or large IT departments may diminish.

Demand-Supply Gaps in Data Science and Machine Learning will Rise

The business world is steadily heading toward the prophetic 2018, when according to McKinsey the first void in data technology expertise will be felt in US and then gradually in the rest of the world. The demand-supply gap in Data Science and Machine Learning skills will continue to rise till academic programs and industry workshops begin to produce a ready workforce. In response to this sharp rise in demand-supply gap, more enterprises and academic institutions will collaborate to train future Data

Scientists and ML experts. This kind of training will compete with the traditional Data Science classroom, and will focus more on practical skills rather than on theoretical knowledge. KDNuggets will continue to challenge the curious mind by publishing articles like 10 Algorithms that Machine Learning Engineers Should Know . 2017 will witness a steady rise in contributions from KDNugget and Kaggle in providing alternative training to future Data Scientists and Machine Learning experts through practical skill development.

The Algorithm Economy will take Center Stage

Over the next year or two, businesses will be using canned algorithms for all data-centric activities like BI, Predictive Analytics, and CRM. The algorithm economy, which Forbes mentions, will usher in a marketplace where all data companies will compete for a space. In 2017, global businesses will engage in Self-Service BI, and experience the growth of algorithmic business solutions, and ML in the Cloud. So far as algorithm-driven business decision making is concerned, 2017 may actually see two distinct types of algorithm economies. On one hand, average businesses will utilize canned algorithmic models for their operational and customer-facing functions. On the other hand, proprietary ML algorithms will become a market differentiator among large, competing enterprises.

Some Thoughts to Ponder

If the threat of intelligent machines taking over Data Scientists is really as real as it is made out to be, then 2017 is probably the year when the global Data Science community should take a new look at the capabilities of so-called "smart machines." The repeated failure of autonomous cars has made one point clear – that even learning machines cannot surpass the natural thinking faculties bestowed by nature on human beings. If autonomous or self-guided machines have to be *useful* to human society, then the current Artificial Intelligence and Machine Learning research should focus on acknowledging the limits of machine power and assign tasks that are suitable for the machines and include more human interventions at necessary checkpoints to avert disasters. Repetitive,

routine tasks can be well handled by machines, but any out-of-the-ordinary situations will still require human intervention.