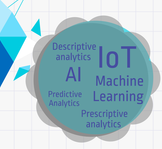

Mythbuster:
Advanced Analytics in Pharma

Pharma IQ takes a look at key tech buzzwords that have emerged in pharma on the back of drug discovery's digital transformation.

Digital Takeover?

The rise of computer science has produced concerns, especially in the media, about technology eventually eliminating certain jobs.

Consensus is emerging to assure that in reality:

✗ Human Vs Machine

But

✓ Human + Machine Vs Problem

Descriptive analytics

IoT

AI

Machine Learning

Predictive Analytics

Prescriptive analytics

Buzzword Fog

The lack of understanding and awareness about sophisticated analytics technologies remain a hindrance to their implementation.

More clarity is needed to stamp out some of the sensationalized assumptions attached to these buzzwords

94%

of pharma professionals in a recent study expect the above technologies will have a noticeable impact on medicines by 2020.

81%

of the same base were excited by the impact these technologies will bring.

75%

of time is saved by Exscientia's AI system in comparison to traditional drug candidate discovery approaches

Definition breakdown

Descriptive Analytics

The analysis of existing data to gain insight on the current state of events.

One pharma firm saw a 10 – 20% reduction in labor costs from using a data-led decision making technology to solve packaging line scheduling issues and shrink unnecessary overtime.

Predictive Analytics

Extrapolating future events from descriptive data. This requires large real time data capabilities to generate.

This will utilize a range of statistical methods including the likes of machine learning - software that improves its strategies based on its past successes and failures in predicting outcomes from certain data patterns

> “I have been really impressed by the success stories where companies used predictive analytics tools on very small data sets to produce a good view into the future and optimize planning, manufacturing and production.” -Dr Andrea Zobel of Paraxel

Prescriptive Analytics

Takes a predicted event and then forecasts what action is likely to be the most beneficial solution.

Example:
1 - You predict mass infection in a community
2 - You examine what needs to be done by the population to counter and suppress that infection.

Case Studies

Predictive analytics and deep learning strategies have been used to verify clinician decisions with breast cancer biomarker identification

Supercomputer IBM Watson deploys sophisticated analytics to generate answers from healthcare data and even suggests tailored treatment programs

GSK signed a £43m AI deal to fast track candidate discovery and save money on failed tests.

Merck KGaA is tracking its distribution practices through sensors in its supply chains. To accelerate time to market, machine learning technologies assist with planning for certain products

Patient enrollment for trials can be sped up by using predictive analytics on external and historical trial data to forecast adverse events or medical conditions.

Tips

TIP

Data strategies should focus on priority cases with the most potential to generate value.

This targeted strategy greatly reduces required data lake cleaning to start new projects.

TIP

End quickly the experiments that aren't working

SOURCE BLOCK

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