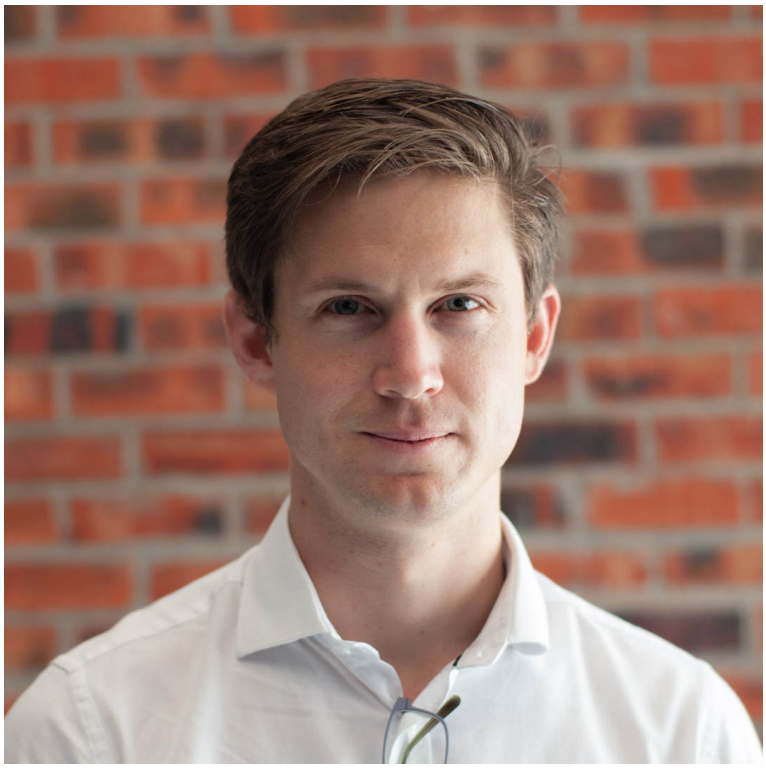
Speaker Spotlight

Frans Cronje

Managing Director & Co-founder

DataProphet



Frans is the Managing Director and Co-founder of DataProphet, a global AI company specializing in the development of powerful machine learning solutions for Industry 4.0. Since founding DataProphet in 2014, Frans has continually worked to highlight the real value machine learning technology can, and should, offer manufacturers, and regularly speaks at AI industry workshops and events. He currently leads a thirty-strong team of mathematicians, statisticians, and data scientists who have made it their mission to help manufacturers reach their Smart Factory ambitions.

In November, Frans will speak at the American Automotive Summit on "Active AI for Optimizing Control Parameters: Results from Welding and Casting Environments."

We spoke with Frans in advance of the summit to learn about the benefits, challenges and misconceptions surrounding implementing and leveraging AI in the automotive manufacturing industry.

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How does AI work with an existing production team to eliminate defects, scrap and minimize downtime?

Our flagship product, OMNI, is a powerful process parameter optimization solution that significantly reduces waste in manufacturing processes. OMNI recommends optimal parameter values to the production team, enabling them to continuously improve the individual processes for which they are responsible.

OMNI does this by plugging into the data that is recorded in the manufacturing process as well as quality data that is recorded upon the manufactured product. OMNI then learns from it - determining the complex effects that different input parameters have on the quality of the final product.

Once OMNI has learned from the data, it goes on to provide the production team with recommended changes to the process variables that take into account the current state of raw materials, temperature, and other parameters relevant to production.

In the foundry industry, we helped a major engine block manufacturer reduce their external scrap rate to 0% using OMNI's predictive capabilities.

What is the process that automotive manufacturers will have to undertake to leverage AI?

A key part of OMNI's value proposition is its modularity. We built OMNI to easily integrate with your existing data infrastructure without negatively affecting your production processes.

The first step in integrating OMNI is a comprehensive ETL and unification of your historical production data. All manufacturing facilities are unique, and we take this into account when implementing OMNI.

It takes 4 to 8 weeks to deploy OMNI in your facility since our data science team needs to configure OMNI to integrate with your unique manufacturing process and infrastructure. At DataProphet, we know that every factory is different and the importance of process parameters may differ significantly from one facility to another. The integration process primarily involves building the machine learning models that process your data and extract the most value from it.

What are some of the biggest hurdles manufacturers must overcome in order to implement machine learning?

The most significant hurdle is a lack of trust in AI technology.

Manufacturers tend to make decisions of least regret, implementing tried and trusted technologies instead of new, unproven solutions. At DataProphet, we understand this reservation and actively work at helping manufacturers embrace AI as a tool that can deliver real value and ROI. This is the reason why we don't over-promise on the capabilities of our AI solutions.

Another, equally relevant, challenge is the availability of process data. Some facilities do not produce sufficient data to benefit from AI-enabled solutions. We pride ourselves on being completely honest with prospective clients on the state of their process data before moving ahead with OMNI implementation.

What are some machine learning misconceptions that you have encountered?

AI has been put forward as a magic solution to any and all manufacturing challenges. The fact is, some manufacturing facilities do not produce sufficient data to truly benefit from AI. An AI solution is only as good as the data on which it has been trained. This lack of quality data is a common issue in low-capacity production lines with low levels of automation.

At DataProphet, we train our machine learning solutions on process and quality data relevant to the specific applications that our solutions are used in. This approach ensures that our products provide real value to manufacturers as soon as they go online.

What is the difference in operations and outcomes when comparing the use of statistical process control to AI-enabled process control?

Statistical process control (SPC) is a trusted and proven tool for identifying root causes of manufacturing defects; however, SPC was not developed in today's manufacturing environment, where vast amounts of data are processed and large numbers of process parameters need to be tracked simultaneously. On the other hand, AI-enabled process optimization systems can track hundreds of process parameters and their complex interactions simultaneously.

AI-enabled process optimization can be used to significantly enhance the effectiveness of existing data infrastructure - including SPC systems. The main advantage of AI-enabled solutions lies in their ability to provide a holistic overview of the entire production process. This enables manufacturers to have more control over the entire production process. It's critical to understand that this is not a replacement of existing processes but an augmentation.

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What makes OMNI an effective system for the automotive industry?

OMNI has a proven track record in the automotive assembly sector, where it has helped a major international auto brand extract real value from their process data. The manufacturer's body shop is a particularly complex environment where over 800 types of studs are routinely used in welding processes. We helped the manufacturer reduce stud welding defects in their production line by 75%, which significantly reduced defect-related downtime.

To learn more, join us at the American Automotive Summit.

View the program