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Strange relationship between AI and FA

AI is just around the corner.

Haven't you often heard of "AI=Artificial Intelligence" lately?

AI is no longer a term in SF movies only and is coming closer to our real world. AI played chess or go with a human and beat him. AI is applied in self-driving technology of automobiles. Probably, you have already heard such news.

Why did Pro-face that is an HMI manufacturer pick up this term as a keyword for 2017? It's because we think this AI technology will become important even in a FA industry we engage in.

Common misunderstanding related with AI

An American research firm called Gartner, Inc announced a research report of common misunderstanding related with AI. According to that, it is true that the current AI is still developing.

1. Exist very smart AI
2. Everyone archive great things with installing a machine learning
3. We can get perfect results soon with AI
4. Exist AI everyone can handle easily.
5. AI is software technology.

As many people misunderstand, perfect AI cannot be introduced as of this moment. In order to achieve amazing things, actually amazing engineers as well as amazing technology are required. Amazing skills are necessary for those who develop AI.

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Things to be prepared for introducing AI

In the real world, spread of full-fledged AI may be still far ahead, but there are lots of things to be prepared before that.

This time, we will introduce an actual case example of a company that has worked on preparation looking at introduction of AI in the future.

Why do they promote AI or IoT? One of the purposes is “predictive maintenance” or “pre-simulation”. But it’s necessary to collect and analyze huge amounts of data for that.

For example, when you predict a lifetime of a cylinder, you count operating times of a cylinder alone with PLC as many users do.
But, everybody knows that accuracy of prediction never improves by this method only.
How can you improve accuracy of prediction?
You need not only operating information of a device unit alone but also other surrounding information. But how can you collect that surrounding information?

Unexpected problem : Data size

The more information you collect, the higher accuracy becomes. But a new concern emerges here.

First, it’s a data size.

As information quantity increases, more storage capacity to save the data is required.

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Although an individual data size is small, it's easy to imagine that it becomes an enormous size as time goes by.

Especially, data for predictive maintenance becomes of great value as it is collected for a long time. In this case, a storage that has a capacity to save huge amounts of data for a long time is required.
Moreover, maintenance of a storage itself is important. And predictive maintenance of a storage is required for predictive maintenance for equipment and you may fall into a negative loop like that.

As a solution, you just delete data that is old and unnecessary. But it's unexpectedly quite difficult to determine if data is necessary or not.

So, what should you do?
There was a keyword as a clue in conversation with a customer.

The keyword is "analog".

It's an analog system of digital data.

Many people may wonder why.

No wonder. Because predictive maintenance, for example, is not determined with analog data, digital data is collected and then analyzed. But we turn back here.

Thinking of the above carefully, we understand that a proper way of analysis tools is visualization when something like predictive maintenance mentioned this time is analyzed.

If you show in charts something hard to determine with only the row of numerical values, which is visualization, trend analysis gets easier. Actually digital signals are very useful for giving some kind of alert. Making charts is also very useful for long-term analysis.

Putting huge amounts of data in a visual mode – display in charts – for easy judgement can make analysis easier. Instead of saving digital data as it is, saving what is visualized can generate valuable data.

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As a concrete example, saving graph display as a picture and comparing this picture as an image can make trend analysis possible.

Trend analysis and error detection by an image-processing sensor are the same in concept. AI technology in this field is much advanced. It costs a lot to analyze big data on a broad scale. Analyzing data after making images of it may be a shortcut to introduction of AI.

Finally

It seems that every company has been preparing various things for IoT or introduction of AI.

But the most important thing to know is that nothing will start unless information is collected from a range of devices.

Some old equipment may still remain or some devices may be adjusted by long years of experience only. It's important to connect to a range of devices and create a digital mesh. If your company has not reached here yet, focus on making a state that allows you to collect data from all devices. If so, application to a system that will develop in the future, for example, showing collected data in charts, picturing of data, or working together with an upper PC, can be realized easily at low cost.

Pro-face is trying to help customers resolve problems with confidence using a teamwork in its own office and also with others. If you have any questions, contact your local Pro-face distributor.

Pro-face products

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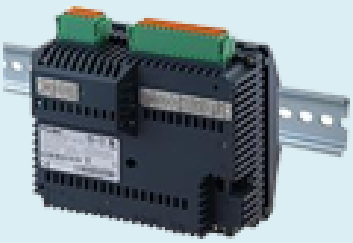

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