Machine failure prediction model for industry

Abstract

As energy cost increases, and French regulation is more and more restrictive for industrial companies, Energy management is a main concern for industrial. In this context Energiency wants to help them by providing a software which provides monitoring tools, analysis of data and task planification to improve energy management. During the two last years Energiency gathered large amounts of data from different factories. Based on these, Energiency is working on advandced algorithms and is currently focus on the design of a machine failure model in order to predict machine failures. These models will assist the workshop manager in order to decrease undesirable stop during their production. By reducing undesirable stop, Energy manager will be able to provide more accurate energy consumption forecast.

Key-words

Failure model - Prediction - Energy consumption

Context :

Energiency is a French Tech start-up founded in April 2013, with headquarters in Rennes (France) and a team of 10 engineers. Energiency creates and deploys innovative digital solutions for energy performance analytics to medium and big manufacturing Groups in Europe.
Energiency provides a big data analytics software for energy management. This innovation, developed for industry, focuses on machine learning technology, including predictive analytics of energy consumption according to industrial activity. The 100% cloud solution provides new analytics algorithms for data from any Internet of Things sensors within the plant (energy, production, maintenance) and for open data (weather forecast, etc). This technology enables energy managers to go further and faster in their daily decisions: energy purchase prediction, consumption drifts and demand/response opportunities anticipation, key performance indicators customization, real-time monitoring of action plans, etc.

Goals :

The aim of this project is to design failure models for industrial machines relying on energy consumption, production data and maintenance planning.

Designed models will have to provide a probability of failures in the following next days. To realize these models Energiency will provide four data sets containing energy consumption, production data and maintenance planning time series.

Data :

Energiency will provide an extract of their client data which will contain three years (from 2013/01/01 to one or two days before the beginning of the project) of data. All the cleaning work will be realized by Energiency and data will be ready to use. There will be four data set, one for each machine. Each data set will contain consumption data, production data, and maintenance planning with frequencies from 10 minutes to 1 hour.

Technology

To read the data team will have to use Mongo DB, then team will be free to use the latest tools.

Perspective :

At the end of the project one or two internship position will be available at Energiency.

Contact :

Aymeric Hervieu

R&D Director - Energiency

+336 41 89 18 09

aymeric.hervieu@energiency.com

www.energiency.com