L'Intelligenza Artificiale come abilitatore essenziale per l'Industria 4.0

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Organizzato da

Embracing Industrial IoT through logical steps of value

Gather the data

- Instrument your equipment/assets to collect data
- Gather already existing data from various sources

Connect assets, outfitted with sensor or data gathered

Visualize the patterns

- Visualize your data in meaningful dashboards
- Start to see patterns
- Build with Watson IoT solutions

Quickly build dashboards for data & process visualization

Advance to analytics

- Gain insights from the data
- Produce models, prediction, issue detection patterns
- Propose resolution and recommendations

Use analytical models to predict equipment failures and provide recommendations

Infuse with cognitive

- Refine models with cognitive machine learning
- Utilize other cognitive functions to improve engagement

Use speech, video, image to diagnose complex problems

So what is Artificial Intelligence?

The capability of performing intelligent human processes as Learning, Reasoning, Problem solving, Perception, Language understanding, etc

AI has become an essential part of the technology industry, providing the heavy lifting for many of the most difficult problems in computer science.
Prediction, Classification,Regression, Clustering,Function optimization

Why AI is essential for Industry 4.0 ?

- Economical needs
  - Experts highly qualified are expensive and unaffordable
  - A way for training new experts
  - Knowledge preservation
- Computational efficiency
  - General decision methods are slowly and inefficient
  - Massive information needs to be processed
- Decision support system
  - Get fast, efficient and justified decisions
  - Autonomous decisions systems

Companies need specific systems to solve specific problems using the knowledge from domain and the expertise from experts .
They want to introduce our "minds" and "human capabilities" in their systems

Anyway … We prefer to talk about Augmented Intelligence

The Value of Analytics & AI

Image Analytics

Enables monitoring of unstructured data from images snapshots to identify quality defects and failure patterns

Machine Learning

Automates data processing, identifies the best model for the data and continuously monitors new data to learn and improve results

Textual Analytics

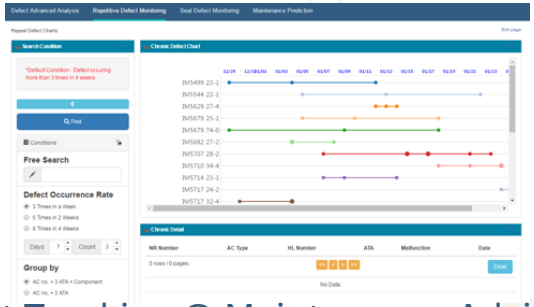
Enables mining of textual sources to find correlations and patterns in structured and unstructured text such as logs and notes

Acoustics Analytics

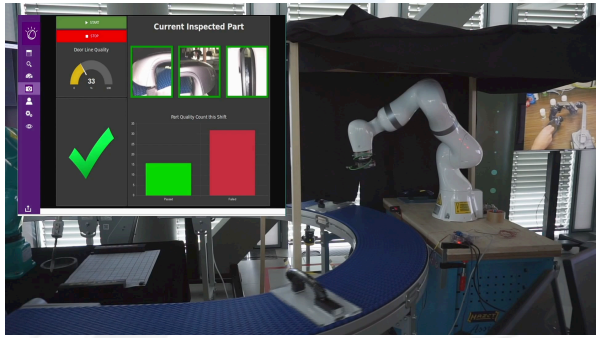
Utilizes audio as an additional source of unstructured data to enable anomaly detection and pattern recognition

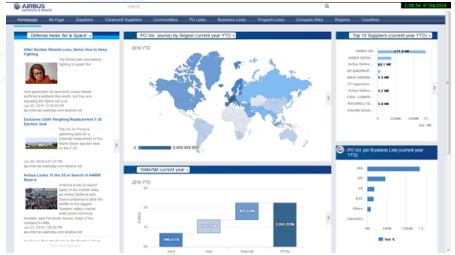
Some applications

Diagnosis & Repair assistance

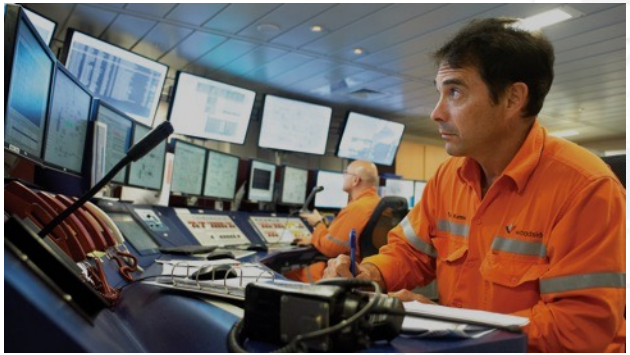


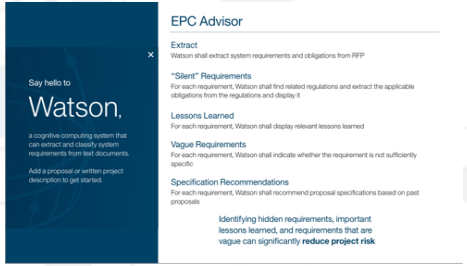
Defect Tracking @ Maintenance Advisor



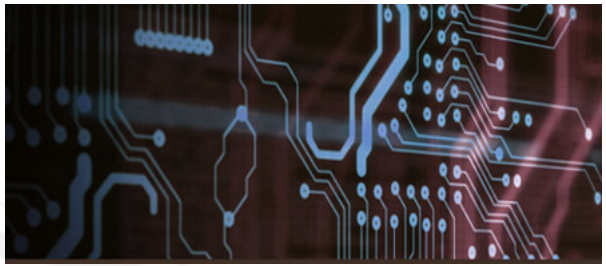


Supply Chain Intelligence



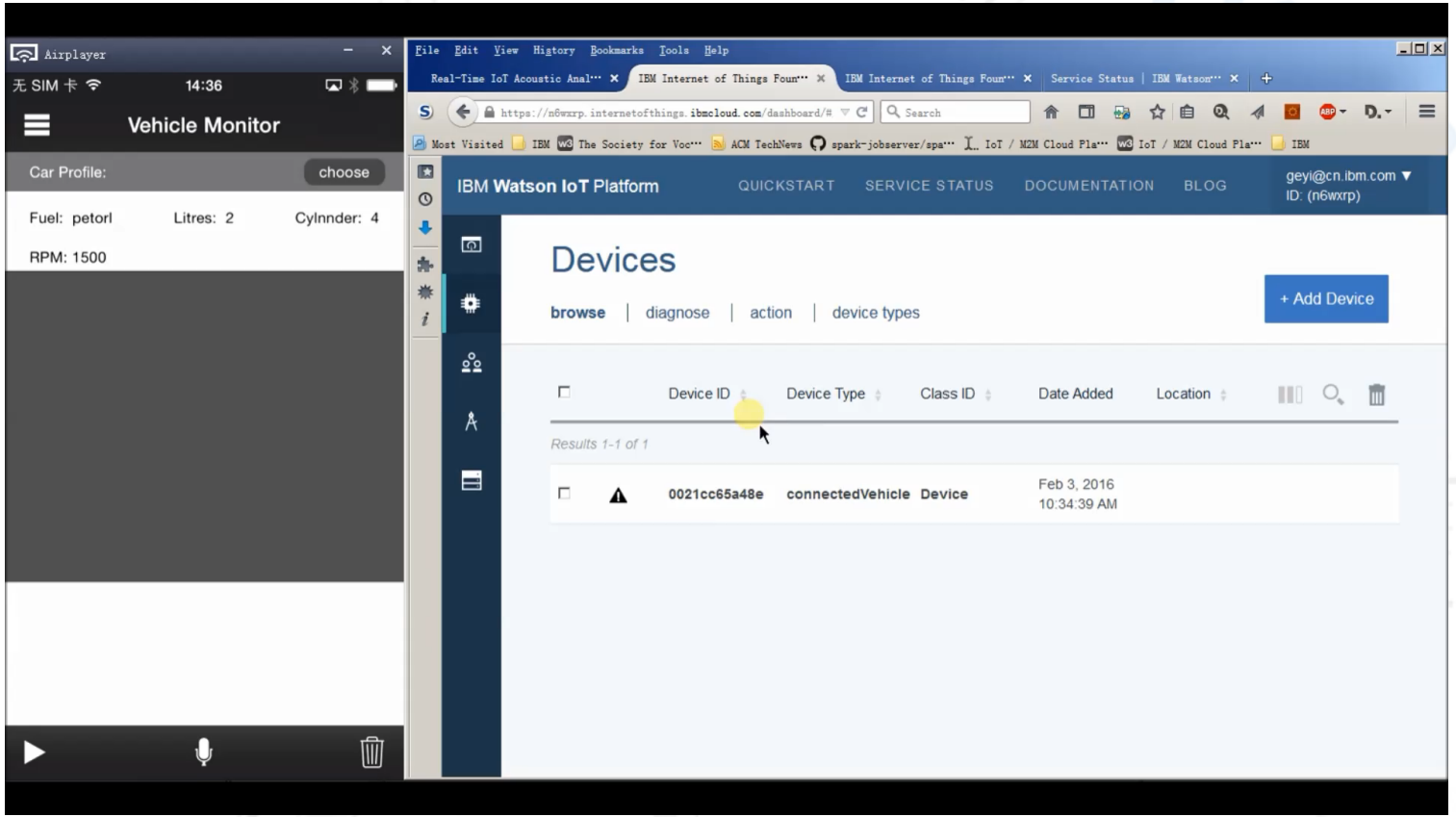


Knowledge Management & Expertise Sharing
-Engineering assistant



Cybersecurity

Acoustics Analytics



Text Analytics

Pdf-parser:

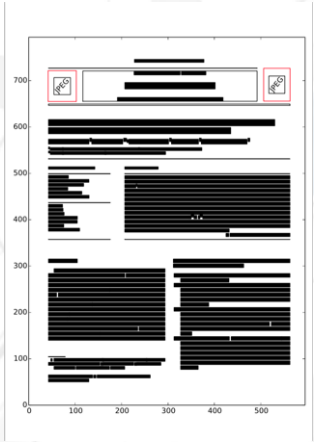
- Parses the pdf-code and presents the raw data of the pdf (text-cells, embedded images and vector-graphics in consumable format)

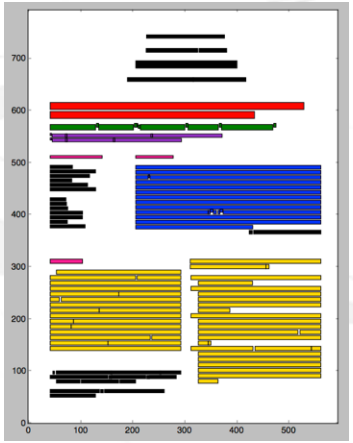
Pdf-interpreter:

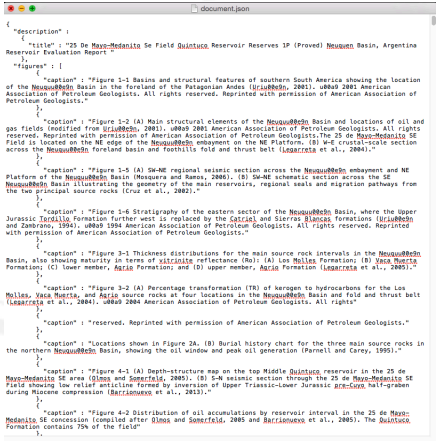
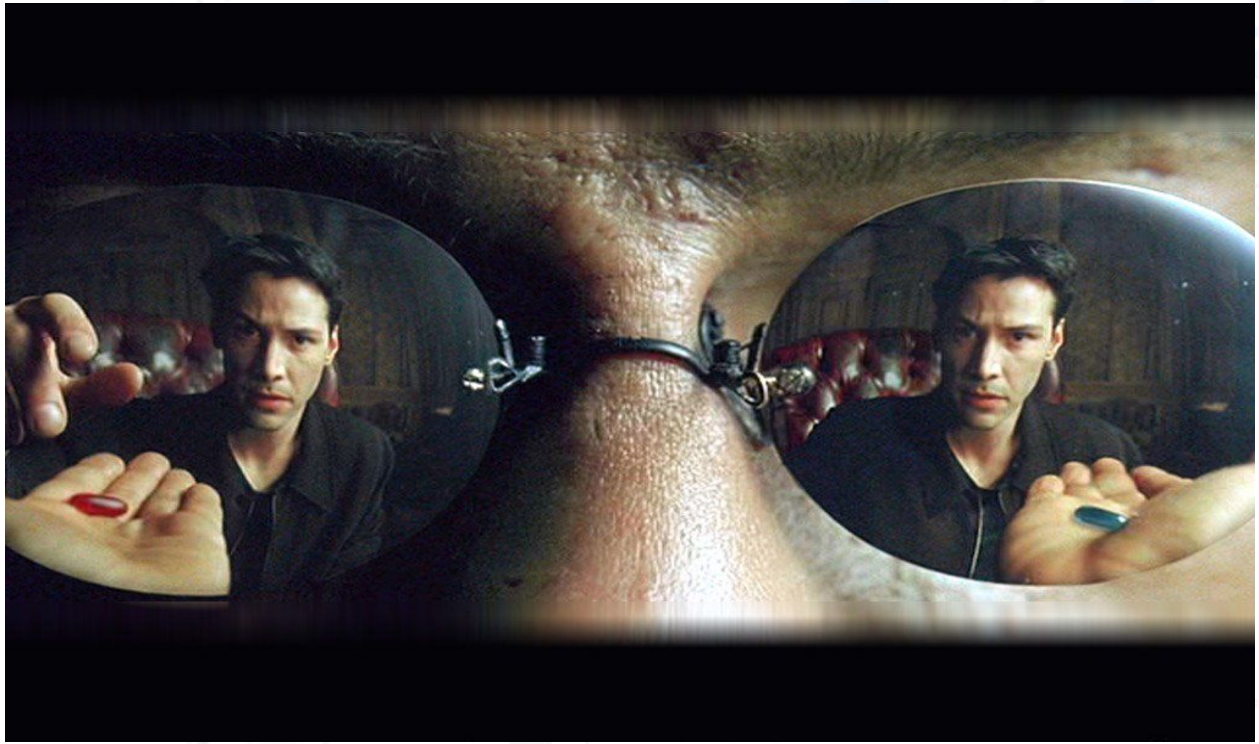
- Captures ground truth by massive Crowd-sourcing big Data system
- Uses HPC for ML-techniques (Deep Leaning), to train automatic annotation models

Semantic-representation:

- Uses HPC & Big Data systems to to obtain a semantic representation in JSON-format of the original text







Siamo davanti ad una scelta …