



VALKUREN



PRESENTATION

UNLOCK THE POWER OF DATA

May 2024



About Us

VALKUREN is a Belgium based company specialized in **Big Data solutions** development including **Data Analytics & Artificial Intelligence** services, in 3 main areas: **manufacturing**, mobility and marketing.

Our mission is to help companies **optimize their processes** and **improve their decision-making** thanks to new ways of leveraging data.





VALKUREN



RP4PL SOLUTION

Reliable Prediction for Product Lifetime

Unplanned downtime

+45 Billion €/ year



1M €/hour



10K €/hour



20M €/year

Your challenges



QUALITY PRODUCTION

- **Ensure** product quality and reliability is at the forefront
- **Maximize** performance of high precision machines
- **Verify** the accuracy and consistency of test bench procedures and results to minimize the risk of human error



WARRANTY & SUPPORT SERVICE

- Post-installation **failures** lead to significant **financial** ramifications
- Reliability issues undermine **trust** and brand **reputation**
- Data fragmentation and **complexity** can lead to difficulty in identifying the **root causes** of failures

RP4PL Solution

Upload Data

Final Test*
xlsx

Installed Base*
xlsx

Final Test Bench*
csv or zip

Final Test Bench Messages*
log or zip

Put your email address to receive your download link :

Parameters

Classification

Run

[Contact](#)

PUMP PREDICTION TOOL

Classification Results File

RUL Results File

Visualisation

Pump Failure Forecasting

Choose pump by serial number

AP8088045

Lifetime

-103,62

228,27

560,16

Pump AP8088045 has a lifetime of 228.27 days considering an error margin of 331.89.

Top N parameters - Choose your N

1

Importance par Features

Failure Forecast

RUL Forecast

3 - Removals

Data Import Date: 18/10/2021

Country Name: Tout

Customer Name: Tout

Pumps in all Datasets: Tout

Removal: Tout

Proportion of Removed Pumps

Proportion of removed pumps by Customer

Proportion of Removed Pumps by Process

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1 - Installed Base

2 - Running Time

3 - Removals

4 - Failures

5 - Failure Types

6 - Test Errors

7 - Test Error Types

8 - Removal Test

2 - Running Time

Data Import Date: 18/10/2021

Country Name: Tout

Customer Name: Tout

Pumps in all Datasets: Tout

Removal: Tout

Median Runtime

Median Runtime for Removed Pumps

1 - Installed Base

2 - Running Time

3 - Removals

4 - Failures

5 - Failure Types

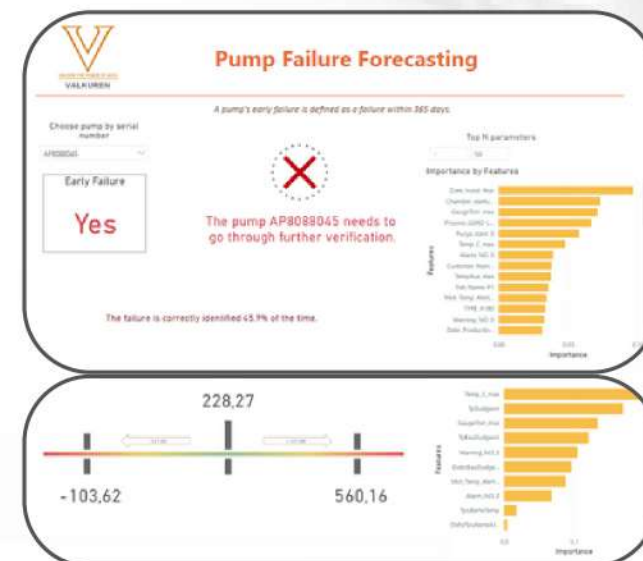
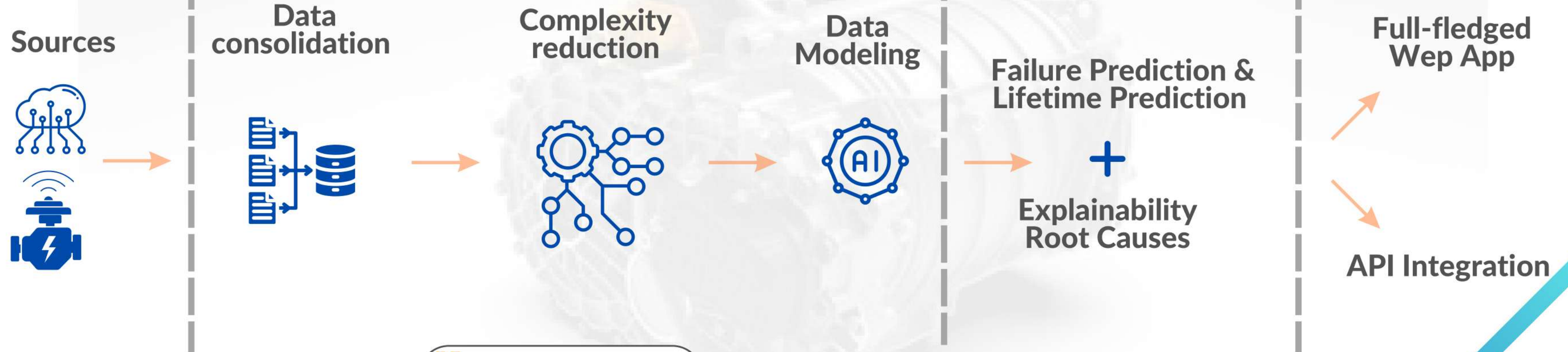
6 - Test Errors

7 - Test Error Types

8 - Removal Test Errors

RP4PL Solution

RP4PL Framework



RP4PL Framework



- Extraction from required data sources
- Format standardizer
- Data quality verification
- Data cleaning

- Data transformation & normalization
- Feature engineering using label encoding, and polynomial & interaction feature creation
- Dimensionality reduction through the use of Autoencoders
- Relevant parameter identification

- Modeling of product lifetime with state-of-art Machine Learning techniques
- Incorporation of historical and recent data to provide reliable and conformal prediction on product failure

Powerful Solution

AI-driven Insights

- High precision machine failure prediction leveraging manufacturing & test bench data
- Life expectancy prediction post-installation

Explainability

- Identification of key predictor parameters in the manufacturing & test bench processes
- Precise interpretation & explainability of the AI pipeline
- Holistic understanding of systemic issue(s) through root cause analysis

Your Benefits



Time-saving

- *Early detection of failures reduces downtime*
- *Failure detection optimises resource allocation and spare-part handling*



Reliability improvement

- *Improved product lifespan increases customer satisfaction*
- *Loyalty improvement through consistent performance*



Performance improvement

- *Ensuring high precision machine operate at peak efficiency*



Our Offer



DATA ASSESSMENT

Check your data quality and history to implement our solution and maximize your data management benefits



PROOF OF CONCEPT

Set up the solution regarding your own process and data specifications



POC TO PRODUCTION

Automate the flow for a complete integration in your processes

They Trust Us



- RP4PL Solution
- Lifetime prediction for Pump
- Root causes dashboarding



- HR absenteeism analysis/prediction
- Finance ETP/FTE & Costs Reports



- Dashboarding analysis based on scheduled bus travels versus real time arrivals
- Lead/Lag analysis & prediction



- Failure prediction upon software and root cause analysis
- NLP tool to help customer support



- Finance Budget Simulation/Planification
- Wheelscan Maintenance Prediction
- Data Lab Community / Training
- MaaS - Data Flow analysis

and many more !

THANK YOU

Website

www.valkuren.com

Phone Number

(+32) 2 372 99 85

E-mail Address

hello@valkuren.com



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