Under the patronage of **H.E. Dr. Abdullah Belhaif Al Nuaimi -** Minister of Infrastructure Development

CONFERENCE
OMAINTEC
2019
EXHIBITION

17th Edition

International Operations & Maintenance Conference in the Arab Countries

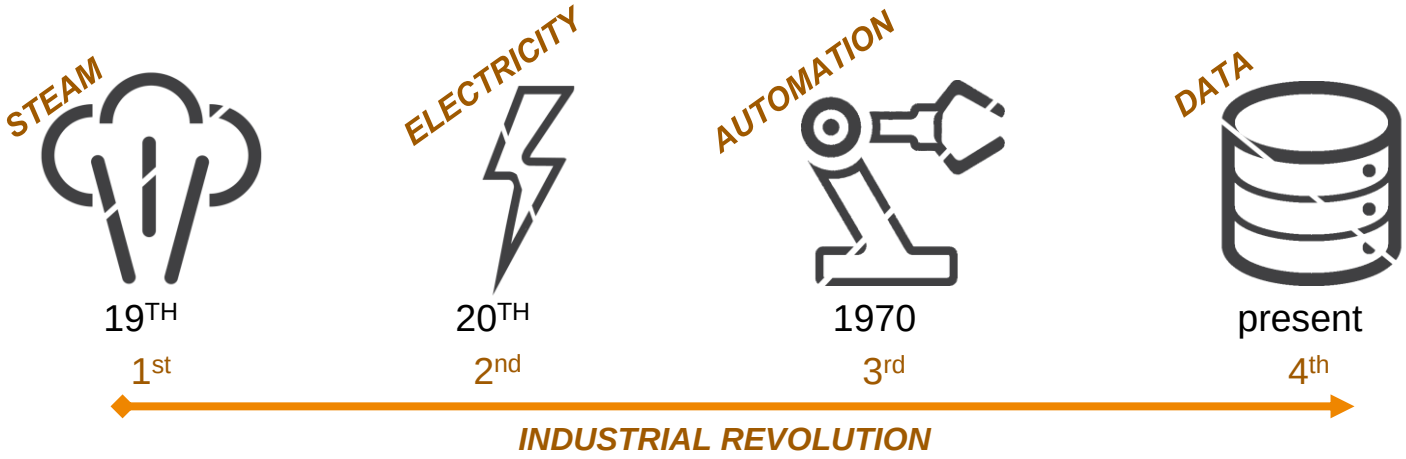
19, 20, 21 NOV 2019
Le Meridien Dubai Hotel
& Conference Centre
United Arab Emirates

Under the Theme:
Enhancing Maintenance
Through Big Data Management

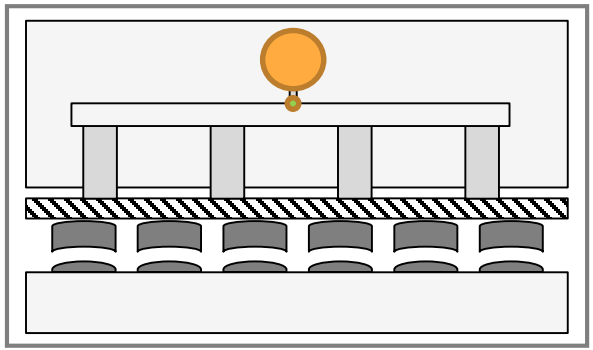
Machines Can Talk...
...Can you listen to Them?

George Effraimidis
HMS Chairman, GM ATLANTIS Engineering

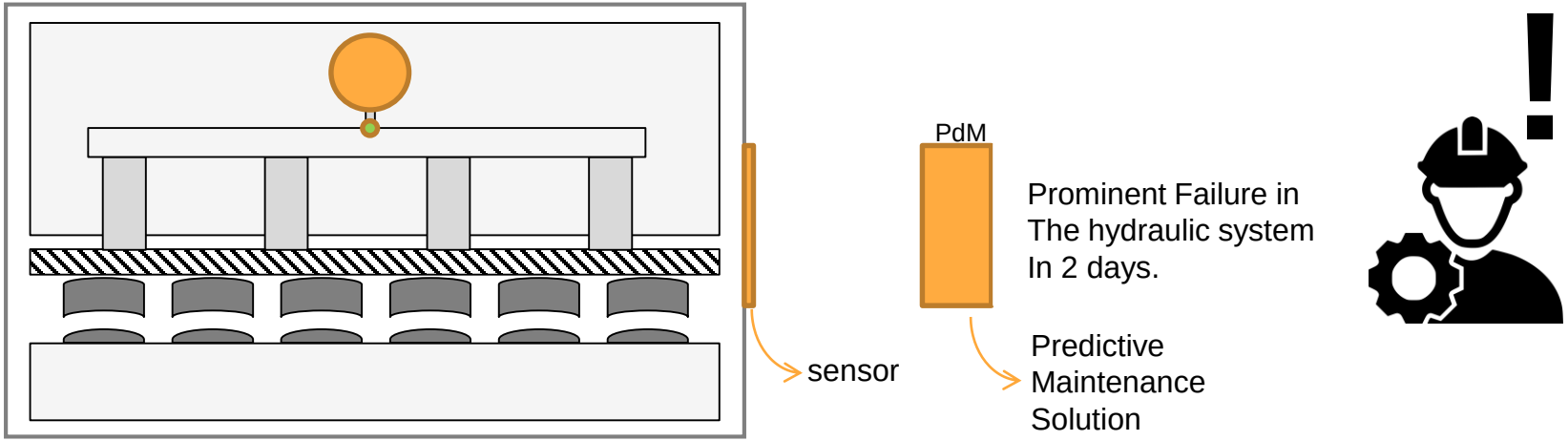
4th Industrial Revolution



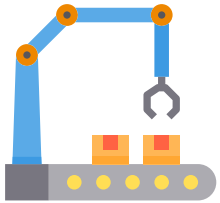
Machines Can Talk…



…can you hear them?



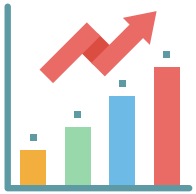
Smart Maintenance Process



Data Collection

Data Pre-processing

Data Processing



Data Analysis

Actions Orchestration

Feedback

Data Collection and Preprocessing

FETCH

TRANSFER

HANDLE

CLEAN

PRE-PROCESS

STORE

BLOCKCHAIN

Data Processing

- Visit the Factory
- See demo videos/presentations
- Read Documents

GATHER EXPERTS KNOWLEDGE

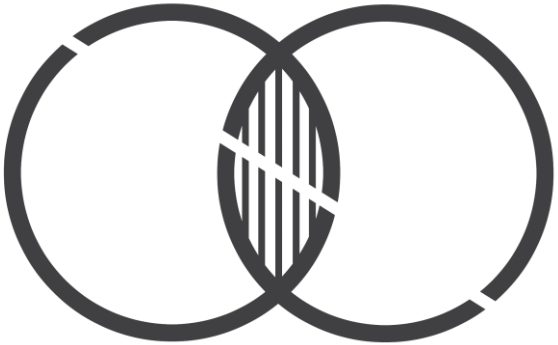
Speak with the experts

PROCESS THE DATA

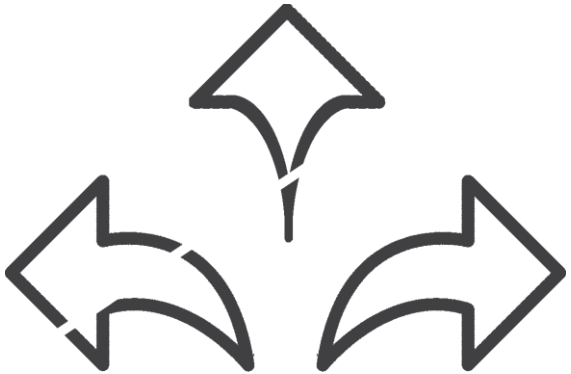
- Algorithm development
- Machine learning
- Build training data
- Build test data

Data Analysis

Actions Orchestration



FUSION



DSS

MES

ERP

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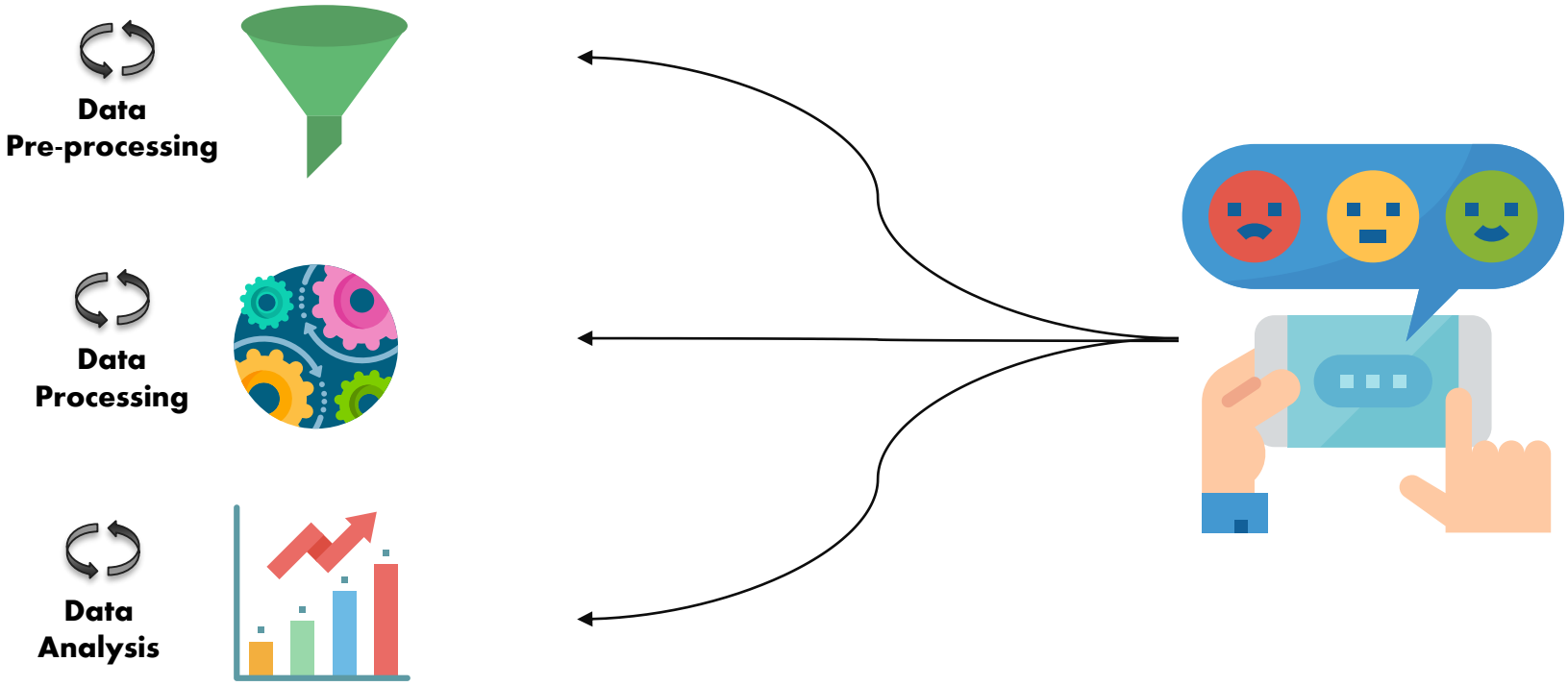
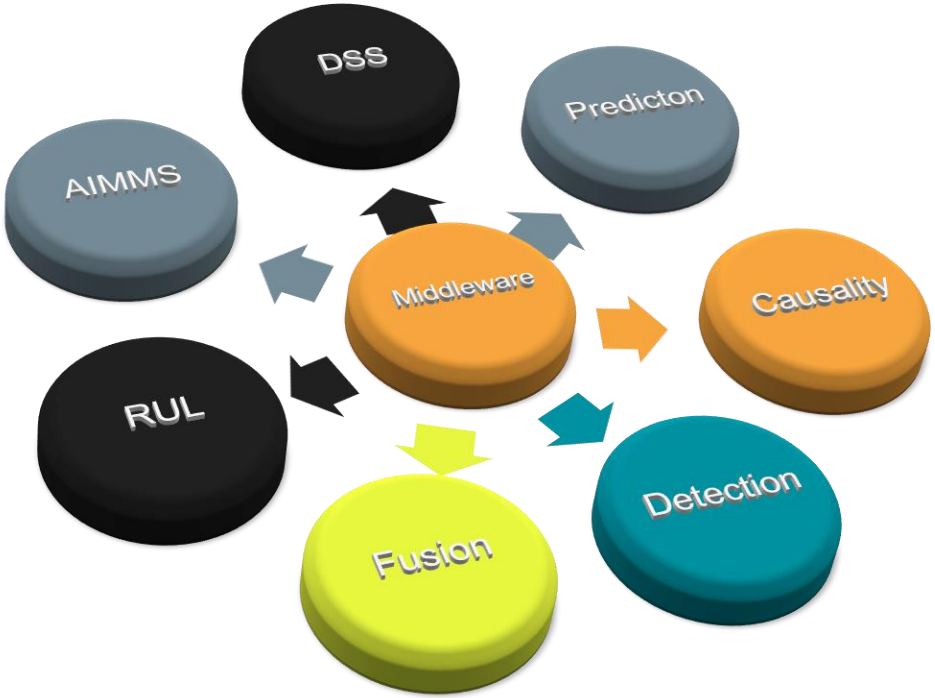
End-user Feedback



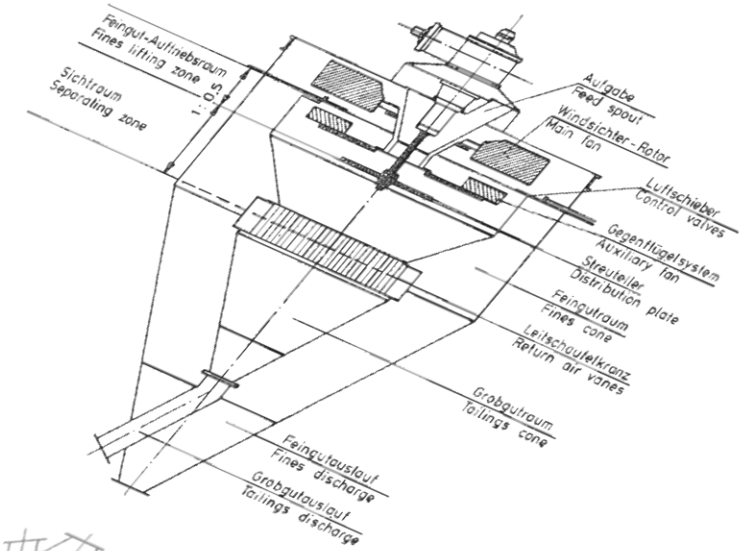
Atlantis Smart Maintenance Platform



- Data Collection
- Fault Detection
- Fault Prediction
- RUL Analysis
- Fusion
- DSS
- CMMS

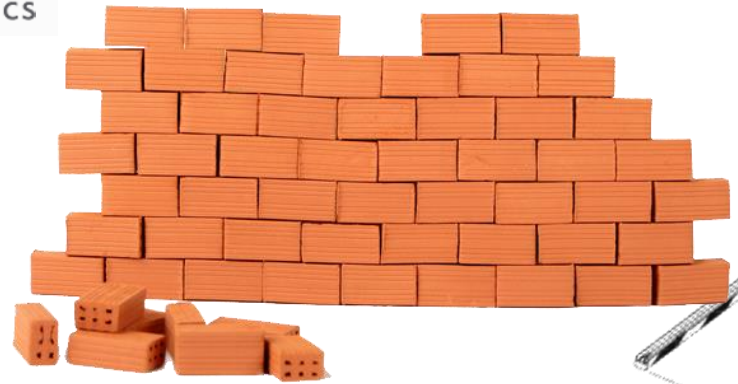
Use cases

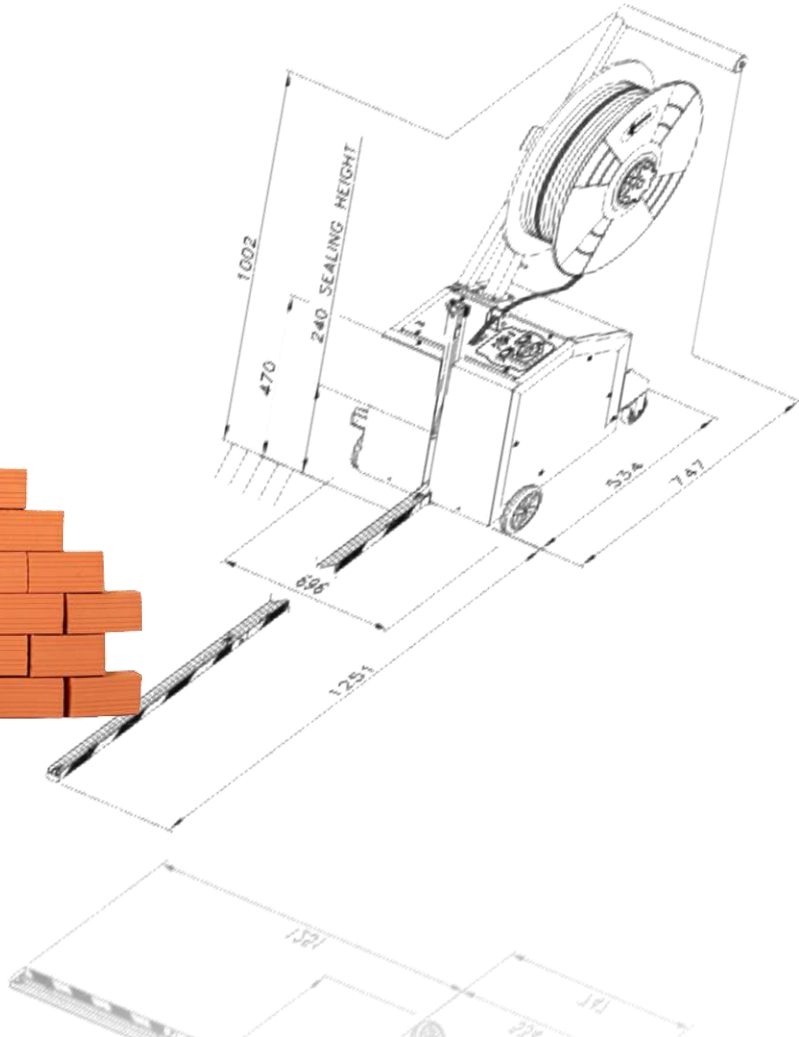
LOULIS mills



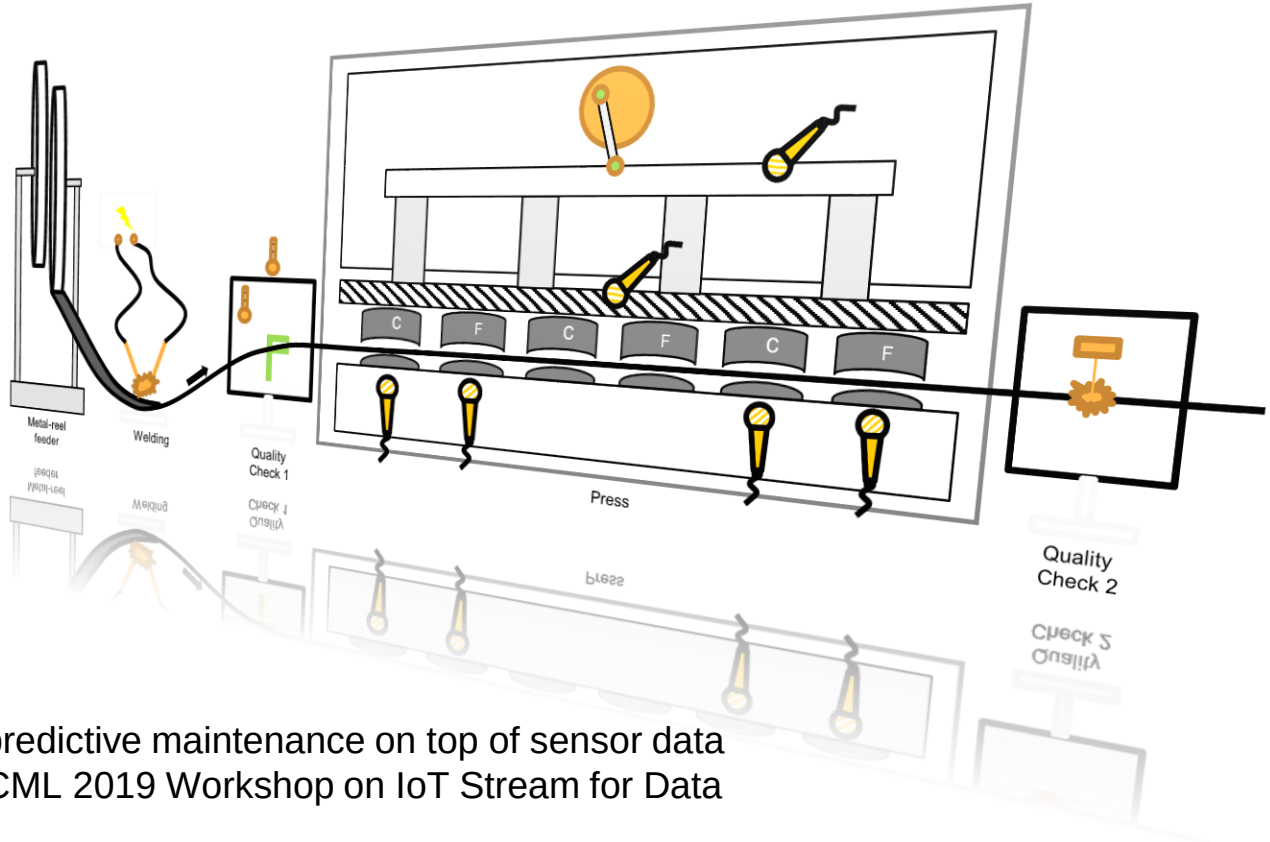
Use cases

EST. 1935
KOTHALI
KEBE
NORTHERN GREECE CERAMICS





Use cases



Precision 82%

Recall 59%

Athanasios Naskos : Event-based predictive maintenance on top of sensor data in a real Industry 4.0 case study. ECML 2019 Workshop on IoT Stream for Data Driven Predictive Maintenance

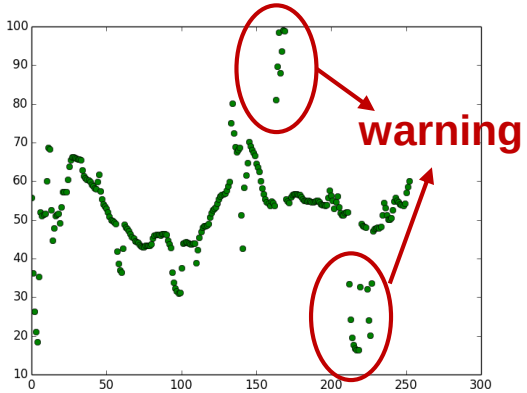
Use cases

1 Rule-based

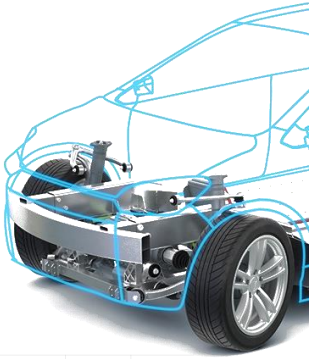
< Y lit

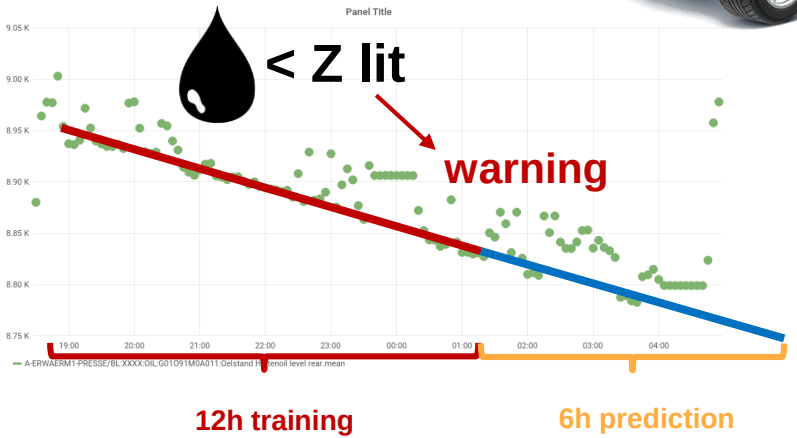
warning

2 Anomaly Detection



3 Fault Prediction





Ensemble of Monitoring Processes

Thank you!

George Effraimidis
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