



Cognite

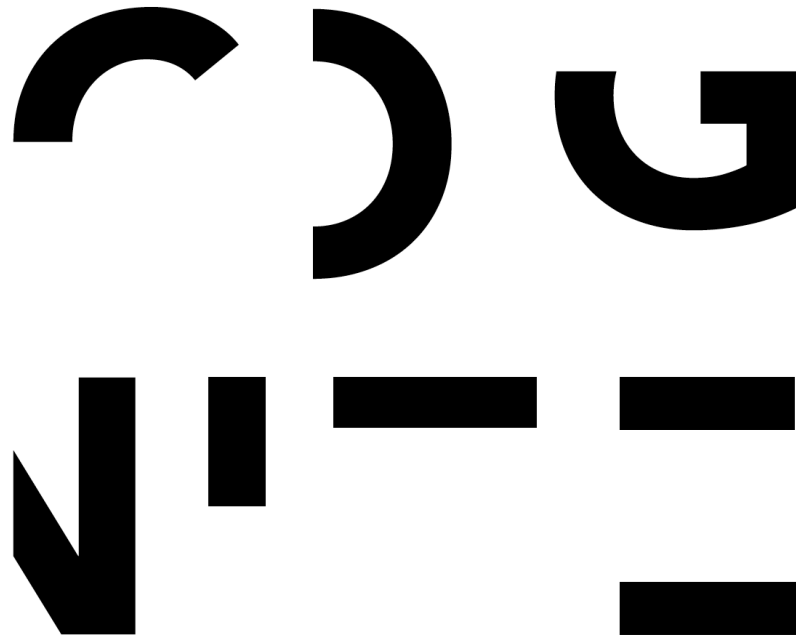
Data sharing - the key to an open and collaborative industry

Jørgen Tellefsen

DIRECTOR OF CUSTOMER SUCCESS

November 26th

SSV | PROJECT WORKSHOP: DIGITAL TESTBED



**“WHAT DOES IT TAKE
FOR TWO 16 YEAR OLD
KIDS IN A GARAGE TO
PARTICIPATE IN YOUR
INNOVATION? »»**

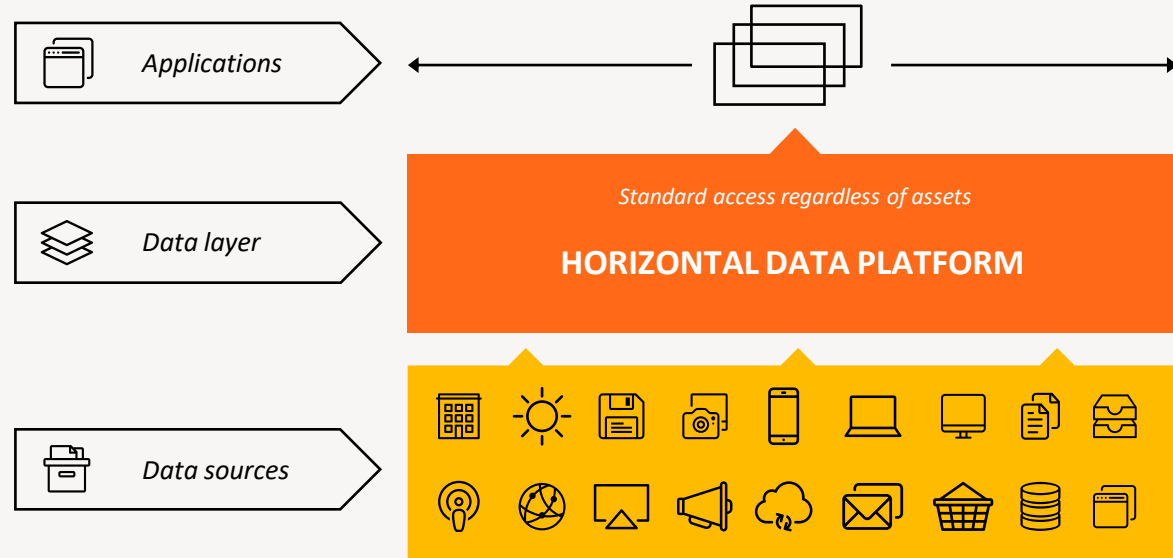


The systematic use of vast pools of data
combined with machine learning will
unlock new value across industries



BREAK THE SILOS

An open, uniform way to access all industrial data



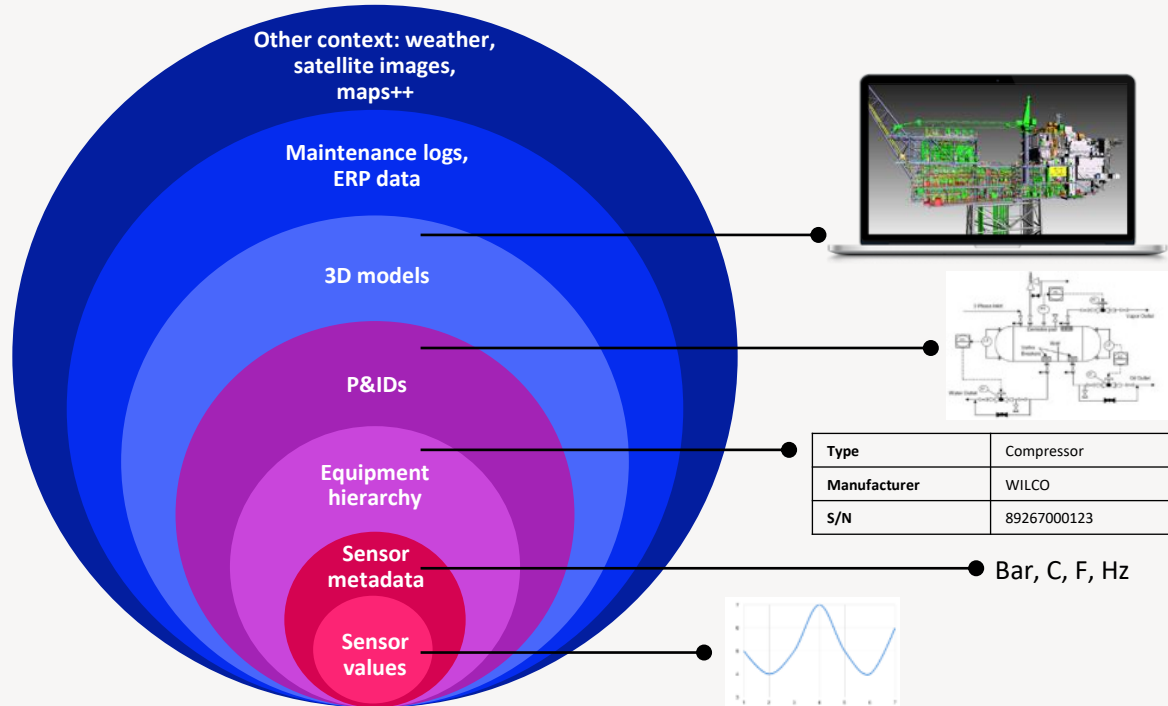
CONTEXTUALIZE THE DATA TO BE ABLE TO EXTRACT INSIGHTS



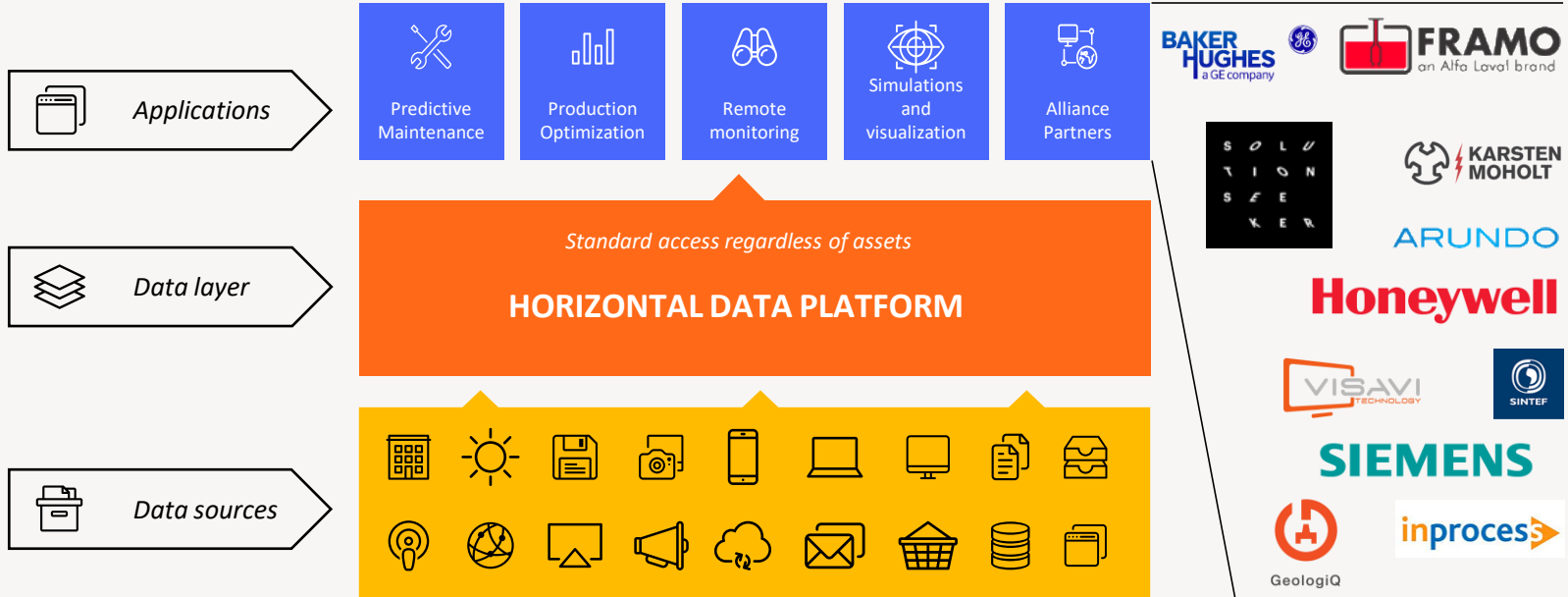
100,000
sensor tags



Operational
data in 50+
applications



ENABLE A THRIVING, OPERATIONAL APPLICATION ECOSYSTEM



PLATFORM PRINCIPLES



Be religious about **separating applications and data**



Follow an **API-centric** approach to accelerate digitalization through an ecosystem and its network effects



Seek a modern **cloud native** architecture based on micro-services available through APIs



Implement a platform designed for **security**



Contextualization of data should be solved once and then be part of your data model for all following UCs



The platform should be built to be the driving force to scale **machine learning** within your company



Your platform should create **no lock-in** and no new silos, but be a neutral data layer



You are probably not unique – focus on **extracting value** rather than to build the infrastructure

The golden principles of data sharing

- All data sharing should happen through an API portal
- All derived output from data shall be stored and available in the API portal
- Data must be linked to an asset and be searchable
- All data is open (internally) by default, unless proven to be confidential or restricted due to legal, market sensitive, or personal information
- All data is available in a standardized, well documented and versioned API
- All APIs have the same authorization and access control and only allows encrypted connections
- All suppliers need to provide their documentation in a machine readable format, ingested into API portal
- No underlying technology will be exposed through the APIs, to ensure continuous optimization
- All data extraction happens real time or regularly - no one off data dumps



ABOUT

DATA

TUTORIALS

REGISTER



ACCESS PLATFORM

INSPIRING INNOVATION & FUELING COLLABORATION IN THE OIL & GAS ECOSYSTEM

THE OPEN INDUSTRIAL DATA PROJECT

A live stream of industrial data, continuously available and free of charge.
Removing the obstacle of data gathering for students, startups & researchers.
Take it and learn with it. Show us what you find.
We're excited to see what's possible.

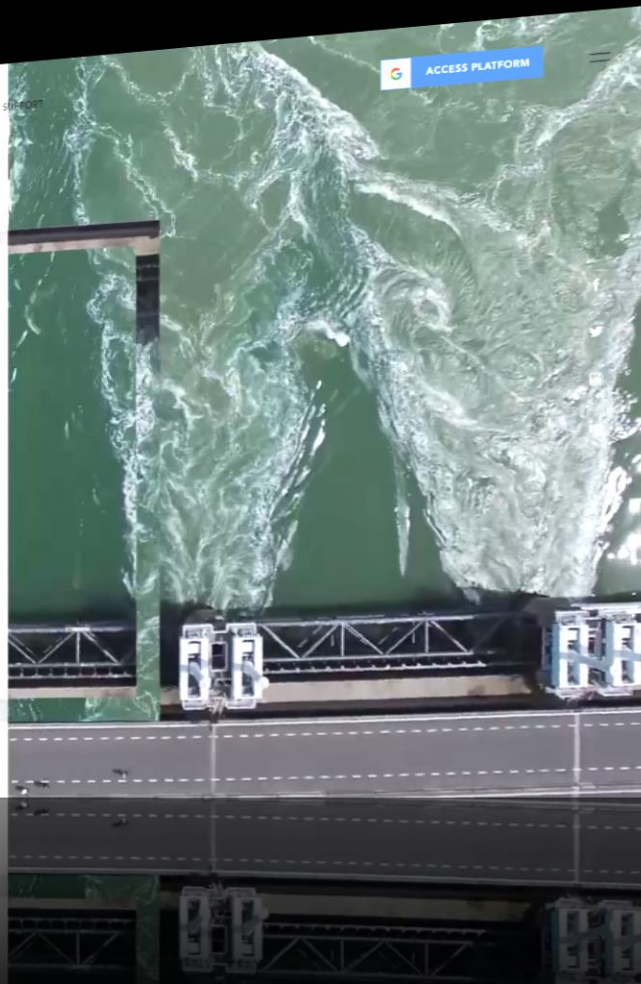


ACCESS PLATFORM



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ipython: Cogrite_ANN User Desktop & User Admin | autohub26

File Edit View Insert Cell Insert | Insert | Help

Toolbar | Python 3

Flow Prediction using GRU

By Project Sandbox Developed by using Python 3.6

Introduction

The tutorial gives an example of how to use Keras and Cogrite to train and create a simple multilayer GRU network for estimating output flow from a 1st stage scrubber some time into the future. An overview figure of the example can be seen below. Suitable data is gathered from cogrite, the data is then preprocessed and used in training the neural network. The resulting network is then saved to disk for later use in other applications.

Training application

Input Layer: Vals_23-LIC-82021.Z.Y.Value, Vals_23-LIC-82021.Z.X.Value, Vals_23-PT-82024.X.Value, Vals_23-LT-82029.Z.X1.Value

Hidden Layer: GRU

Output Layer: Linear

Target Data: Vals_23-PT-82021.X.Value

Local PC, Cloud (AWS), Cogrite SDK, jupyter

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Operational Intelligence

Charts

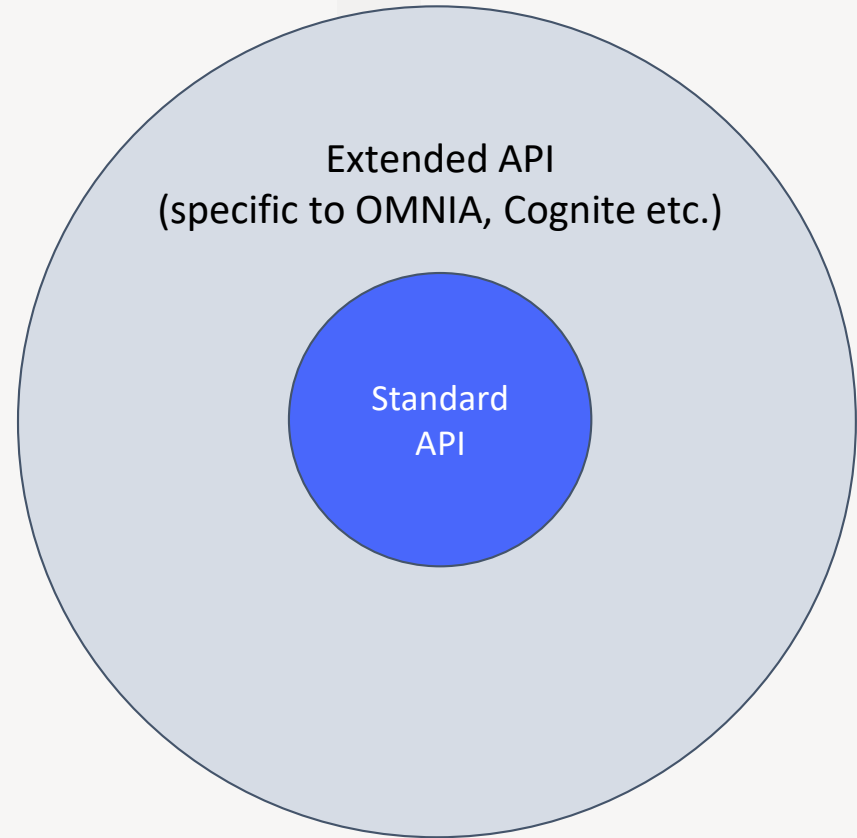
All Create Shared Labels Search Create a new chart

Name	Labels	
Scrubber level control	by patrick.coleman@gru.com	Discard
Compressor pressure and flow	by patrick.coleman@gru.com	Discard
Compressor motor vibration	by patrick.coleman@gru.com	Discard
Inlet cooler temperature control	by patrick.coleman@gru.com	Discard
Throttle and anti-surge valves	by patrick.coleman@gru.com	Discard
Valve position, temperature and flow	by matthew@gru.com	Discard
Valve position, temperature and flow	by matthew@gru.com	Discard
Scrubber level control	by patrick.coleman@gru.com	Discard
Systems overview doodle	by Yaw	Discard
Scrubber level control		Discard

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NCS STANDARD API PRINCIPLES





Vision

**An industrial world operated by algorithms,
freeing human creativity for greater pursuits.**
