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Using AI and ML to generate real business benefits

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Director

Agenda

Introduction

Definitions

Why AI and ML and what problem is it addressing ?

How is AI and ML currently being utilised ?

Where is this going in the future ?

Conclusions

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Will.I.AM, Rapper, Producer, and Philanthropist

"AI is like what the internet was in… 1987, but beyond.

So imagine what people thought the internet would be in 1987 to what it actually is today."

Number of Internet hosts in 1987 = 10,000
Number of Internet hosts in 2019 = 1.03 Bn

Bernard Charles, Dassault Systemes CEO.

"The quality of the service will become the main focus — and the technology should serve the needs of customers, not the other way around"

"Future Supply Chain 2028: Four Factors to Watch"
Gartner

"One of the most important skills of the future supply chain workforce will be digital dexterity"

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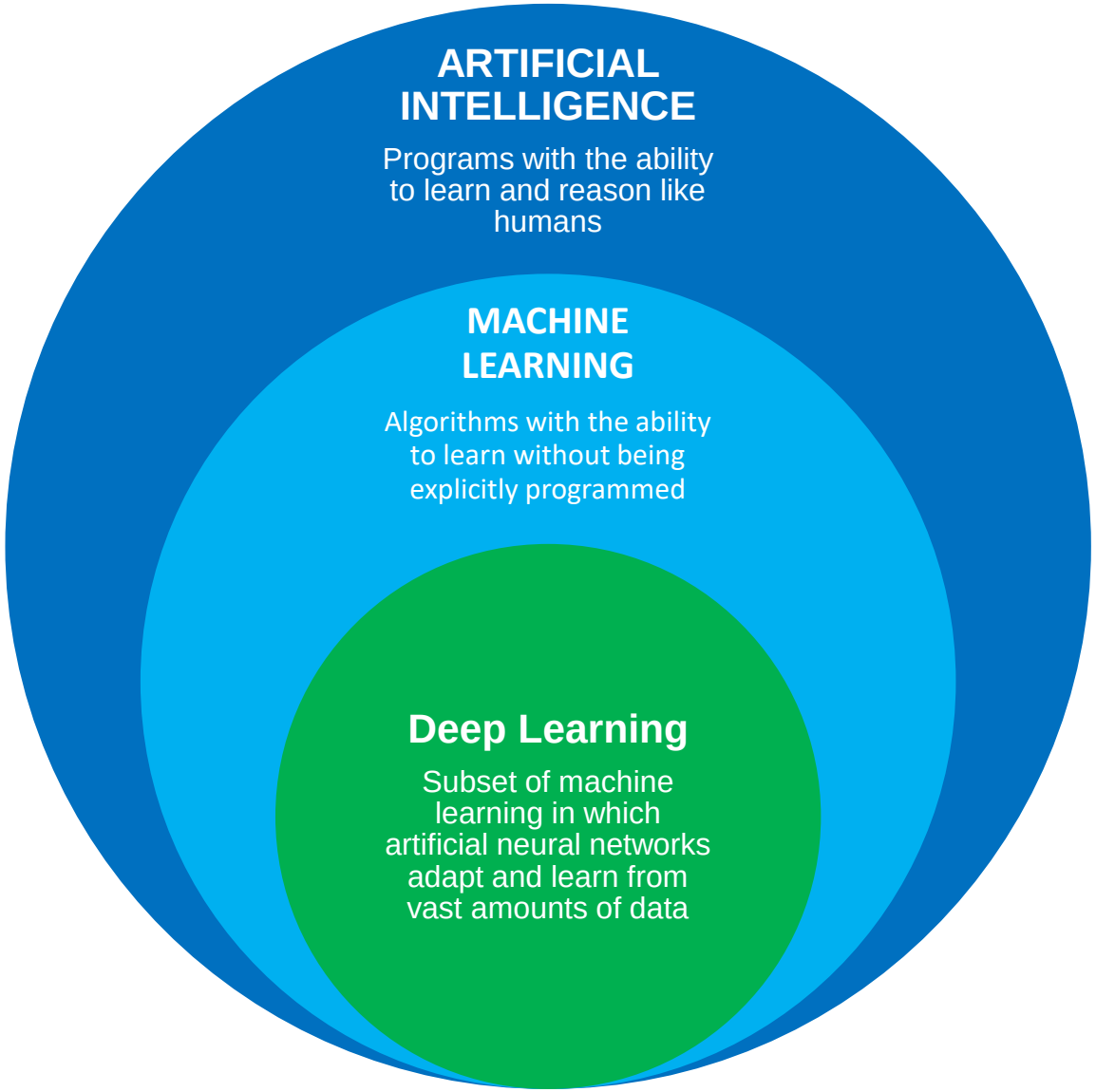

AI Investment

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According to the International Data Corporation (IDC), investments in cognitive technologies and artificial intelligence will reach 19 billion dollars in 2018, 54.2% more than the amount invested the previous year.

In 2021 expenditure on AI will be over 52 billion dollars, after reaching year-on-year growth of 46.2% through the 2016-2021 period.

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The Problem – Incorrect, incomplete, out of date asset information

- Most asset management is based on documents, not data
- Large Capital assets are huge, expensive and complicated to run
- Incorrect information about the asset leads to costly, wasteful operating decisions
- Plant engineers can spend 20% - 80% of their time finding and validating information
- The **biggest revenue loss i**s operators **not having the information** on hand to make the right decisions at the right time

Which means we need to do something different

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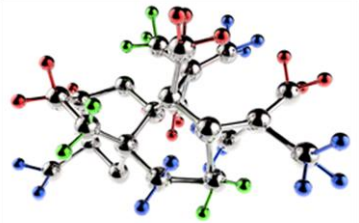
Document Management System
Folder and file based indexing, management



Digital Information Hub
Object (Tag, Equipment, line, system) based information model

+

Visual Thinking

Document Control

Information Engineering Team
+
Analytics & Artificial intelligence

The enabling vision

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Artificial Intelligence (AI) using neural networks enables us to quickly recognize objects and text on engineering drawings allowing us to extract the data from dumb documents

Machine Learning (ML) along with the cloud capability enable us to continuously improve processing of the data and create meaningful results

Combining engineering domain knowledge with data scientists is the winning formula

Examples of Artificial Intelligence and Machine Learning

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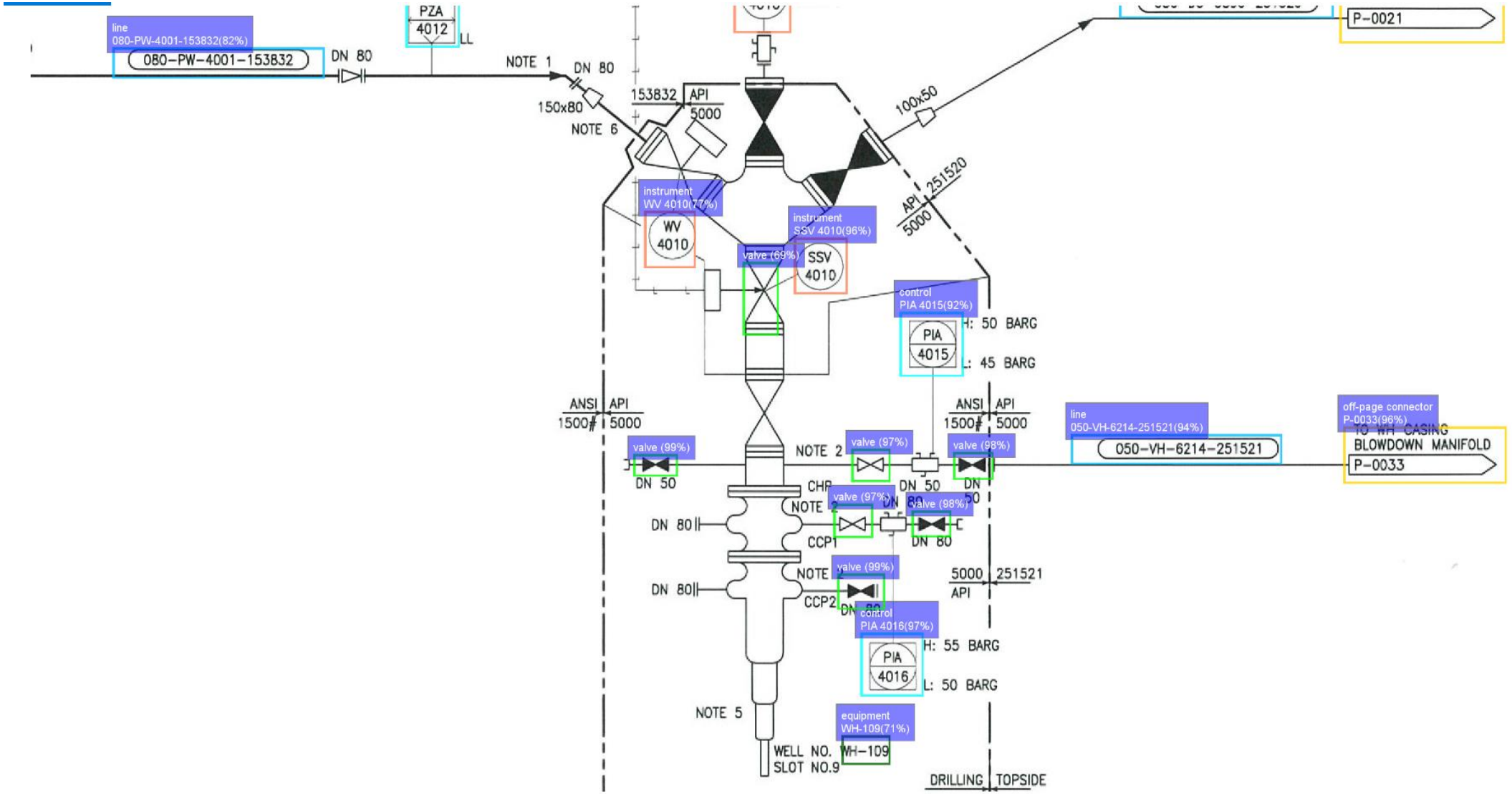

Examples of Artificial Intelligence and Machine Learning

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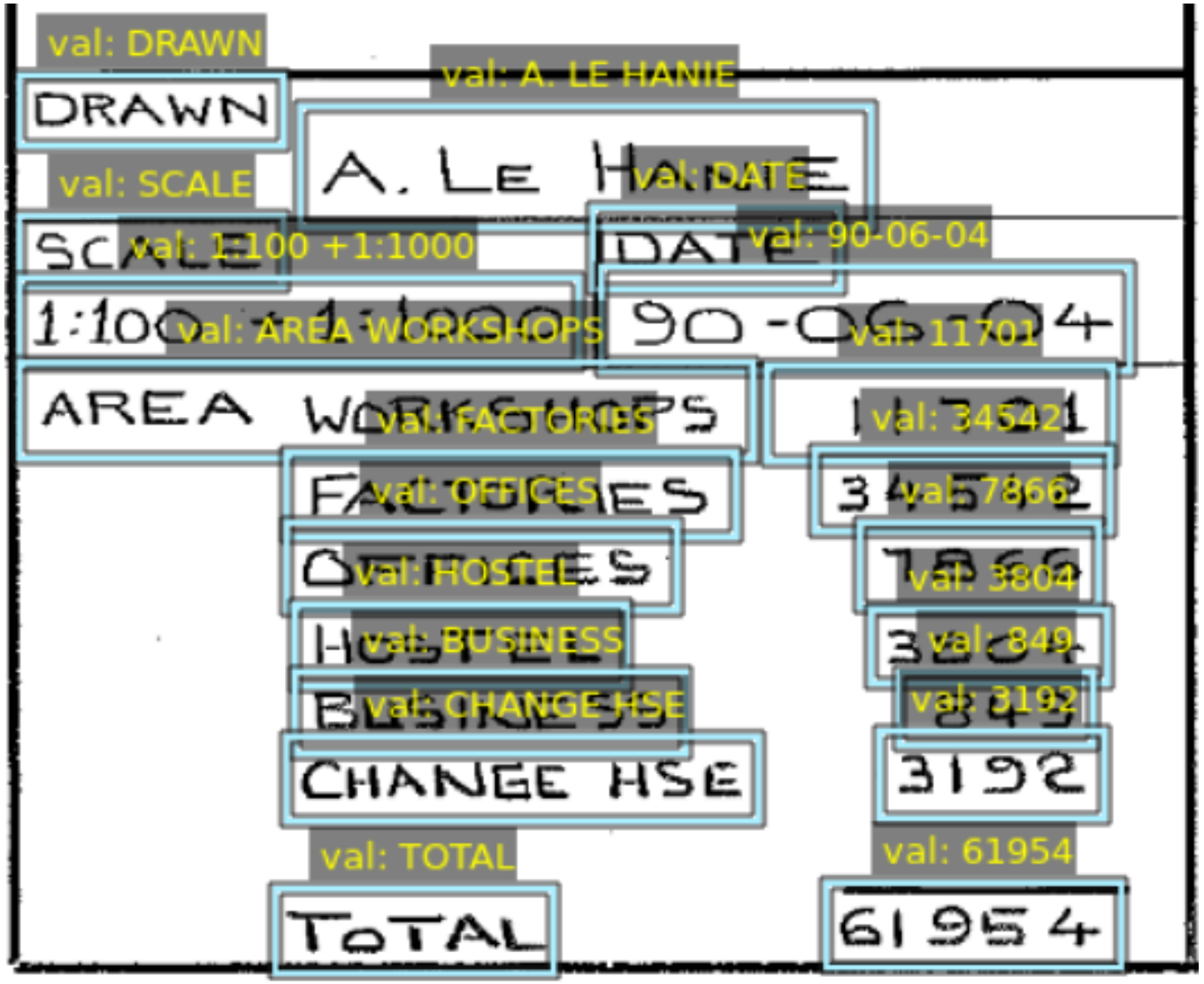

Machine Learning Examples

Retail	Marketing	Healthcare	Telco	Finance
• Demand forecasting • Supply chain optimization • Pricing optimization • Market segmentation and targeting • Recommendations	• Recommendation engines & targeting • Customer 360 • Click-stream analysis • Social media analysis • Ad optimization	• Predicting Patient Disease Risk • Diagnostics and Alerts • Fraud	• Customer churn • System log analysis • Anomaly detection • Preventative maintenance • Smart meter analysis	• Risk Analytics • Customer 360 • Fraud • Credit scoring

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Current uses

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Managing unstructured data

Document Remediation

Data extraction

Managing unstructured data video

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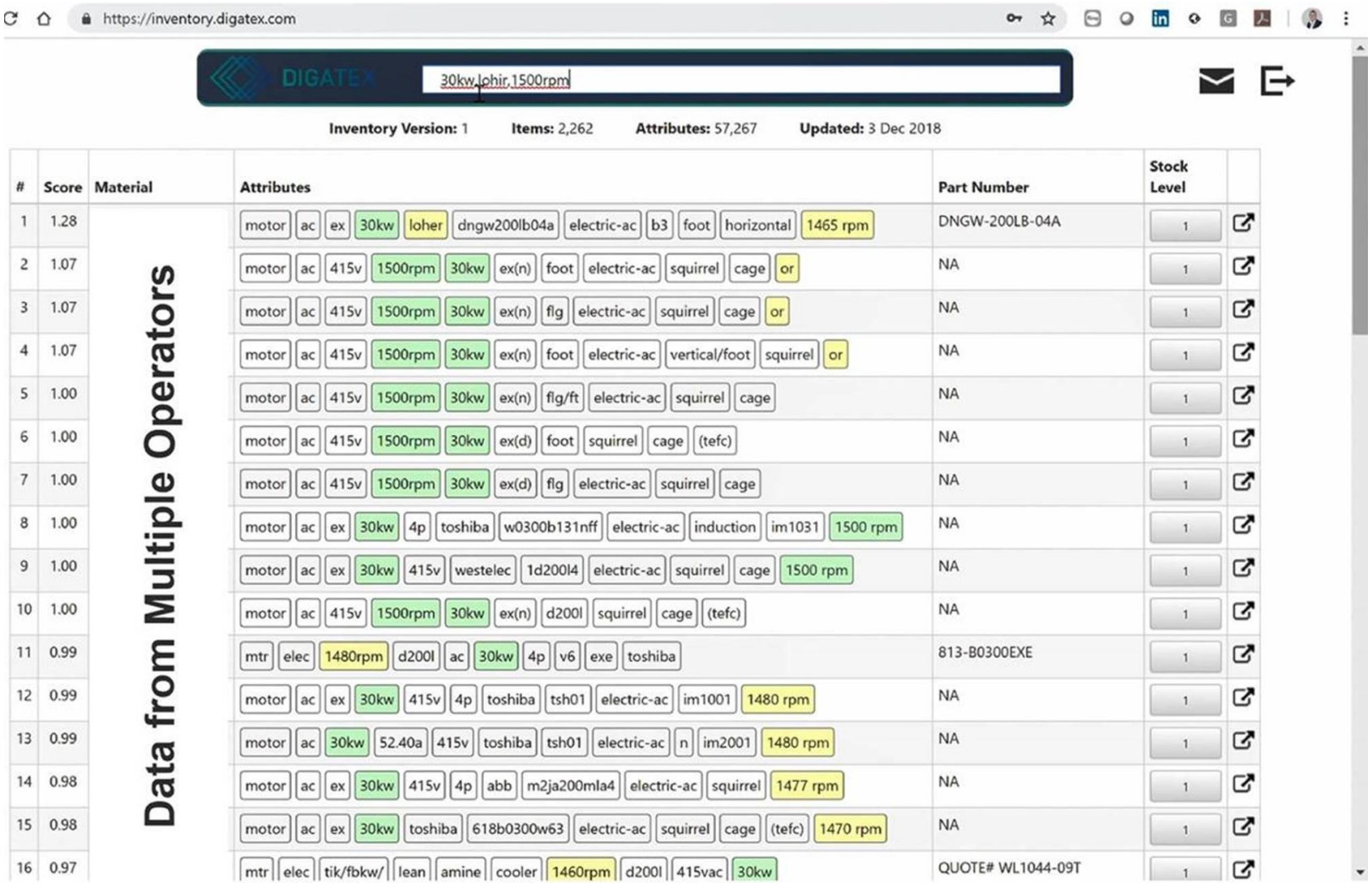

#	Score	Material	Attributes	Part Number	Stock Level
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2	1.07		motor ac 415v 1500rpm 30kw ex(n) foot electric-ac squirrel cage or	NA	1
3	1.07		motor ac 415v 1500rpm 30kw ex(n) flg electric-ac squirrel cage or	NA	1
4	1.07		motor ac 415v 1500rpm 30kw ex(n) foot electric-ac vertical/foot squirrel or	NA	1
5	1.00		motor ac 415v 1500rpm 30kw ex(n) flg/ft electric-ac squirrel cage	NA	1
6	1.00		motor ac 415v 1500rpm 30kw ex(d) foot squirrel cage (tefc)	NA	1
7	1.00		motor ac 415v 1500rpm 30kw ex(d) flg electric-ac squirrel cage	NA	1
8	1.00		motor ac ex 30kw 4p toshiba w0300b131nff electric-ac induction im1031 1500 rpm	NA	1
9	1.00		motor ac ex 30kw 415v westelec 1d200l4 electric-ac squirrel cage 1500 rpm	NA	1
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12	0.99		motor ac ex 30kw 415v 4p toshiba tsh01 electric-ac im1001 1480 rpm	NA	1
13	0.99		motor ac 30kw 52.40a 415v toshiba tsh01 electric-ac n im2001 1480 rpm	NA	1
14	0.98		motor ac ex 30kw 415v 4p abb m2ja200mla4 electric-ac squirrel 1477 rpm	NA	1
15	0.98		motor ac ex 30kw toshiba 618b0300w63 electric-ac squirrel cage (tefc) 1470 rpm	NA	1
16	0.97		mtr elec tik/fbkw/ lean amine cooler 1460rpm d200l 415vac 30kw	QUOTE# WL1044-09T	1

Current uses

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Data extraction

Document remediation – the problem and solution

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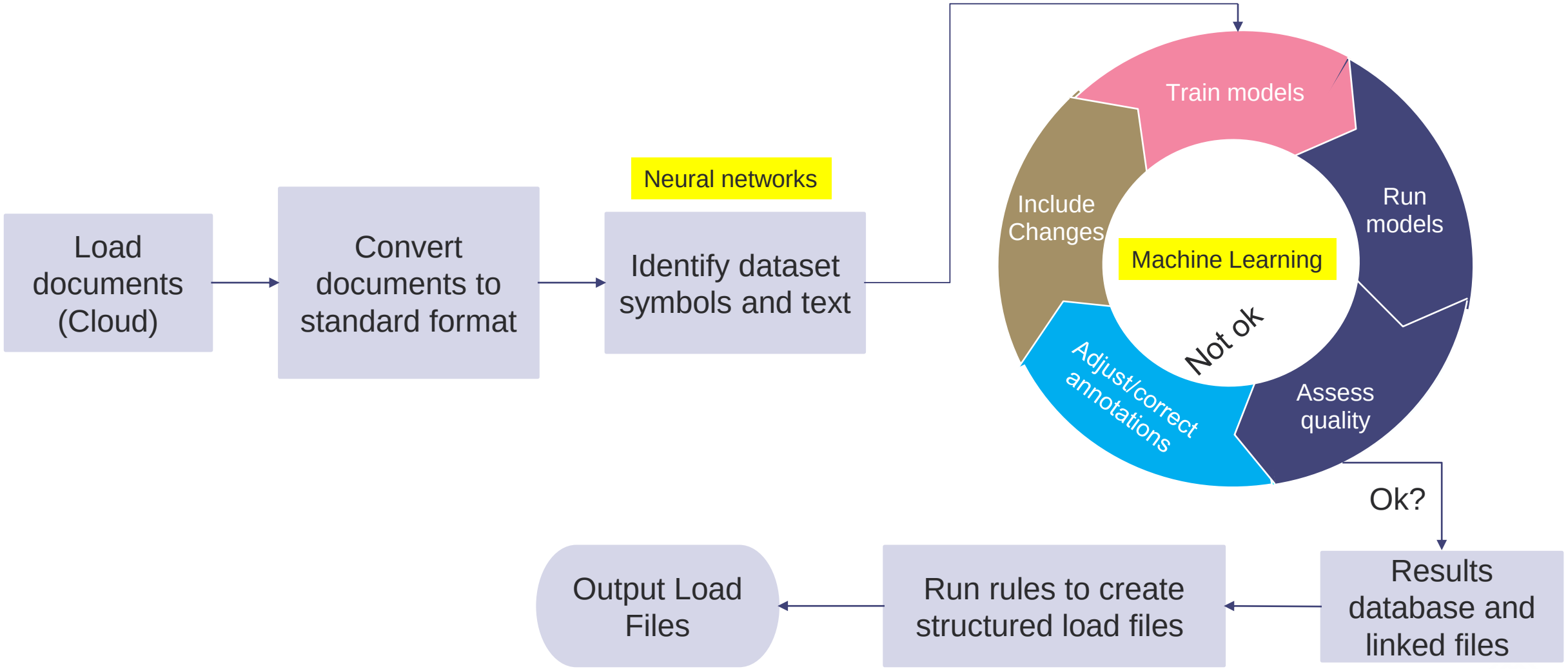

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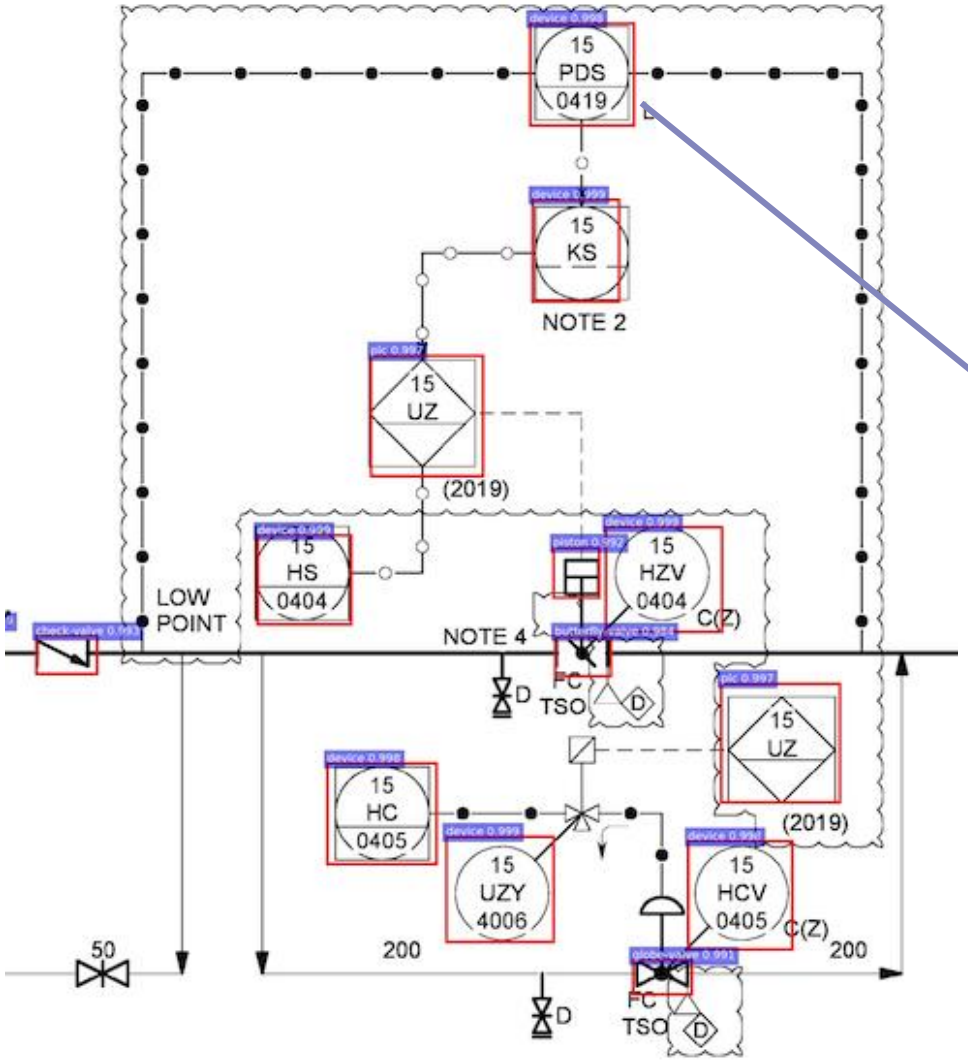

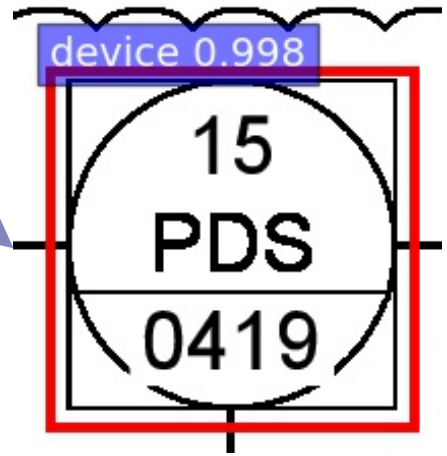

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The future

The future

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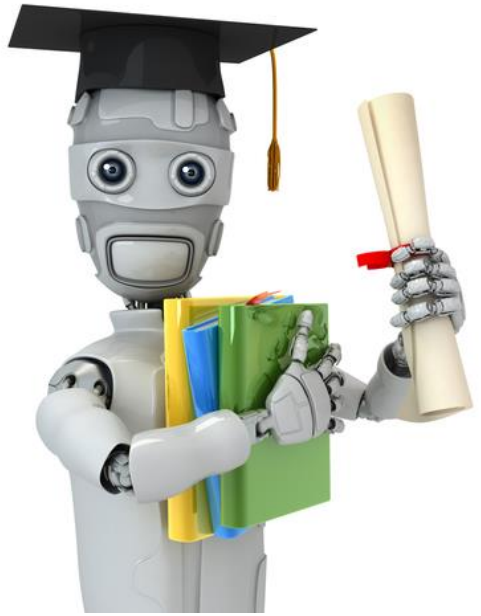
Massive new job market

- Data scientist
- Programmers
- Engineers
- Business analysts

The future

Moving document control to information engineering

- Upskilling of people with document control knowledge



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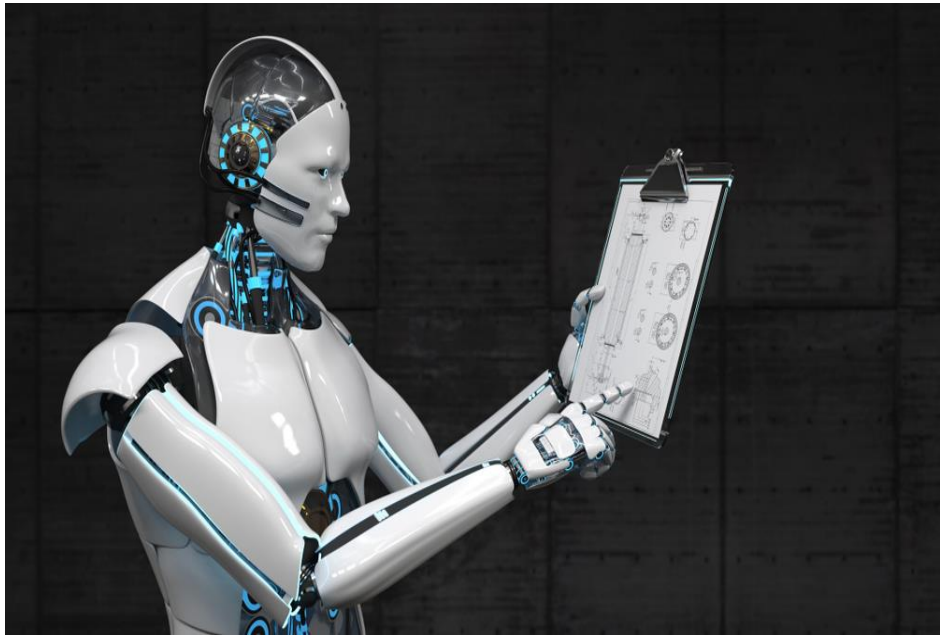
Detecting objects in 3D models e.g. laser scanned images



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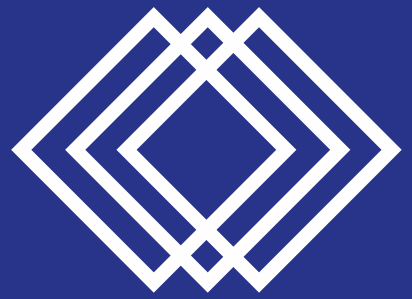

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Helping Owners, Engineering & Construction Contractors
Define, Build and Maintain their Digital Assets

