



Applied Machine Learning at SAP

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SAP: The World's Largest Provider of Enterprise Application Software

388,000+

Customers in more than 180 Countries

91,000+

Employees in more than 130 countries

17,000+

SAP partner companies globally

150 mil.

Subscribers in our cloud user base

91%

Of Forbes Global 2000 are SAP customers

100+

Innovation and development centers

€23.76bn

Total Revenue (IFRS) in FY2017

46 years

Of history and innovation

Our promise is to innovate to help our customers run at their best. SAP is committed to helping every customer become a best-run business.

SAP Leonardo enables the Intelligent Enterprise



7 lines of business

26 industries

77% of the world's transaction revenue

The world's largest business network



SAP Leonardo Machine Learning

Conversational Experience

Intelligent Apps

ML & Data Science Platform

On SAP Cloud Platform & SAP HANA



Business Outcomes



Increase revenue



Re-imagine processes



Quality time at work

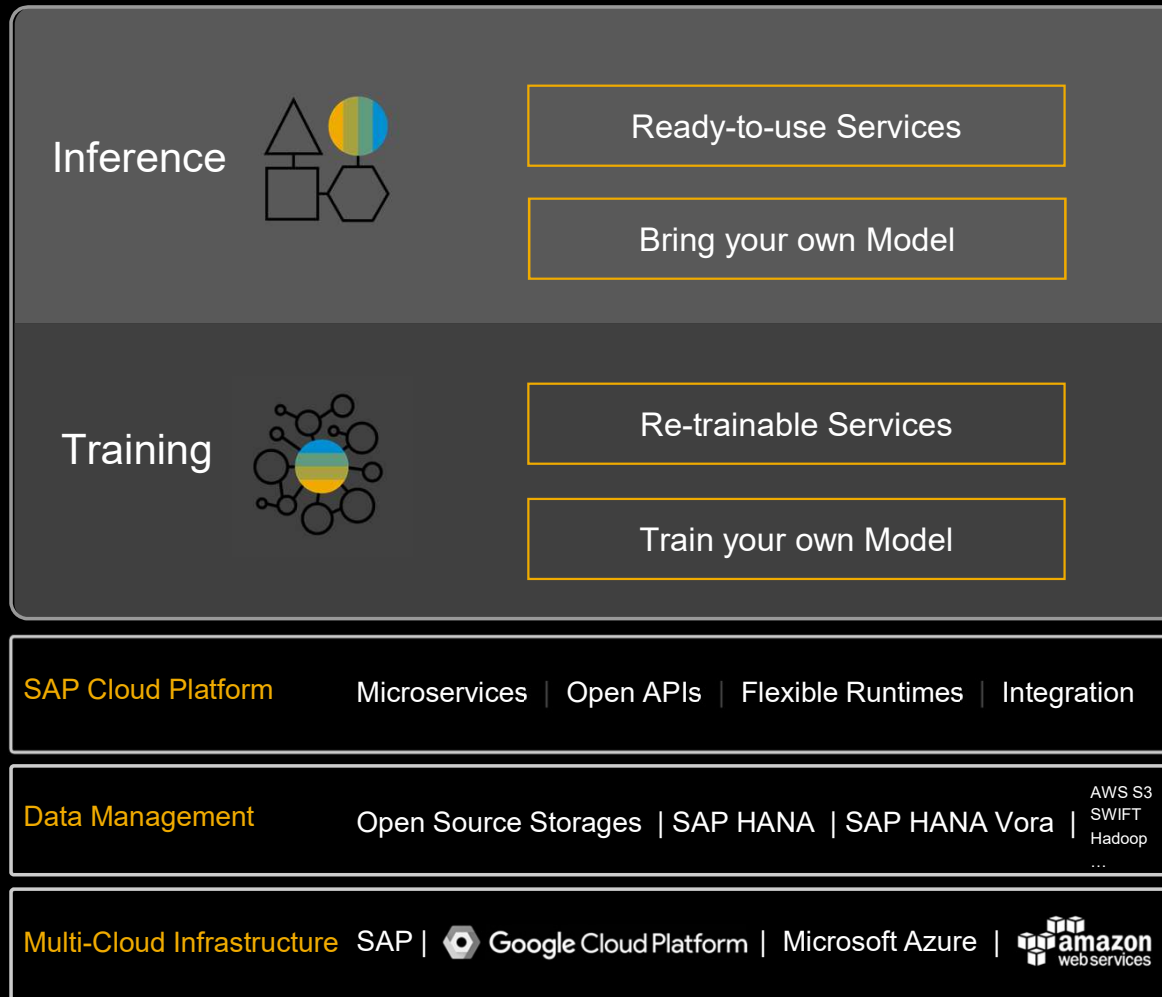


Customer satisfaction



Enabling innovations

SAP Leonardo Machine Learning Foundation



Accelerating customer service with computer vision



Business challenge: Processing customer service requests is cumbersome

- Massive number of incoming service tickets and images of broken products
- Manual identification against a catalog with >40.000 products



SAP Solution: SAP Leonardo Machine Learning Foundation

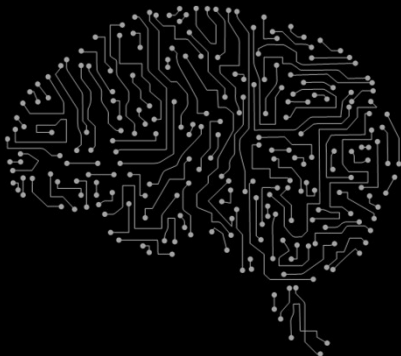
- Using computer vision technology to understand semantic concepts of images
- Comparison of broken product images with product catalog and proposal of matching items in seconds
- ML services used: **Image Feature Extraction** and **Similarity Scoring**

Optimize organization and retrieval of school books and learning materials



Business challenge: High manual effort to categorize learning assets and to find the right school books

- Manual classification and enrichment of data such as age, grade and topic
- High effort due to missing data to search and find the right school books
- Book publisher with several hundred bookshops across Germany, Austria, and Switzerland incl. online operations



SAP Solution: SAP Leonardo Machine Learning Foundation

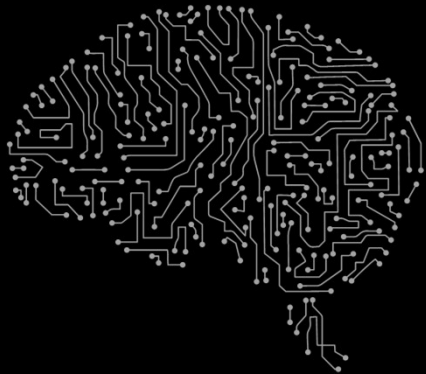
- Classify school books and to provide the missing data in a matter of seconds
- Improve search and retrieval based on richer data sets
- Usage of **Customizable Text Classification service**

Accelerating and safeguarding shipping of oil drums



Business challenge: Ensure correct labeling of oil drums to comply with internal and external regulations

- Manual effort to read information from labels and validate with backend data
- Error-prone process to check information based on manual data entry and look up



SAP Solution: SAP Leonardo Machine Learning Foundation using computer vision technology

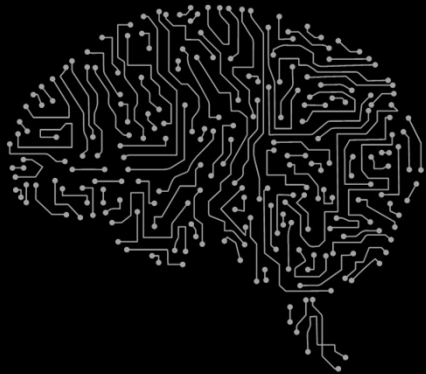
- Automated reading of key information such as product name, SKU and production order
- Automated detection of incorrect labels improves overall accuracy of supply chain quality
- Usage of **Customizable Image Classification**, **Customizable Image Object Detection service** and **Optical Character Recognition (OCR) service**

How Machine Learning helps SAP Globalization Services to identify and rate legal changes



Business challenge: Identifying and rating legal documents that are relevant for product design and development

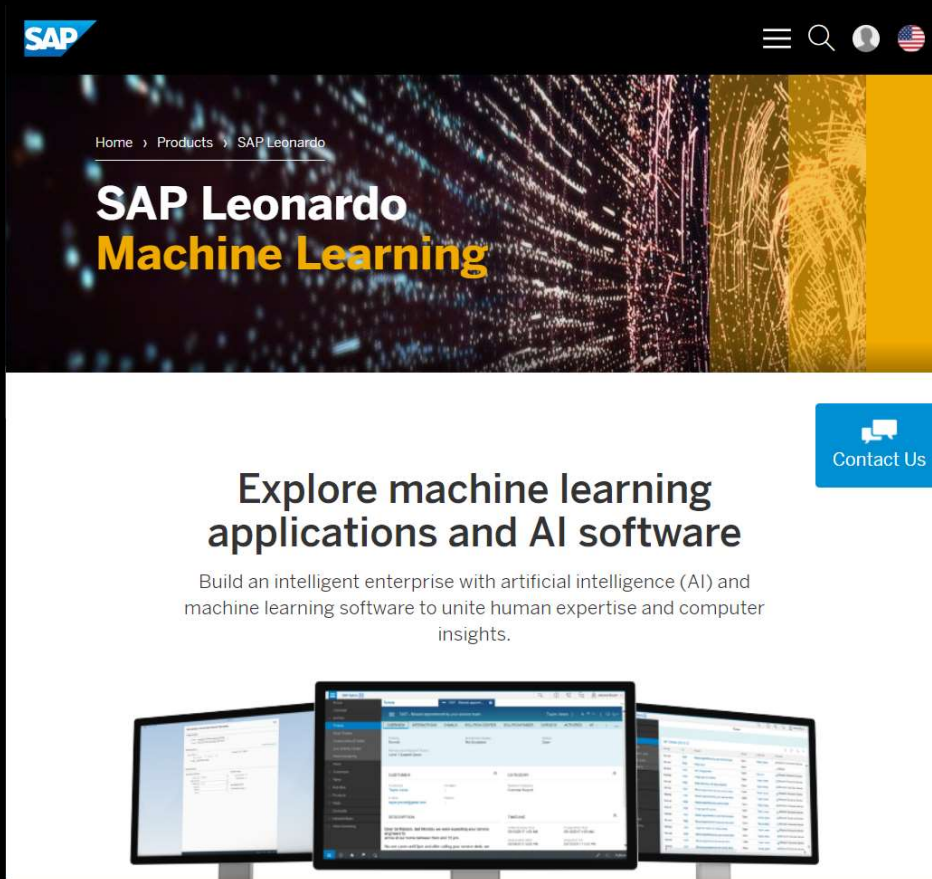
- >1000 legal changes over 100 countries per year
- deciding what is important or not can be challenging
- missing an important legal change can cause huge impact to the business



SAP Solution: SAP Leonardo Machine Learning Foundation text analysis services

- language detection and text classification
- similarity scoring and text feature extraction
- new laws and regulations are immediately detected once published and assessed for relevancy
- algorithms helps prioritizing work and comparing with knowledge base

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→ Enterprise Deep Learning with TensorFlow

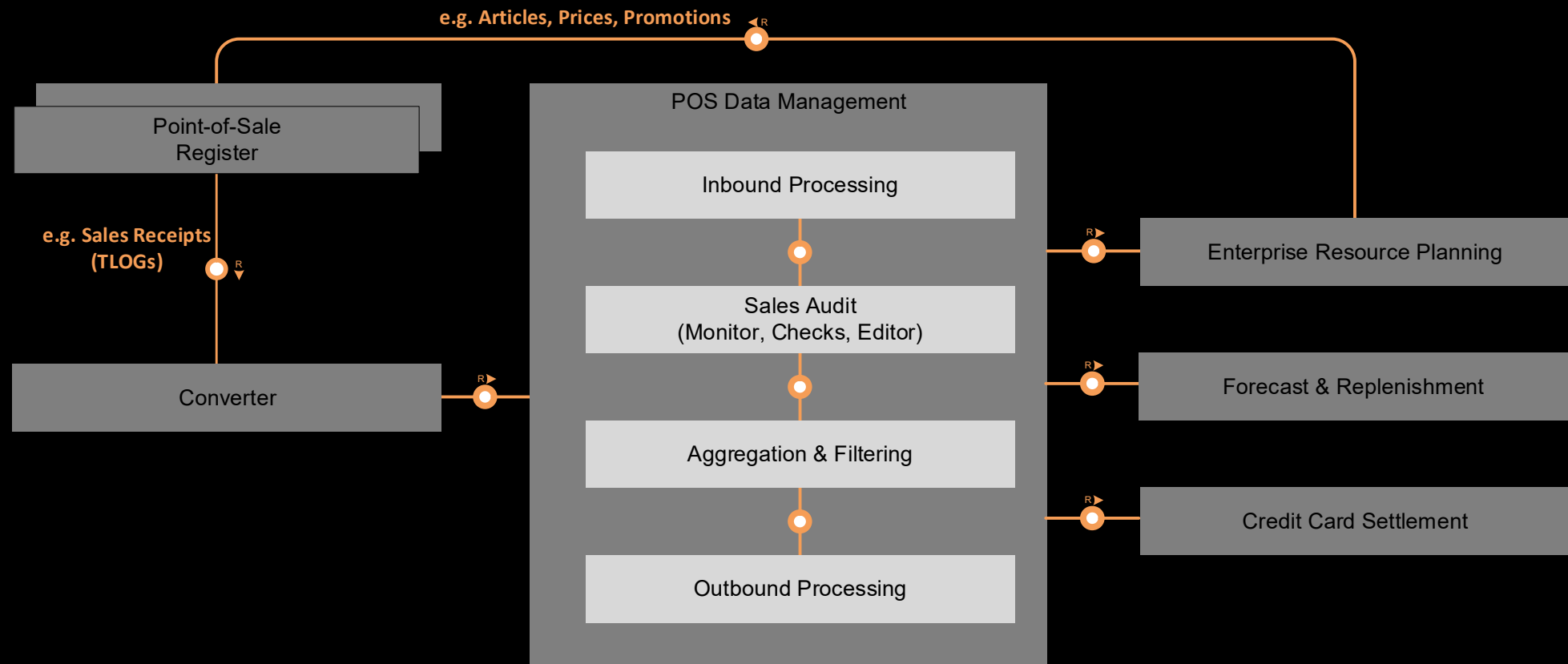
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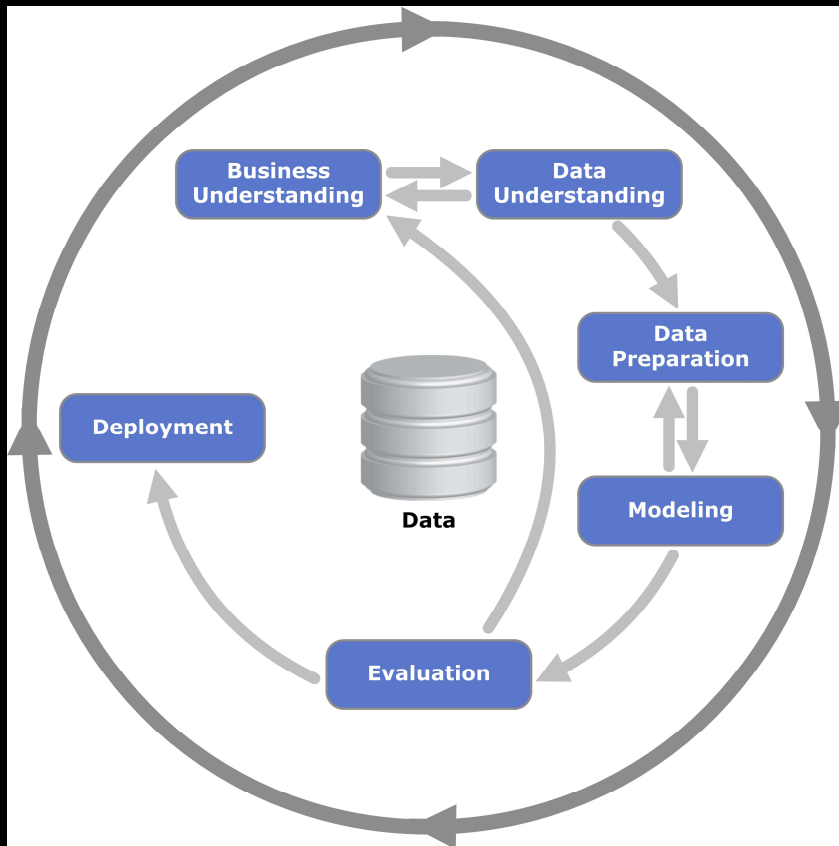
We're hiring → icn.sap.com/jobs.html

Example: POS Data Management – Block Diagram Architecture



Development Process – Example Process Model

Cross-industry standard process for data mining



See https://en.wikipedia.org/wiki/Cross_Industry_Standard_Process_for_Data_Mining

Thank you.

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