# Welcome!

## Machine Intelligence and Start-Ups
Prof. Dr. Erik Graf

- researchXchange BFH-TI

# Machine Intelligence & Start-Ups

some ideas regarding cooperation between applied universities and start-ups
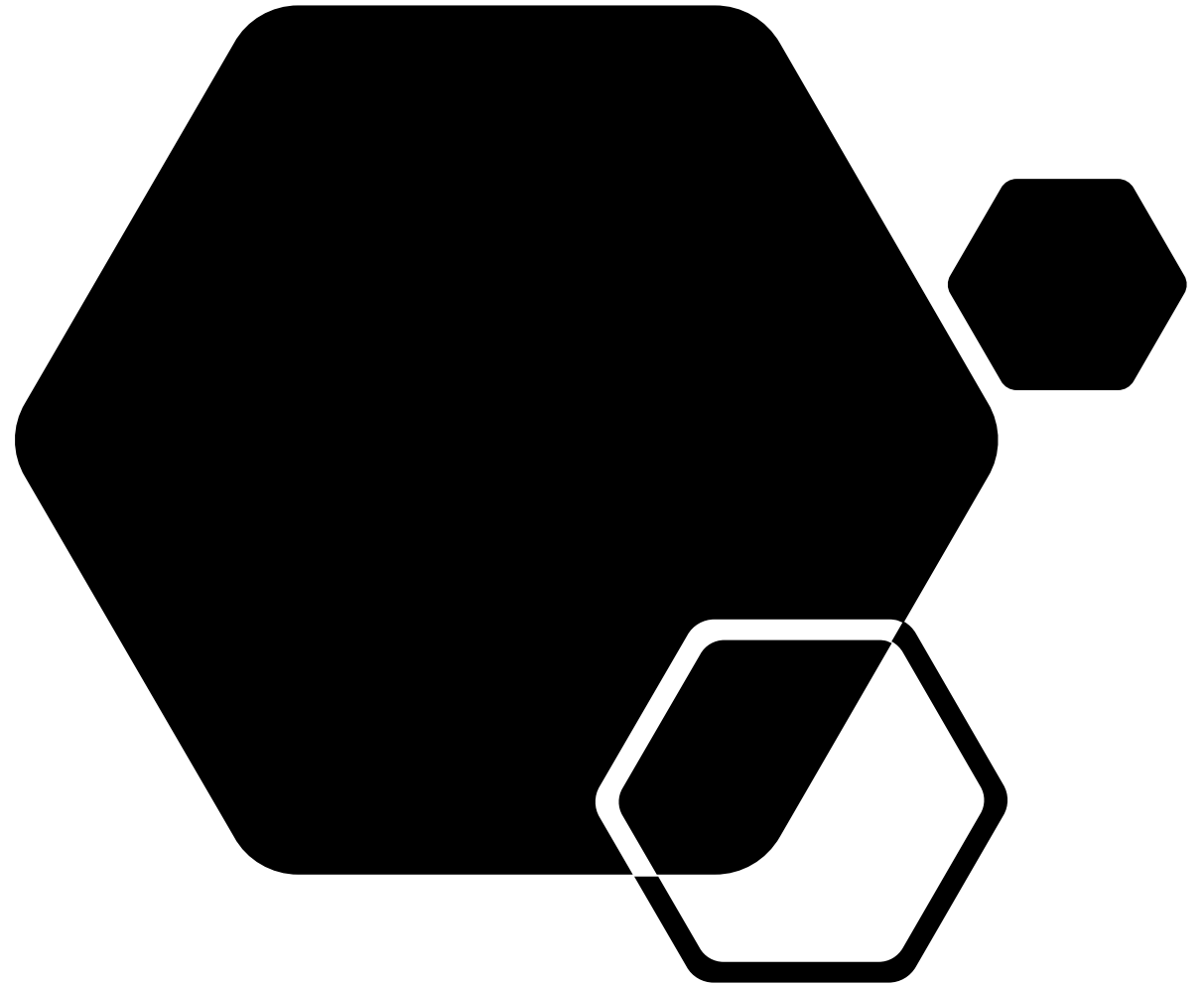
# Artificial Intelligence versus Intelligence Amplification

"If you have come here to tell us that you can solve all our problems with AI then this meeting is over. Nobody believes this anymore."
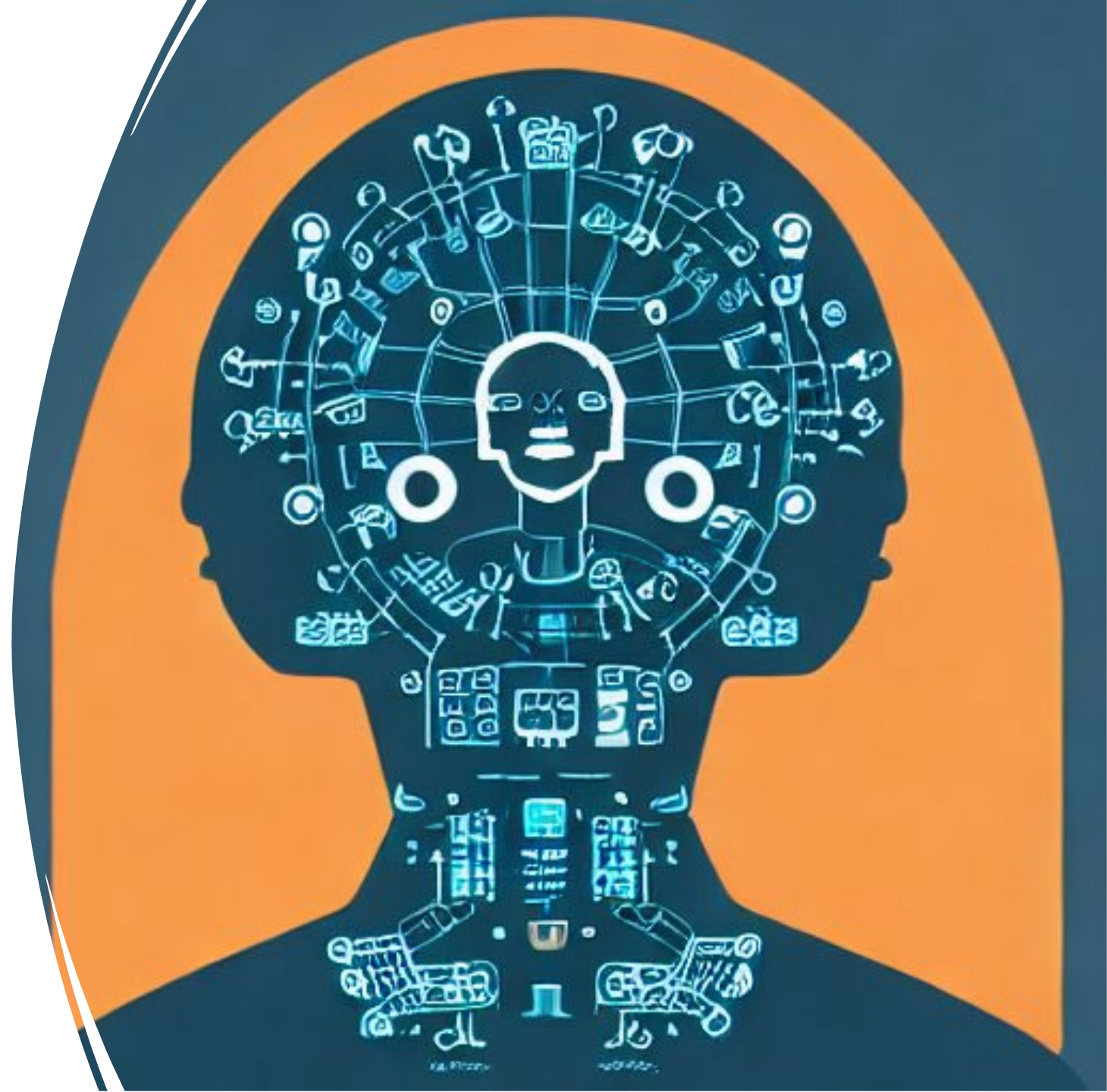
Executive Director Citibank NY – November 2017

# AI

Artificial Intelligence

- Autonomous Driving
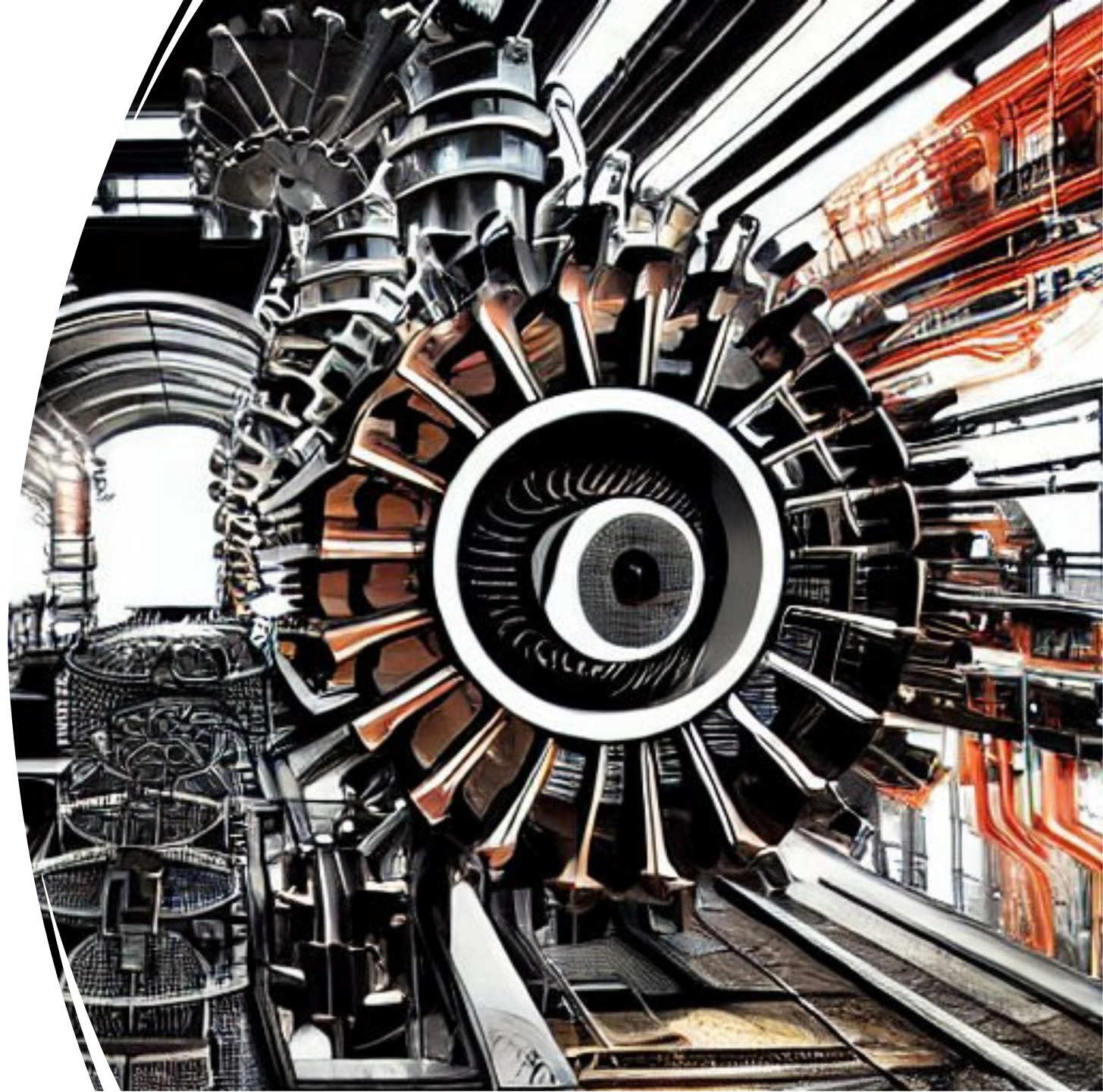
- Artificial Doctor

- Artificial Lawyer

Idea that ML / AI replaces a human being.

# IA

Intelligence Amplification

Targeted application of specialized Machine Learning Models with proven (established) functionality.

# State of the Art – Constraints

Succesful applications happen based on established ML capabilties.

Succesful solutions are always domain and use case specific.

Succesful development of ML-powered solutions requires in-depth analysis and focused application of ML-capabilities into the business workflow and processes.

# Potential of Iteratively Adding Smart ML Integrations


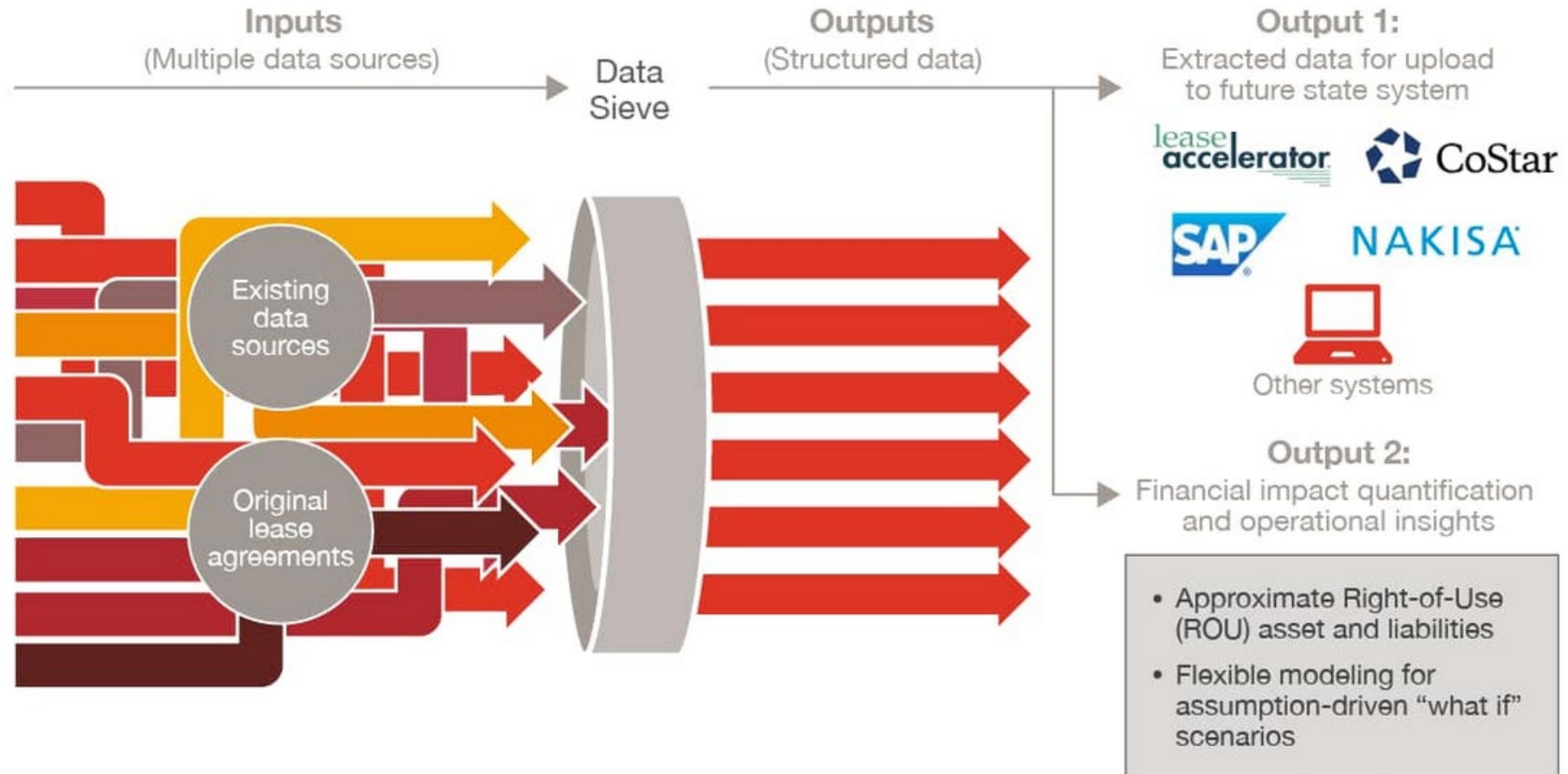
**Bloomberg**

Markets

## JPMorgan Software Does in Seconds What Took Lawyers 360,000 Hours

By Hugh Son
*Updated on*

▶ New software does in seconds what took staff 360,000 hours
▶ Bank seeking to streamline systems, avoid redundancies

# Support Subject Matter Experts via Suggestions



Contract Intelligence as a Service - courtesy of PwC U.S

# Artificial Intelligence versus Intelligence Amplification

Applications that support subject matter experts (SMEs) in their tasks.

# Artificial Intelligence versus Intelligence Amplification

Applications that support receiving SME corrections and feedback.

# legal-i.ch

Legal discovery in the medical domain in Switzerland.
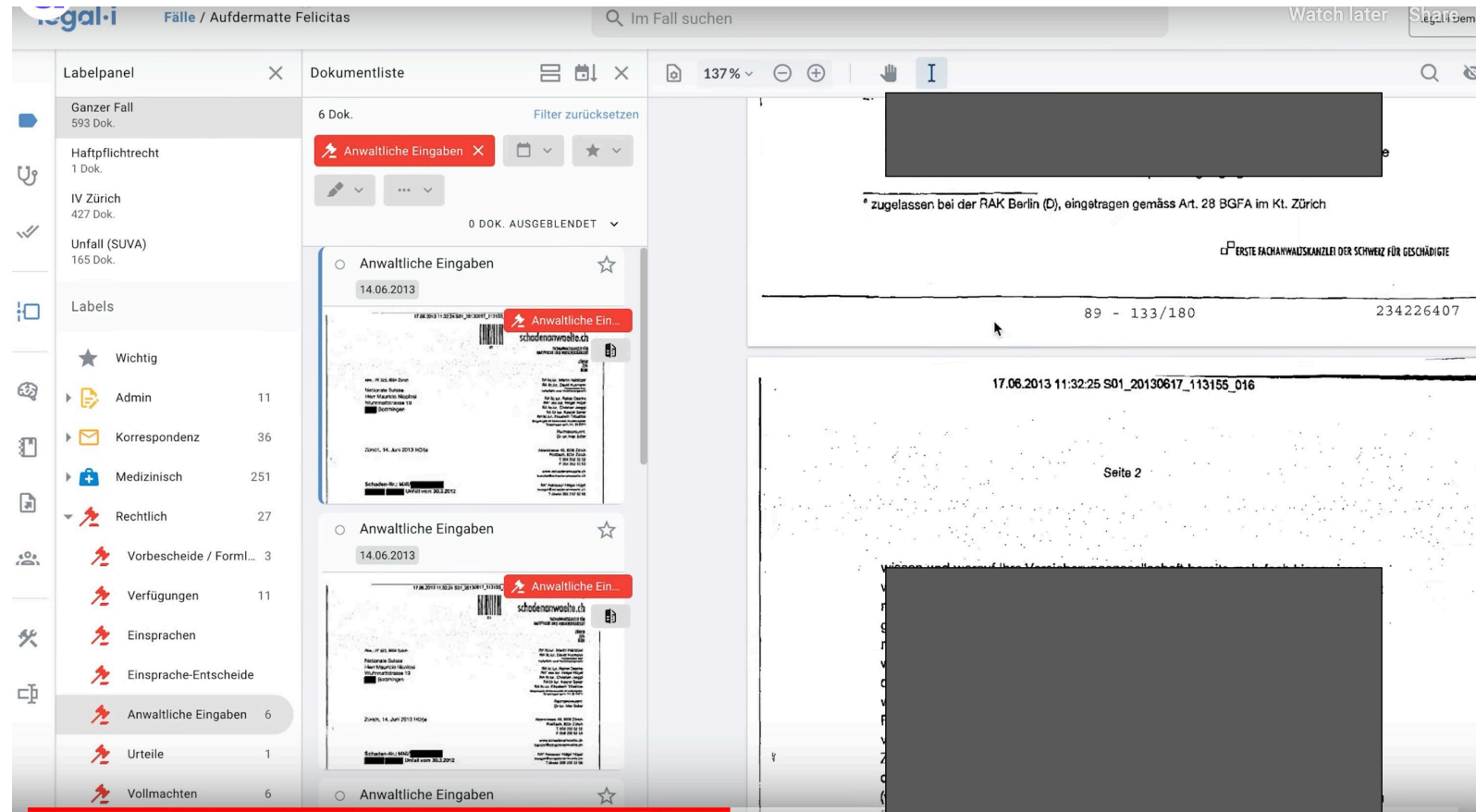
# CorteXia

- Computer vision for waste management
- Detection limited to a few classes
- Automated classification enables analysis and mapping

## Reconnaissance des déchets par IA



Caméra
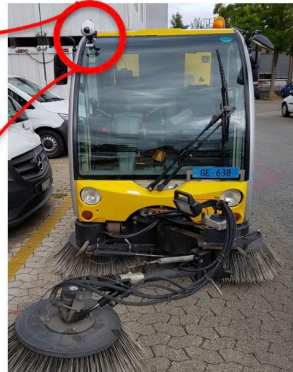
Calcul embarqué

## L'index de propreté



Camera          AI box

Clean City Index
0: dirty to 5: clean

2.4 / 5
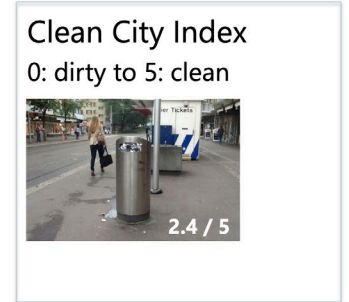
# interiorai.com
by levels.io

# Implementation Approach

Identify use cases where tremendous business value is unlocked by applying machine learning (or a smart rule-based heuristic approach!).

Identification of leverage points for machine learning.

Identify aspects of workflow where:

- strength of machine learning applicable (task difficulty, training material availability)

- error-rate of machine learning can be integrated or mitigated in workflow

- efficient integration scenario possible for SME
    - gains outweigh the workflow adaptation

# How we work with Start-Ups

- Pro-Bono Consulting

- Innovation Studies
  - Duration: 1-6 Months
  - Innocheque CHF 15K
  - Direct Funding

- Innovation Projects
  - Duration 6 Months – 3 years
  - Innosuisse
  - Horizon
  - Direct Funded

This targets the identification of ML leverage points or  the dismissal of the ML idea.
Also good to check if working together works out.

This is focused on supporting the implementation (variation, pivot) of the ML appliation scenario.

# Ideas & modes to work together

Please approach us if you have questions or even better suggestions for working together.

We have some wide-ranging ideas of working together with start-ups, but we believe this is only the beginning.

# BSc Data Engineering

## Bachelor of Science /
## Data Engineering

On this degree programme, you combine software engineering, machine learning and analytics and become a sought-after expert in software and data engineering.

You can complete the practice-driven degree programme either full- or part-time with a choice of German/English or French/English, which prepares you optimally for the fastest-growing job profiles on the digitalised labour market.

Begin your studies in autumn 2023.



The head of the programme Prof. Dr. Erik Graf presents the BSc in Data Engineering

# Next
# seminars

## Biel/Bienne
Quellgasse 21, Aula

**11.11.22 The GNU Taler Payment System**
Prof. Dr. Christian Grothoff, Professor &
CEO, Institute for Cybersecurity and Engi-
neering ICE, BFH-TI & Taler Systems SA

**25.11.22 Experimental heart rate varia-
bility characterization** Lars Brockmann,
Assistant, Institute for Human Centered
Engineering HuCE, BFH-TI

**09.12.22 Parylene-based encapsulation
technology for wearable or implantable
electronic devices** Dr. Andreas Hogg, CEO,
Coat-X AG, La Chaux-de-Fonds

**13.01.23 Care@Home mit technischer
Unterstützung** Prof. Dr. Sang-II Kim, Profes-
sor, Institute for Medical Informatics I4MI,
BFH-TI

## Burgdorf/Berthoud
Pestalozzistrasse 20, E 013

**18.11.22 Flexible programming of Indus-
trial Robots for Agile Production envi-
ronments** Laurent Cavazzana, Research
scientist, Institute for Intelligent Industri-
al Systems I3S, BFH-TI

**02.12.22 Wie gefährlich ist ein Unfall
mit einem Cabriolet?** Prof. Raphael Murri,
Institutsleiter IEM, Institut für Energie- und
Mobilitätsforschung IEM, BFH-TI

**16.12.22 Systemtechnologie für die Mikro-
bearbeitung mit Hochleistungs-UKP-
Lasern** Prof. Dr. Beat Neuenschwander,
Institutsleiter ALPS, Institute for Applied
Laser, Photonics and Surface Technologies
ALPS, BFH-TI