



researchXchange

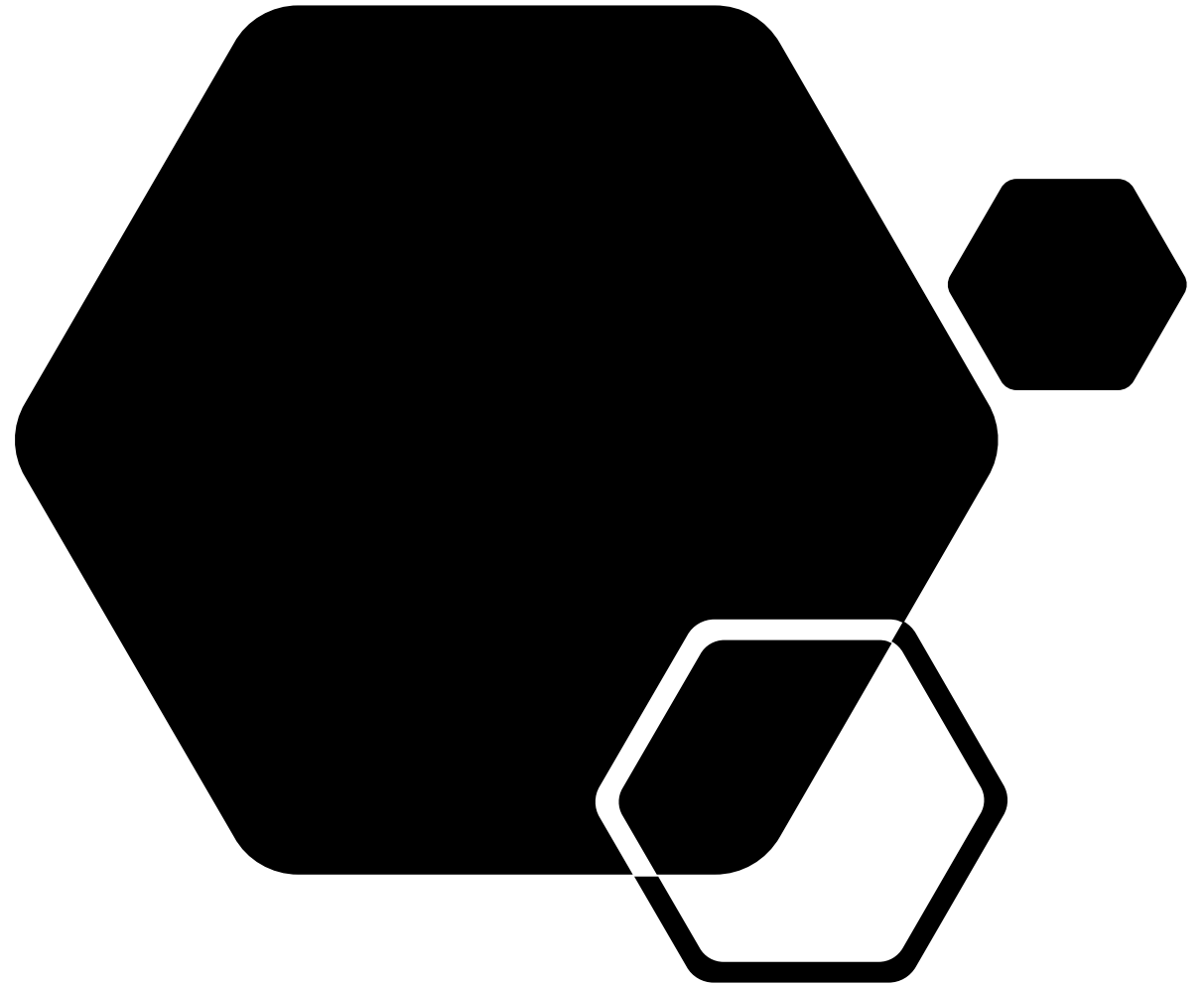
Welcome!

Machine Intelligence and Start-Ups


Prof. Dr. Erik Graf

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."

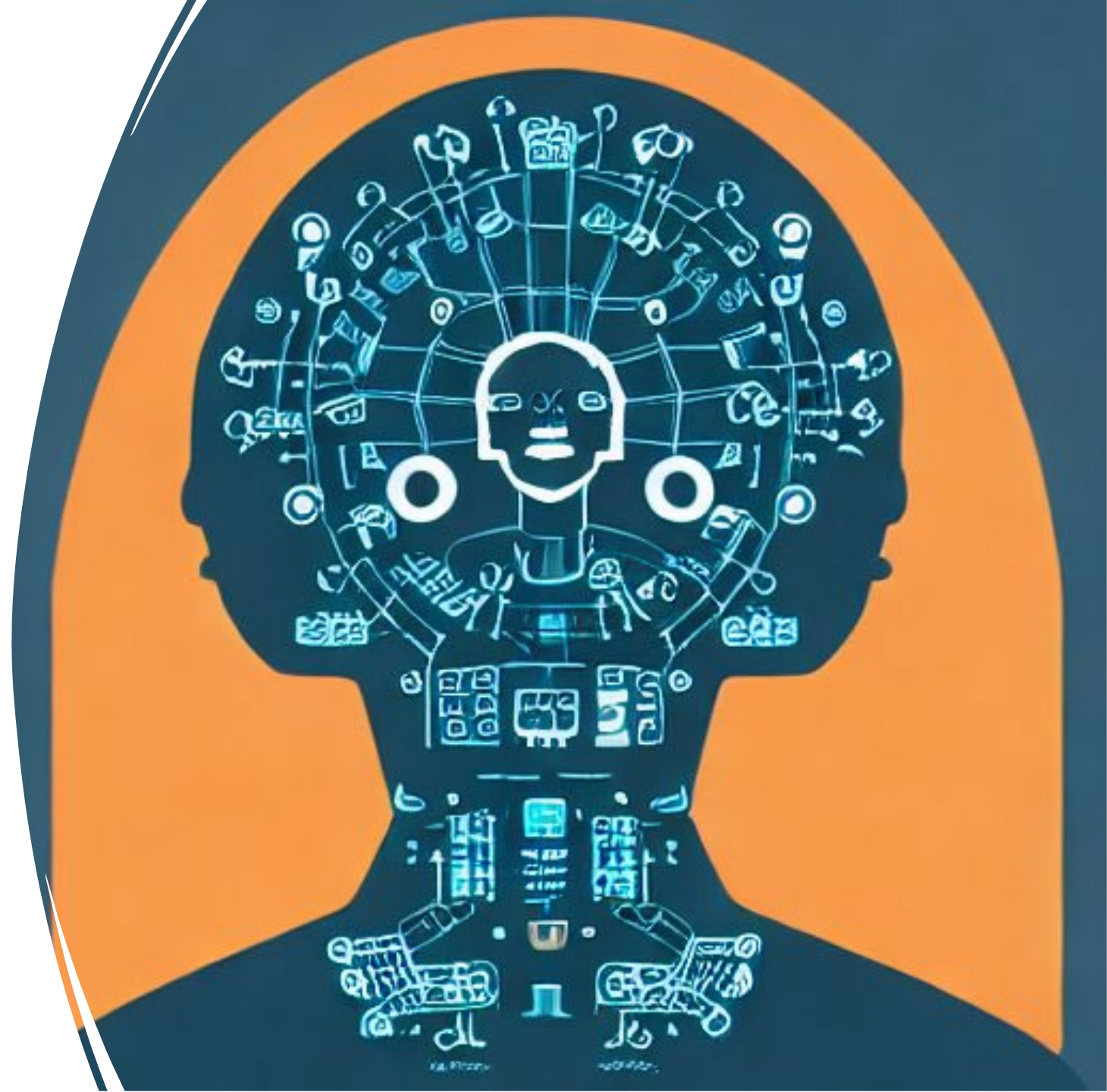
Executive Director Citibank NY – November 2017

AI

Artificial Intelligence

- Autonomous Driving
- Artificial Doctor
- Artificial Lawyer

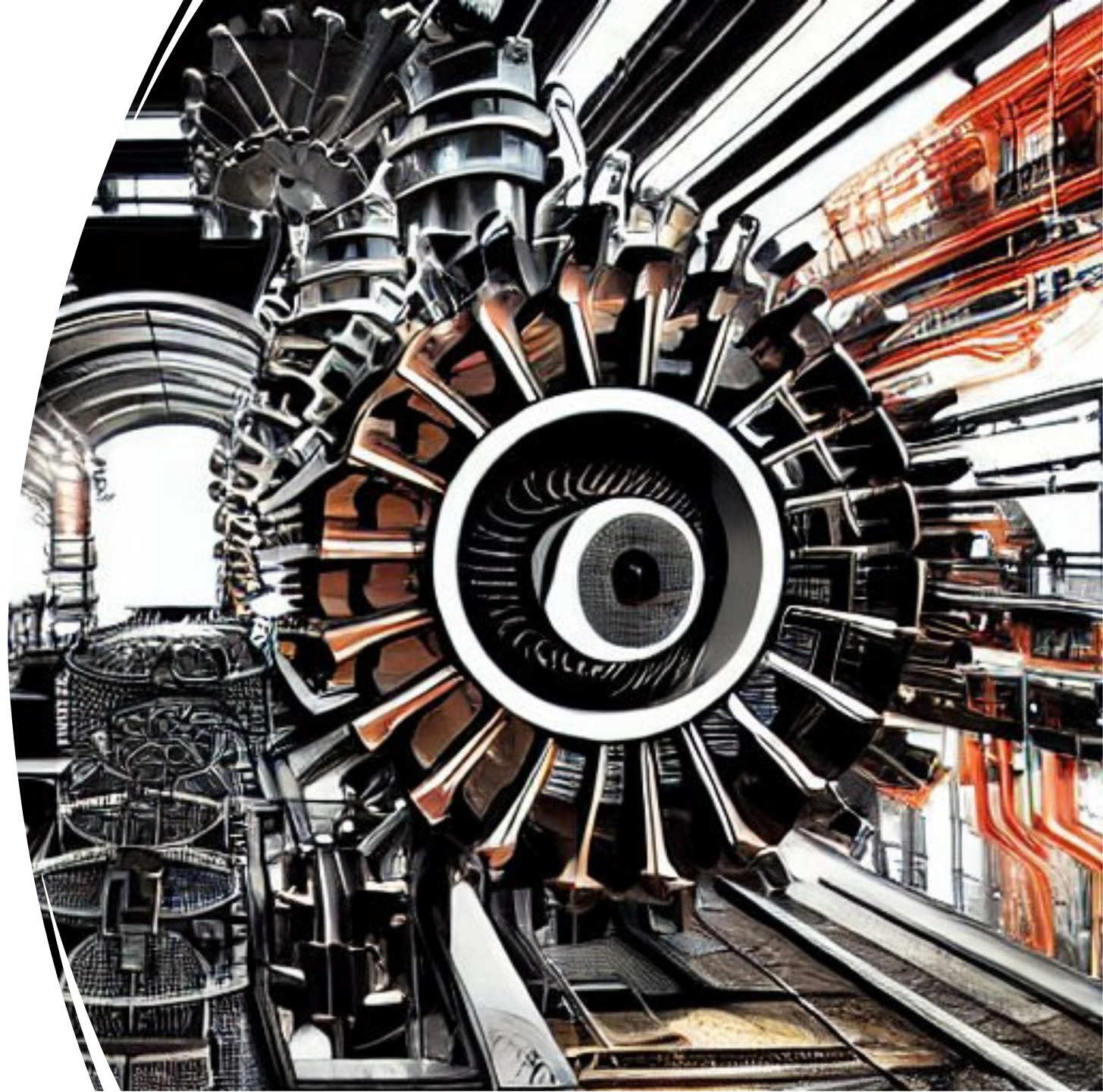
Idea that ML / AI replaces a human being.



IA

Intelligence Amplification

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



State of the Art – Constraints

Successful applications happen based on established ML capabilities.

Successful solutions are always domain and use case specific.

Successful 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

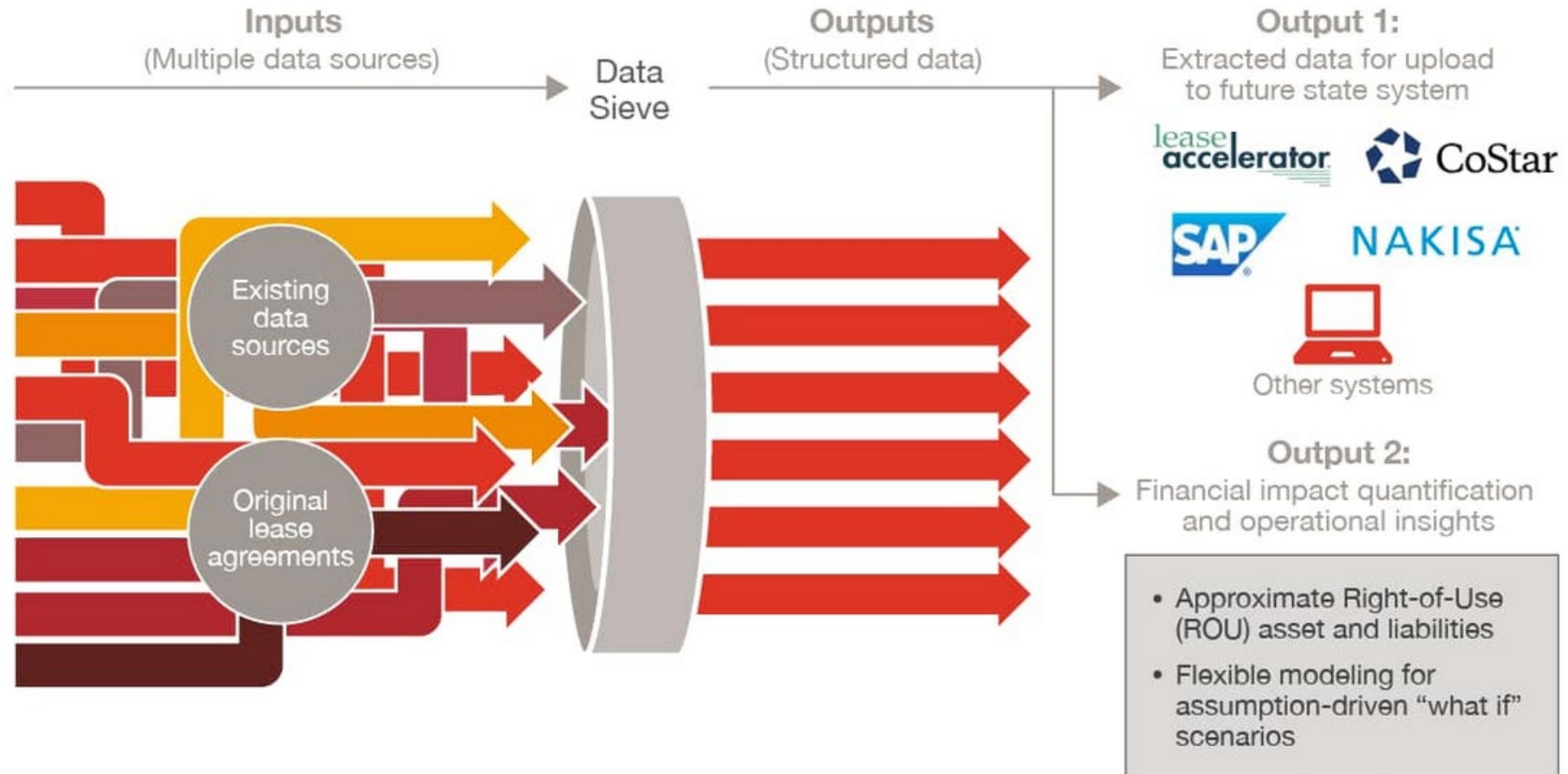
JPMorgan Software Does in Seconds What Took Lawyers 360,000 Hours

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.

The screenshot displays the DataSieve application interface, which is used for document review and management. The interface includes a top navigation bar with the PwC DataSieve logo, a dropdown menu for "Schrute Beets Company", and tabs for "Tasks", "Documents", "Cases", "Upload", "Tools", and "Reports". A "Case Review" button is located in the top right corner.

The main workspace is divided into three sections:

- Documents List:** On the left, a list of documents is shown, including "SPAB_PrimaryLea..." and "SPAB - Renewal Op...".
- Document Viewer:** The central pane displays a document titled "SPAB_PrimaryLease_120308.pdf". The document is marked as "REVIEWED" and shows the "AGREEMENT OF LEASE" section. The viewer includes a "Jump To Clause..." search bar, a "1 of 58" page indicator, and "Automatic Zoom" controls.
- Document Details:** On the right, a sidebar provides details for the selected document, including "Document Type: Lease Base Model", "Sort By: Order Name Category", and a list of sections: "General Contact Information", "General Contract Information", "Leased Asset Description", "Lease Term", "Lease Payments", "CapEx Obligations", "Co-Tenancy", "RVG", and "Options".

At the bottom of the interface, a row of action buttons is visible: "Reject", "Hold", "Term", "Item", "Return", "Save", and "Submit".

Artificial Intelligence versus Intelligence Amplification

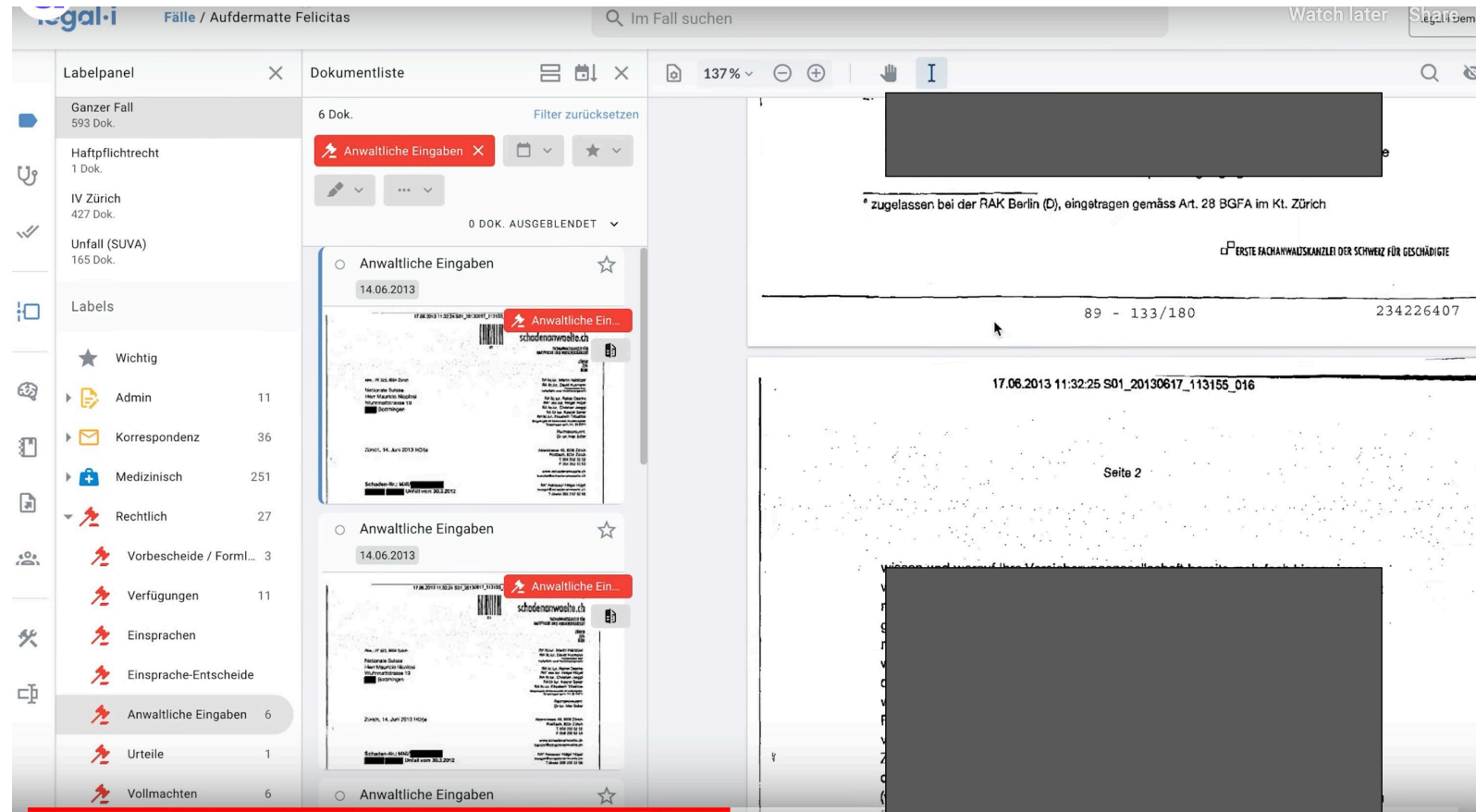
Applications that support receiving SME corrections and feedback.

The screenshot displays the DataSieve application interface, which is used for document review and management. The interface is divided into several sections:

- Header:** Includes the DataSieve logo, the user's name (Schrute Beets Company), and navigation tabs for Tasks, Documents, Cases, Upload, Tools, and Reports.
- Case Information:** The current case is "Case-RE-SPAB-South Carolina". A "Case Review" button is visible.
- Document List:** On the left, a list of documents is shown, including "SPAB_PrimaryLea..." and "SPAB - Renewal Opt...".
- Document Viewer:** The main area displays a document titled "SPAB_PrimaryLease_120308.pdf". The document is marked as "REVIEWED". The viewer shows the document content, including sections like "AGREEMENT OF LEASE" and "ARTICLE 1 PREMISES". The document is currently on page 1 of 58.
- Document Details:** On the right, a sidebar provides details about the document, including its type ("Lease Base Model"), sort order, and a list of sections. The sections listed are "General Contact Information", "General Contract Information", "Leased Asset Description", and "Lease Term".
- Form Fields:** Below the sections, there are form fields for "Lease Execution Date" (December 3, 2008), "Lease Commencement Date" (June 1, 2009), "Base Term Expiration Date" (seven (7) years from the Commencement Date), and "Base Lease Term" (70).
- Actions:** At the bottom, there are buttons for "Reject", "Hold", "Term", "Item", "Return", "Save", and "Submit".

legal-i.ch

Legal discovery in the medical domain in Switzerland.



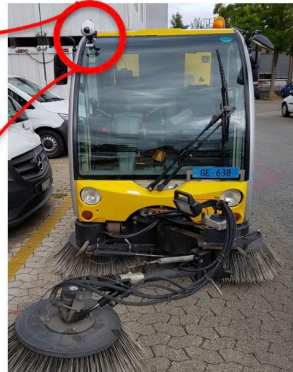
CorteXia

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

Reconnaissance des déchets par IA



Caméra



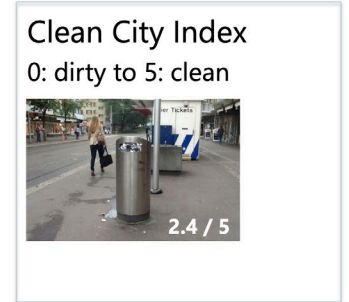
Calcul
embarqué

L'index de propreté



Camera

AI box



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



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

- Innovation Projects

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



This is focused on supporting the implementation (variation, pivot) of the ML application 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

▼ Introduction

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 Engineering ICE, BFH-TI & Taler Systems SA

25.11.22 Experimental heart rate variability 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, Professor, Institute for Medical Informatics I4MI, BFH-TI

Burgdorf/Berthoud

Pestalozzistrasse 20, E 013

18.11.22 Flexible programming of Industrial Robots for Agile Production environments

Laurent Cavazzana, Research scientist, Institute for Intelligent Industrial 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 Mikrobearbeitung mit Hochleistungs-UKP-Lasern

Prof. Dr. Beat Neuenschwander, Institutsleiter ALPS, Institute for Applied Laser, Photonics and Surface Technologies ALPS, BFH-TI