SEAL SOFTWARE
Intelligent Contract Analytics across Languages and Domains

Svetoslav Marinov

Overview

- Who are we
- What we do - 2 Use Cases
- How we do it
- Enhance core functionality
- Open problems
- Questions

Who we are

- Founded in 2010
- R&D in Gothenburg, Sweden
- Headquarters in San Francisco
- Offices in London, München, New York
- > 100 employees
- Product: Contract Discovery and Analytics
- http://www.seal-software.com

What we do

- **Where are my contracts and what's in them?**
- Automate contract review process
- Adaptable to regulatory changes
- Customizable
- Actionable information
- Scalable
- Data is presented in an integrated and flexible visualization tools
- Flexible platform that evolves as the customers' needs and regulations change
- Across multiple industries – Healthcare, Financial Services, Legal Services, High Tech…
- Across multiple language

Use case

The problem:

- A large healthcare provider in the USA aims to have a multi-billion dollar acquisition
- The company they want to acquire has over 1 million contracts
- During Integration of the 2 companies:
  - Novate
  - Identify risky provisions
    - Change of control
    - Assignment
    - Limitation of liabilities
    - Etc
- Go through a vendor consolidation exercise to achieve over $1 billion dollars in savings

The solution:

- Use Seal to discovery all of the contracts of the newly acquired company
- Use the out of the box extractions and Policy creation to extract all of the risky provisions
  - Prioritize the contracts with risky provisions for renegotiation or potential termination
  - See if any of the strategic contracts automatically terminated due to change of control
  - See which contracts have the right to assign, no right to assign or conditional assignment
- Use Seal to recognize overlap in vendors and where one vendor has given better position

Use case

The problem

- One of the world's largest cell phone provider's leases the land under each of its cell towers
- At any given time, the provider maintains 10s-100s of thousands of active leases
- Managing these is a detail oriented and time consuming activity (agreements vary significantly from each other)
- Unmanaged agreements = commercial and legal risks (lease term, renewal, indemnity and termination)

The solution

- Seal can discover the lease agreements across the various repositories
- Seal pulls many key lease provisions right out of the box
- Seal analytics to find additional provisions, unique to the customer and their needs
- Contracts in a single place (for future reference)

The result

- Analysis of over 600,000 lease related agreements in approximately 3 months
- Identify agreements that required further attention
- Cost savings

Contracts – some nitty-gritty details

- They come in all shapes and forms (pdf, word, text, scanned, hand-written, on pen-drives, in emails, etc.)
- They come in written in a single language or a in mixture of languages
- They come as single document or many documents in one, or just parts of a document
- Structure and formatting is lost (scans and images)
- Tons of OCR noise introduced
- Extremely varied length and size
- Extremely varied context
- Language obfuscation

How we do it

OOB
Rules & ML

Lang?

EN

FR

DE

Storage

UI

User

Custom
Rules & ML

New rules and
Legislation
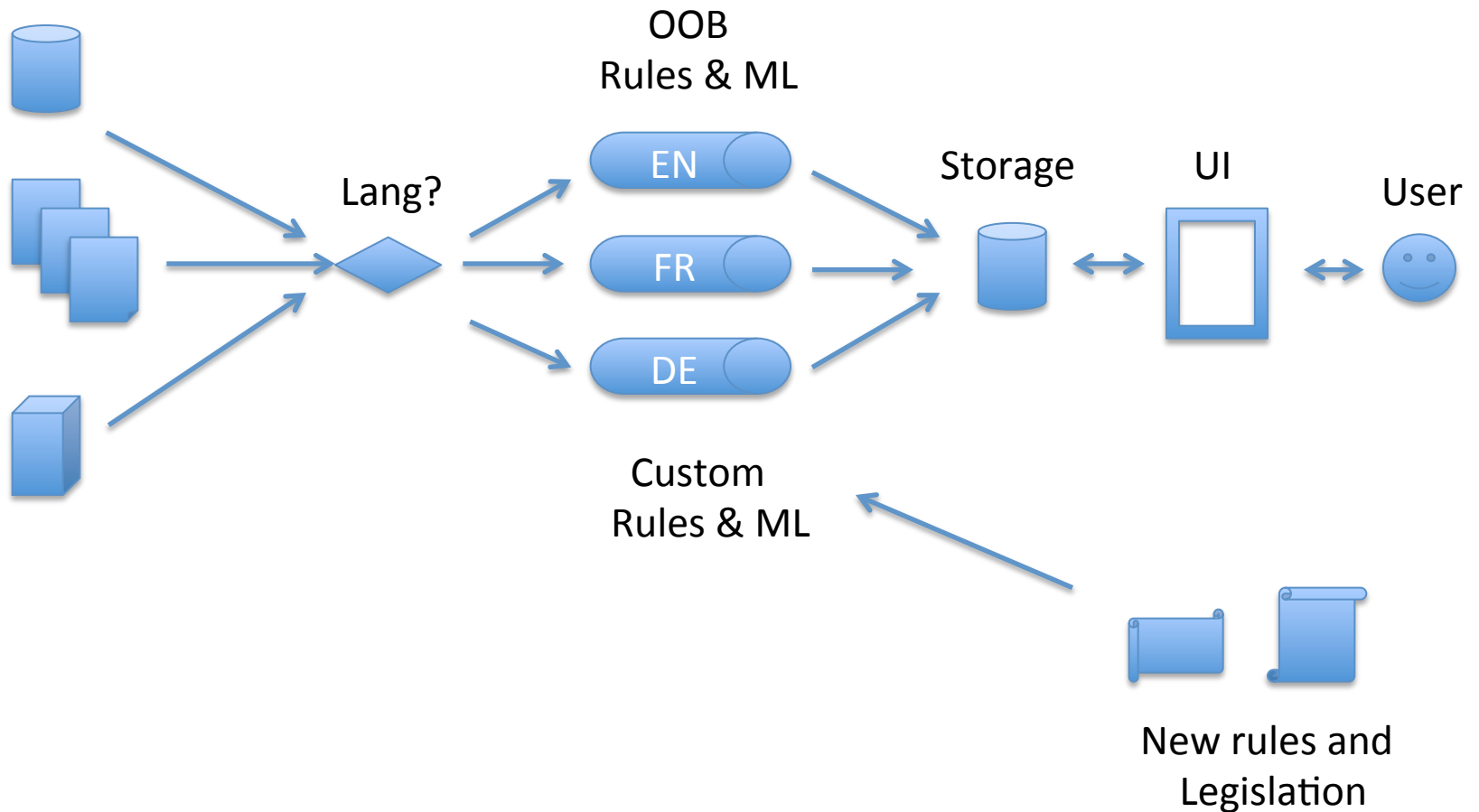
Search

791 contracts in
Review

1052 contracts
Processed

0 contracts
Expires this month

Search within All ▾ words.

Filters

Assigned To | Priority Level | Processed Within
None ▾ | Level ▾ | Any time ▾

Contract Status

☐ Exclude locked ☐ Near duplicates ☐ Uploaded by me

Filter By Category

[+] ☐ ContractType
[+] ☐ ExclusiveJurisdiction
[+] ☐ FileType
[+] ☐ GoverningLaw
[+] ☐ Jurisdiction
[+] ☐ Language
[+] ☐ LinkedContractType
[−] ☐ M&A
    ☐ AntiBribery (42)
    ☐ ArbitrationBinding (136)
    ☐ ArbitrationPlace (112)
    ☐ ArbitrationRules (100)
    ☐ AutoRenewal (126)
    ☐ ChangeOfControl (275)
    ☐ ConditionalNonSolicitation (31)
    ☐ Deed (15)
    ☐ DutyToReturn (238)
    ☐ EC (188)

🔍 "Intellectual property"   **+** ▾ ✖

ContractingPar... ▾	Google	✖
Jurisdiction ▾	new york	✖
TerminationDate ▾	2017-01-31	✖

Match **All** Any of given search conditions.

Search within All ▾ words.

Enhanced Core Functionality

- Custom-specific policies
- Custom-specific rules
- User-Driven Machine Learning (UDML)

Custom Specific Policy

- 1 example (sentence or paragraph) is enough

- Rely on LSI

- Discover all similar clauses throughout the pool of contracts

- Enabled in the system and available to users

- **Non-Compete:** *"In consideration of the benefits provided for in this Agreement...give advice or consultation to any Competitive Business."*

UDML

UDML

New Domains and Languages

- Seal provides the necessary tools
- M&A may results in addition of contracts from new domains and/or languages
- Custom policies and UDML enhance OOB core analyzers (to cover new domains, types, regulations and languages)
- Requirements – language specific component (Sentences and Tokens) and domain expert
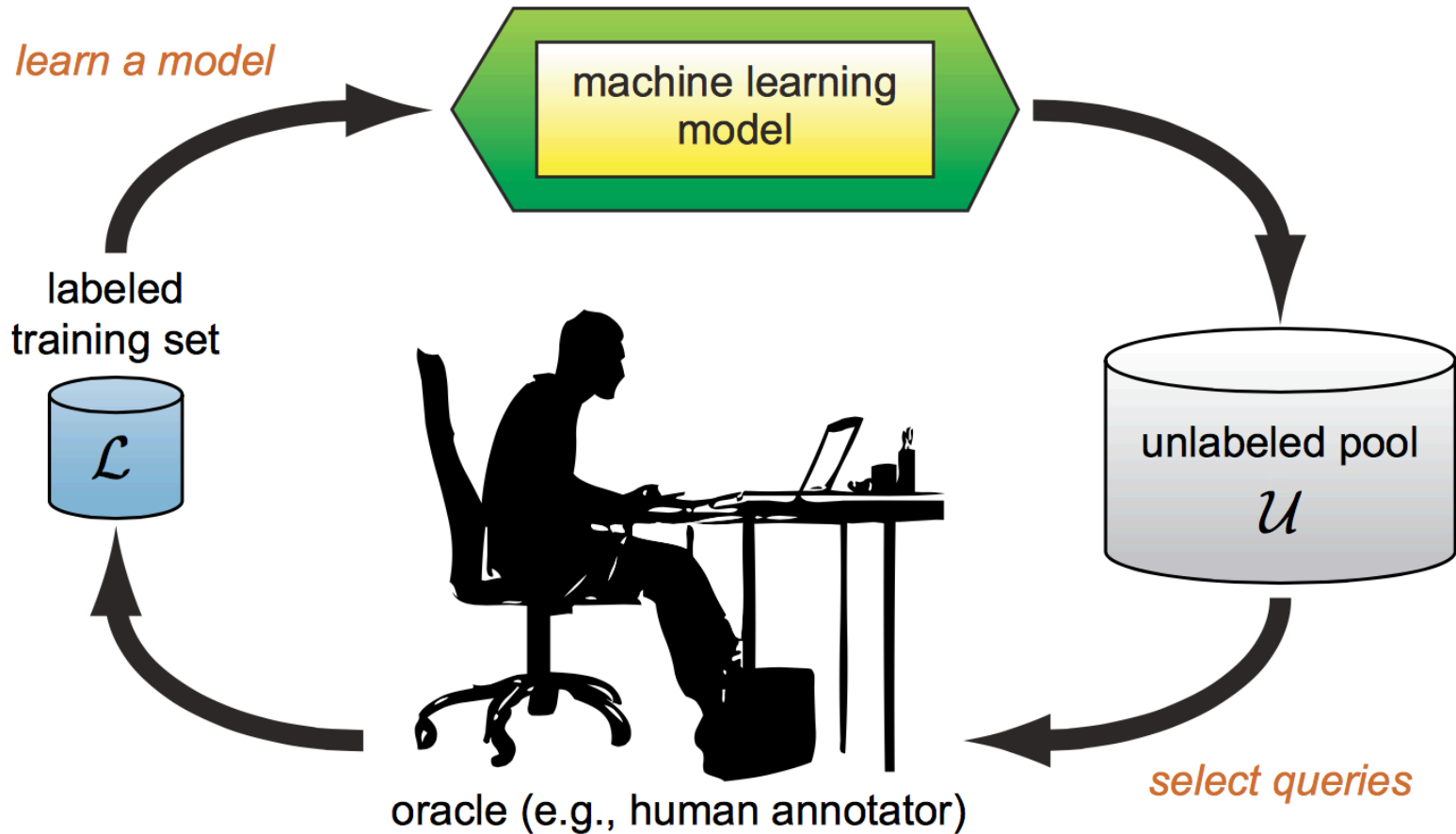
Domain experts

David Lee Windecher

Domain knowledge
Where data is
How it should be analyzed
One lever – annotate data

"I'm not married to the annotations I make …"

Enhancing the system - AL

Source: Burr Settles http://burrsettles.com/pub/settles.activelearning.pdf

Open Problems

- Relations (long-distance, across contracts)
- Learning from low amounts of data
- Learning from highly imbalanced data
- How can we reduce noise in training data?
- What is the best evaluation metric for non-data-scientists?

Questions

Thank you!