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AI in the Wild
ECIR 2018 Industry Day

“From Research to Production”

Company Overview

Founded: 2011

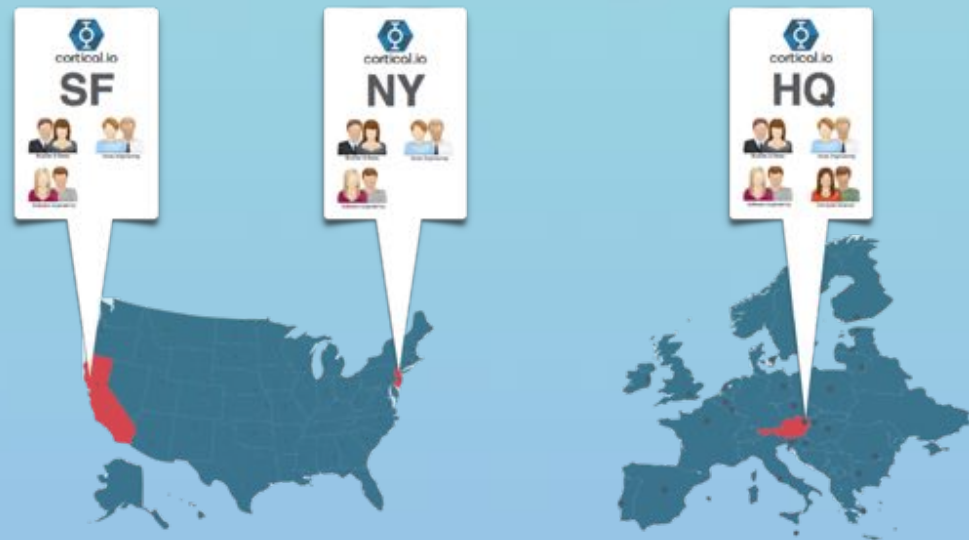
Focus: AI powered enterprise solutions

Customers: Fortune 500 companies in multiple domains (Banking, Service Providers, Technology Companies, Car Manufacturers)

Locations:

- Vienna, Austria (HQ)
- New York
- San Francisco

Employees: 25+



Shared Challenges - Different Focus

Academia

Focus: Controlled Experimentation

- > Formally defined tasks
- > Static test scenarios
 - >> Test collections
 - >> Fixed time frame
- > Attention on one specific aspects
 - >> Effectiveness
 - >> Efficiency
 - >> Scalability

Enterprise

Focus: Business Value

- > Not formally defined business workflows
 - >> Workflows are dynamic
 - >> Longitudinal aspect
- > Solution is not defined
- > Many crucial aspects to consider
 - >> Maintainability
 - >> Adaption / Configuration
 - >> Scalability
 - >> Model Governance
 - >> Integration into operational systems
 - >> User Training

AI - IA

Solutions are not well defined – new ground – scorched earth

Artificial Intelligence

Intelligence Amplification

Starting points are business problems / opportunities

Cope with the amount of information

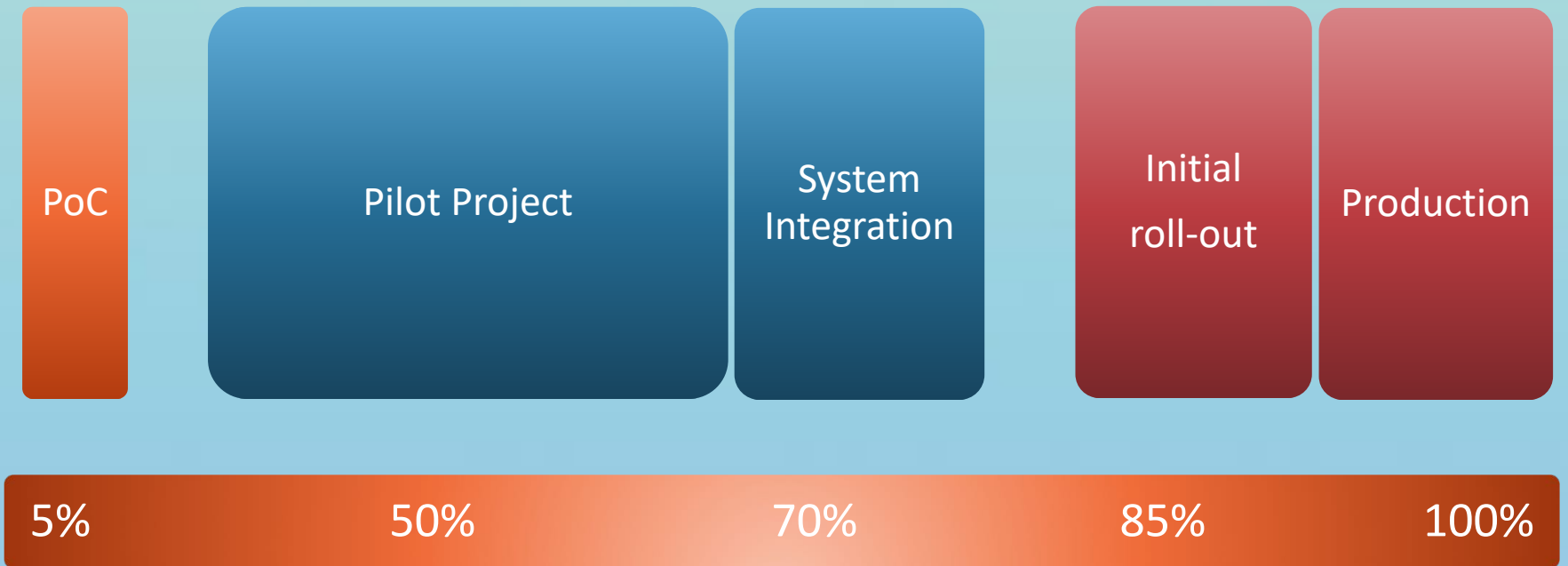
Scale use of information

Challenges stem from ML, organizational, regulatory, project related, ...

**Contract Intelligence
Solutions**

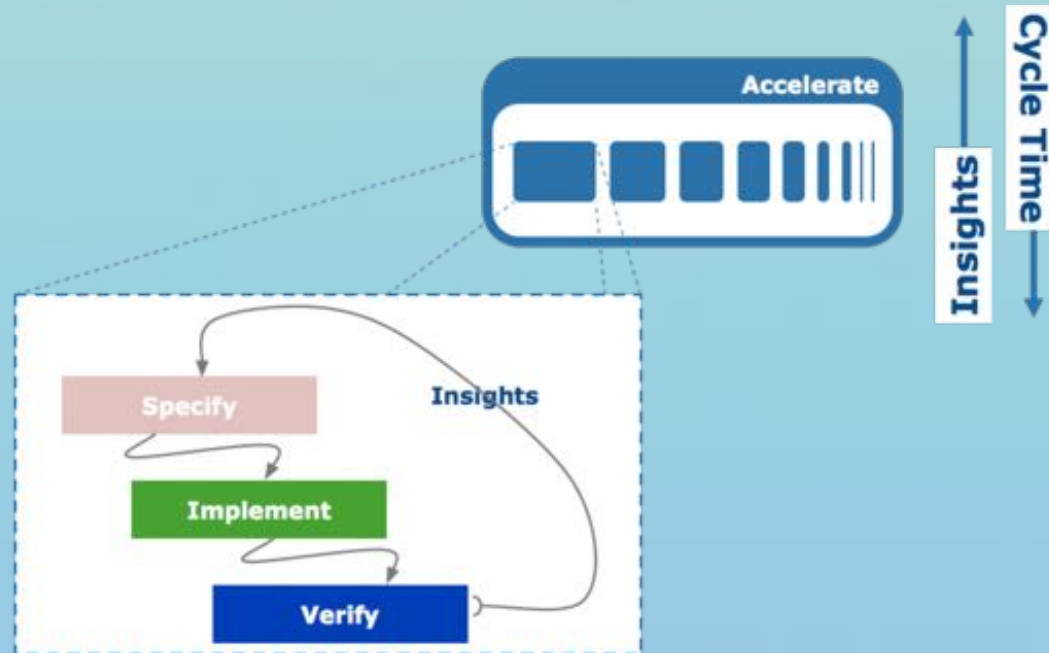
**Support Intelligence
Solutions**

Iterative Development



Insight Cycles

Impact of waterfall model on machine intelligence projects.



Acceleration of insight cycle crucial to project success.

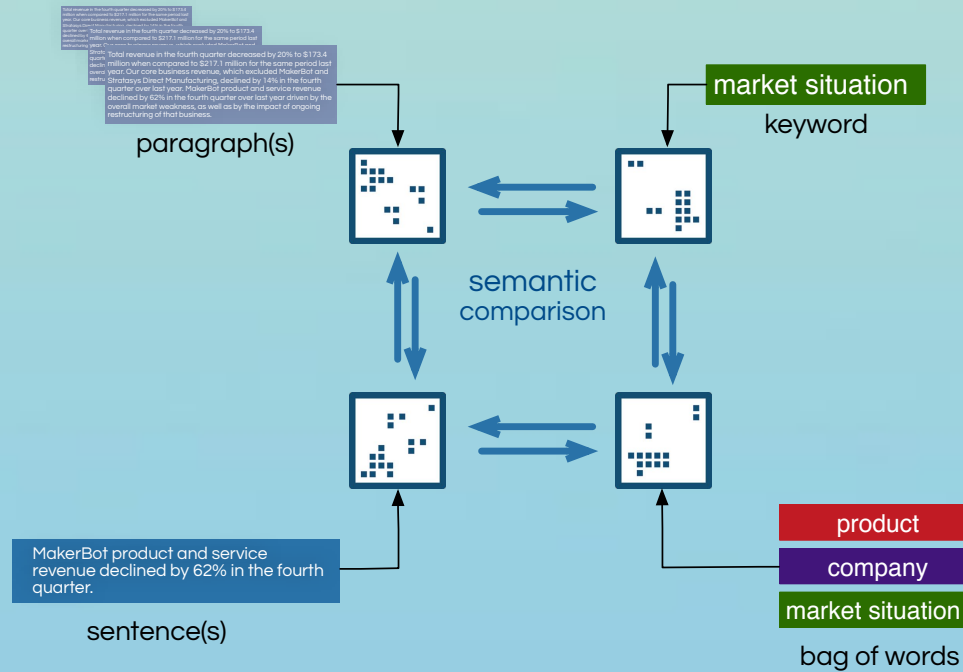
Interpretability

- Simplicity & comprehensibility of the workings of the system.
- Interpretability at the Subject Matter Expert (SME) level.
- Detect bias and optimise training material (variable sparsity, topology of NN, traceable samples)



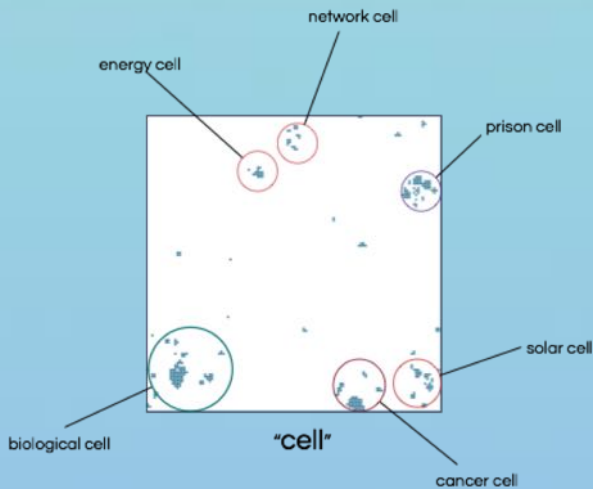
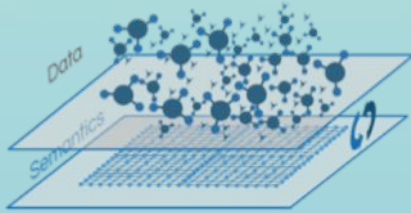
Contrast: academic task of outlier identification
Peter Norvig: Debuggability

Dynamic Composition of Meaning

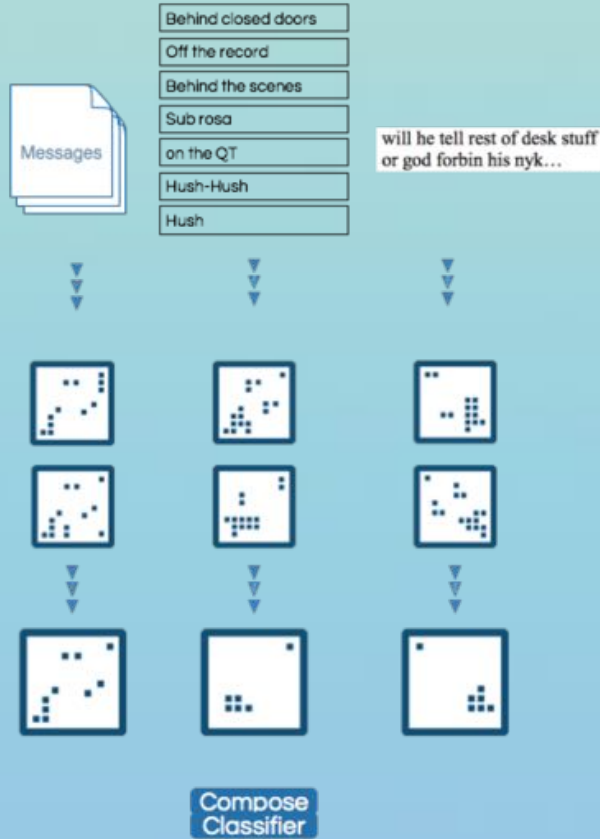


- Direct semantic comparison between keywords, sentences, paragraphs, bag of words based on pre-trained fingerprints
- Dynamic composition enables fast experimentation and adaptation of solutions
- Task Adaptability

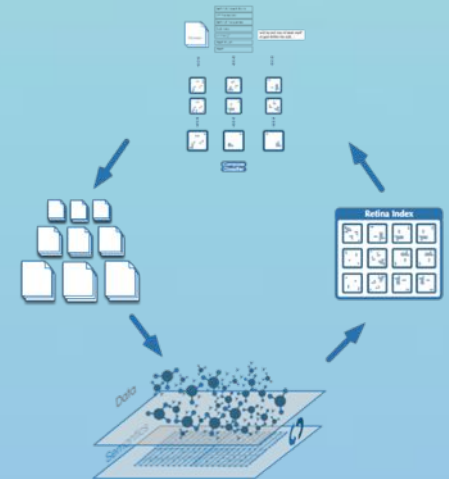
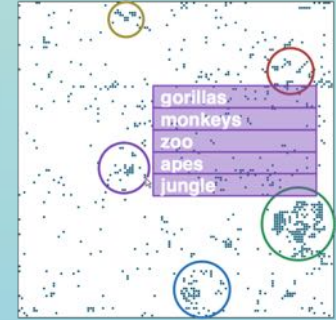
Insight Cycles



Task Agnostic Representations



Dynamic Composition & Manipulation of Meaning



Interpretability

Insight Cycles

Cycle Time Reduction

- Unsupervised learning
- Semi-supervised learning
- Existing resource integration

Interactive ML / AI

- Interpretability
- Task Adaptability
- IR versus Classification

SME shaped Solutions

- Data scientists are a bottleneck
- SME interaction is not optional

-> Edwin Hutchins *“Cognition in the Wild”*



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Video youtube.com/watch?v=HLuRQKzYbb8

Free tools cortical.io/free_tools

A special thank you to the industry day organisers:

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