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AI in the Wild
ECIR 2018 Industry Day

"From Research to Production"

Company Overview

Founded: 2011

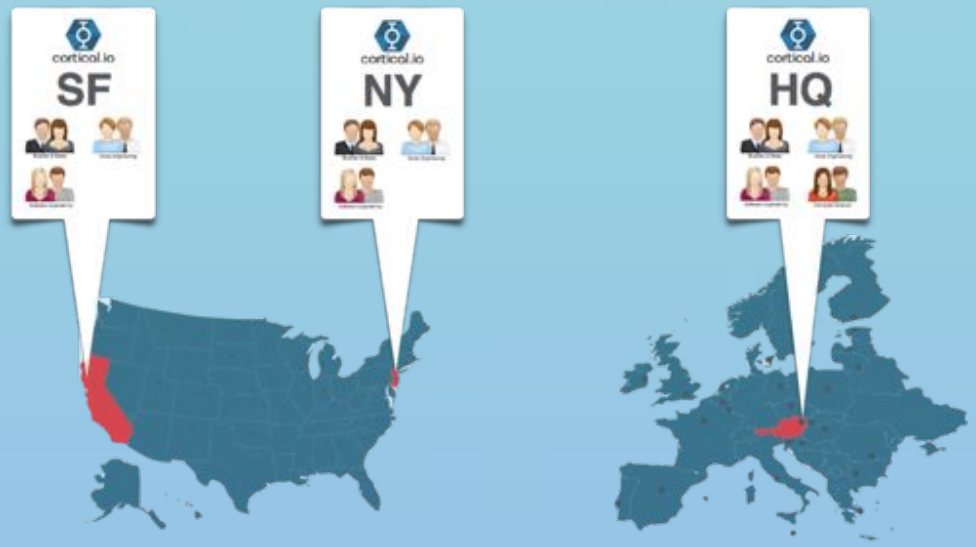
Focus: AI powered enterprise solutions

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

Locations:

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

Employees: 25+



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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

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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

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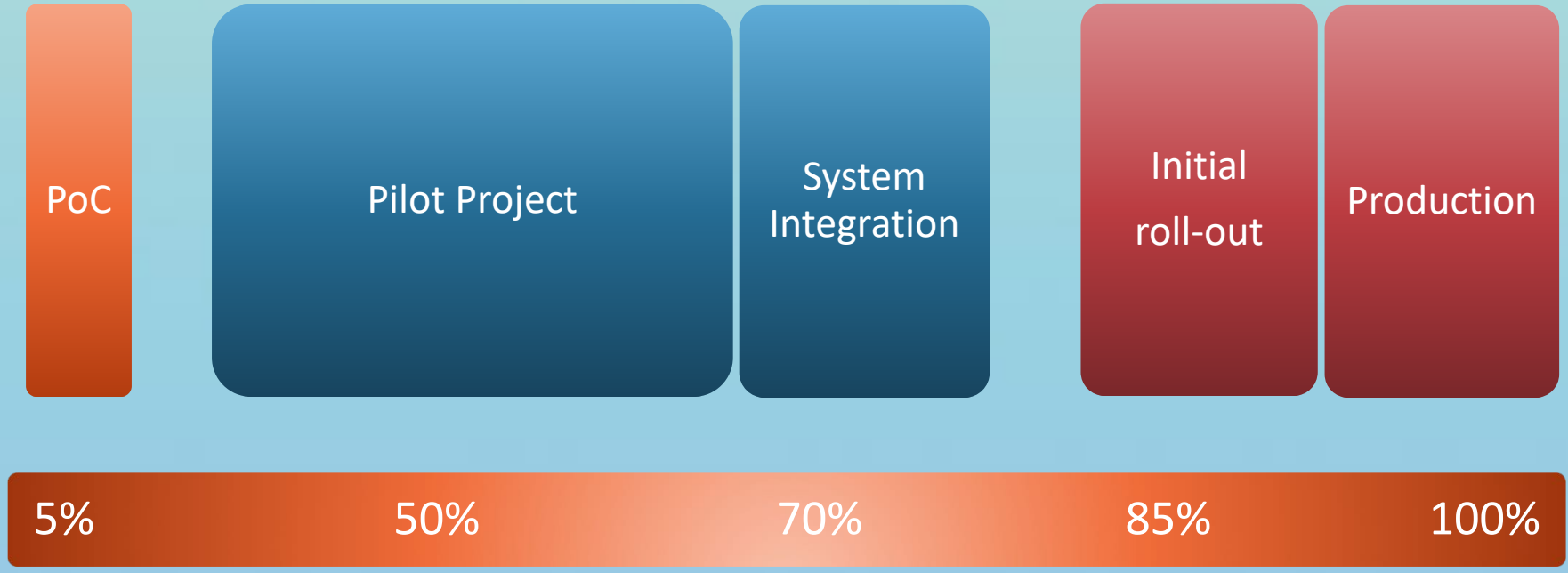
Iterative Development



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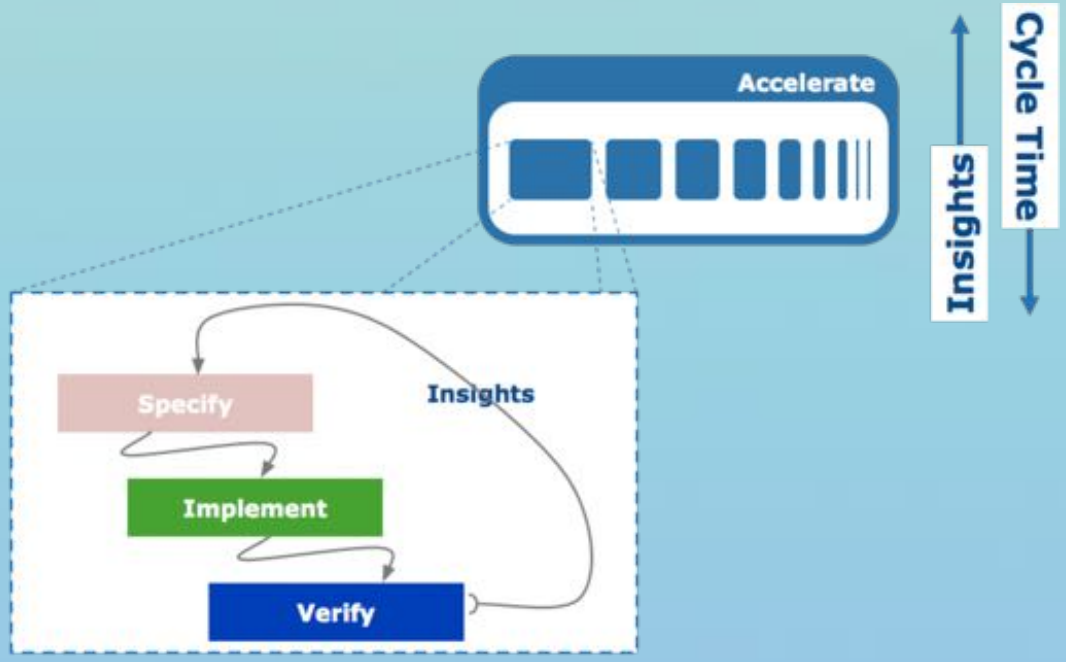
Insight Cycles

Impact of waterfall model on machine intelligence projects.



Acceleration of insight cycle crucial to project success.

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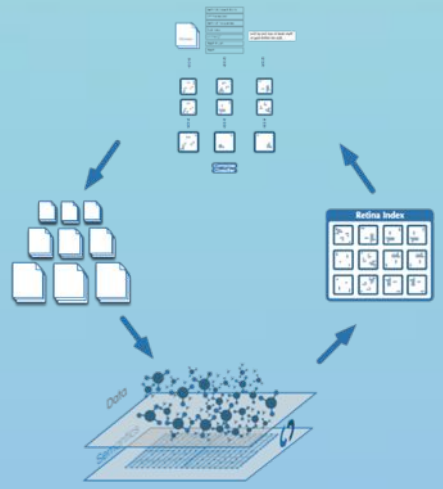
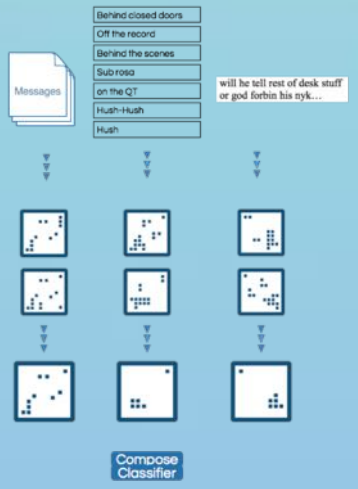
Interpretability

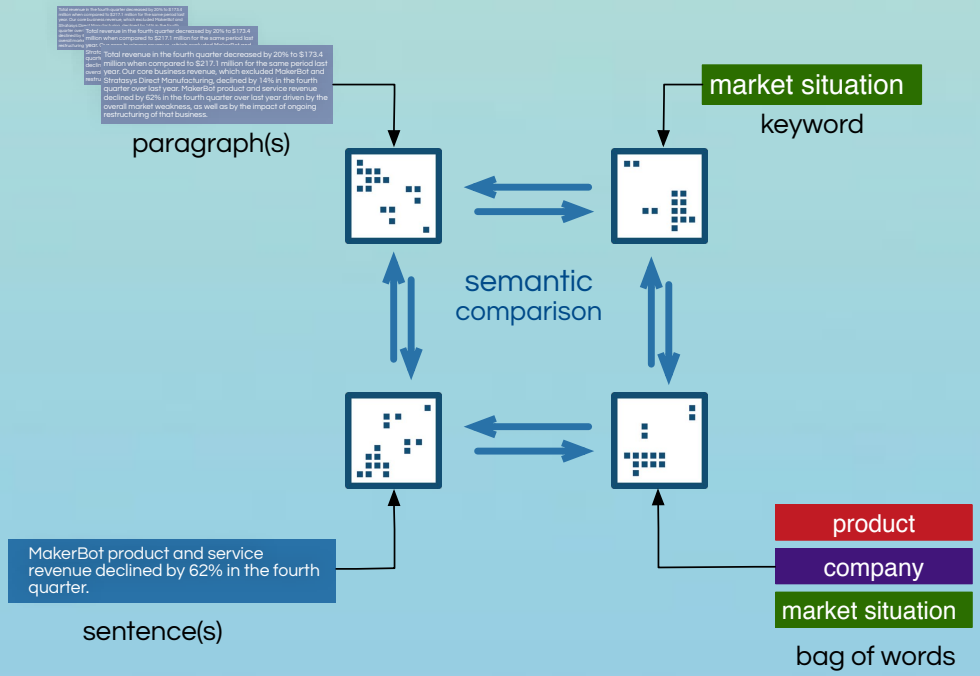
- Simplicity & comprehensibility of the workings of the system.
- Interpretability at the Subject Matter Expert (SME) level.
- Detect bias and optimise training material (variable sparsity, topology of NN, traceable samples)





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

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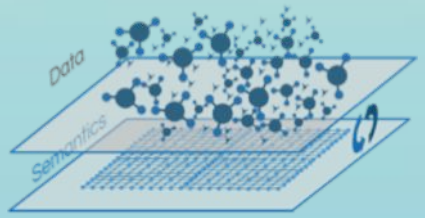
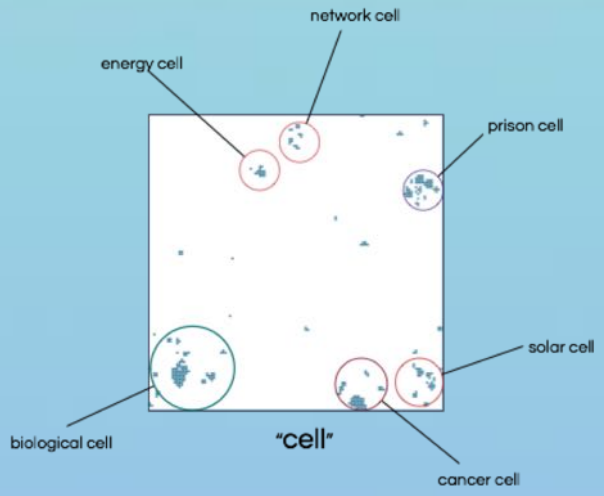
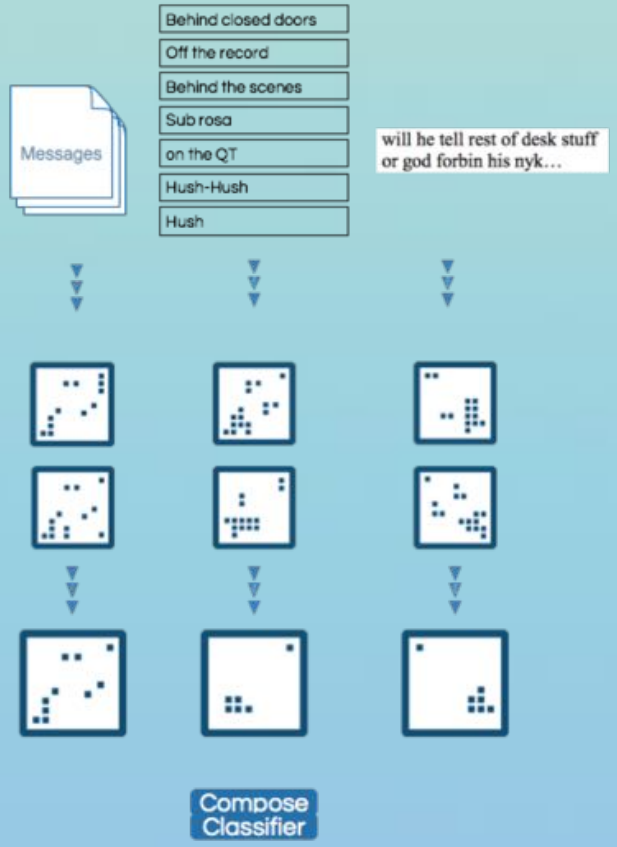
Insight Cycles

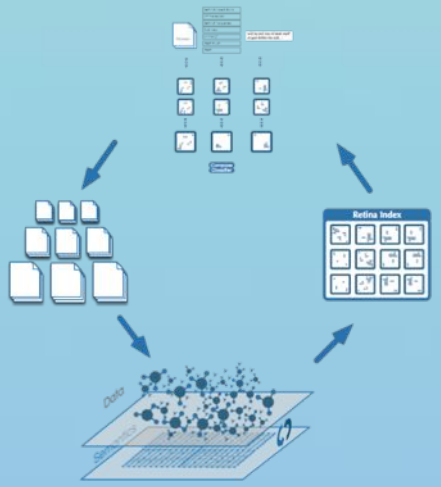




Task Agnostic Representations



Dynamic Composition &
Manipulation of Meaning



Interpretability

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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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