

# AI Driven Insurer

*Emerging Risk & Opportunity in a Digital World*

*A View from the Startup, DataRobot Under the  
Spotlight by Satadru Sengupta and Sophie Roberts*

Dubai World Insurance Congress | February 2018

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Satadru Sengupta

GM Insurance, DataRobot Inc.

# DataRobot



The world's most advanced Enterprise Machine Learning Automation platform

**2012**

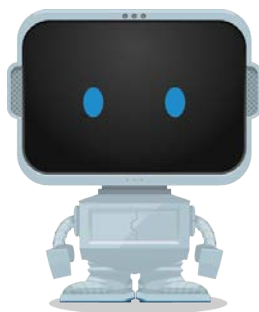
Founded, HQ in Boston, MA

**\$124M**

In funding

**400,000,000+**

Models built on DataRobot Cloud



**180+**

Data Scientists & Engineers (of 300+)

**4**

#1 ranked Data Scientists [kaggle](#)

**50+**

Top 3 finishes [kaggle](#)

INSURANCE

FINTECH

HEALTHCARE

MARKETING

BANKING

MANY MORE

... last 4 weeks

# Amazon, Berkshire Hathaway and JPMorgan Team Up to Try to Disrupt Health Care

By NICK WINGFIELD, KATIE THOMAS and REED ABELSON JAN. 30, 2018



Employees at an Amazon warehouse in Florence, N.J. The company will join forces with Berkshire Hathaway and JPMorgan Chase to try to improve health care. Bryan Anselm for The New York Times

## RELATED COVERAGE



'Dr. Alexa, I've Been Sneezing and My Throat Is Sore' JAN. 30, 2018



Can Amazon and Friends Handle Health Care? There's Reason for Doubt JAN. 30, 2018



How Big Tech Is Going After Your Health Care DEC. 26, 2017



CVS to Buy Aetna for \$69 Billion in a Deal That May Reshape the Health Industry DEC. 3, 2017



As Health Care Changes, Insurers, Hospitals and Drugstores Team Up NOV. 26, 2017

SEATTLE — Three corporate behemoths — Amazon, Berkshire Hathaway and JPMorgan Chase — announced on Tuesday that they would form an independent health care company for their employees in the United States.



**Fresh Capital From Big Players  
Blurred line between Silicon Valley & Wall St.**



**Trickle down effect on medium and small  
players**

"New technology is transforming the way we work, and it is allowing the competition to do better than what we can.

**The strange thing is we know the urgency,  
and yet there is inertia."**

*Inga Beale, The Lloyds of London, DWIC 2017*

# DIGITAL TRANSFORMATION



# Elements of Digital Transformation

1. Elastic Cloud Computing (Cloud)
2. Internet of Things (IoT)
3. Artificial Intelligence (AI)





**DATA**

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*is the new  
oil*



***AI &  
Machine  
Learning***

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*monetizes  
the data*

**Transform**

**OR**

**Disappear**

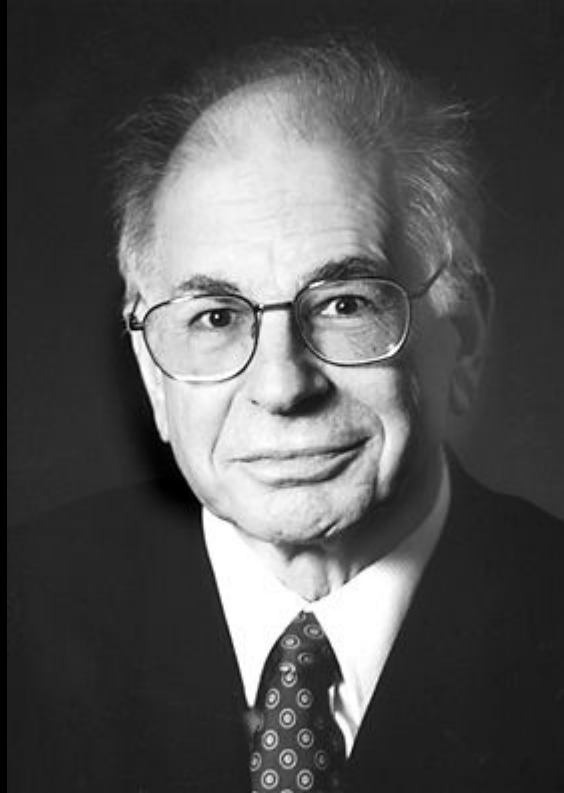




*“For us, Technology is not a cost center, it is the Company”*

*Daniel Schreiber, CEO,  
Lemonade*

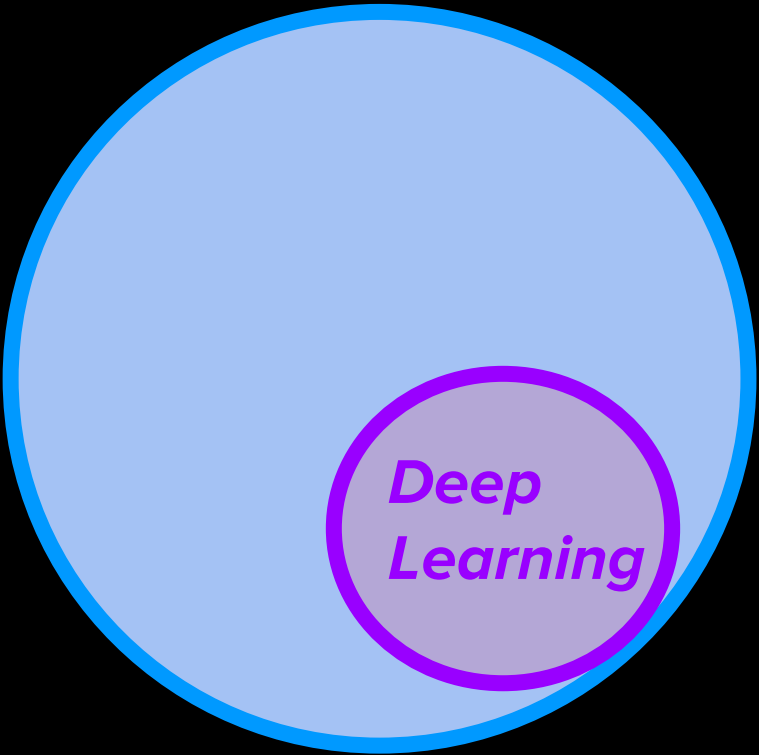
# Decision making in the 21st-century insurance companies



“Whatever else it produces, an organization is a factory that produces judgments and decisions.”

*Daniel Kahneman, Thinking Fast & Slow*

*Machine Learning*



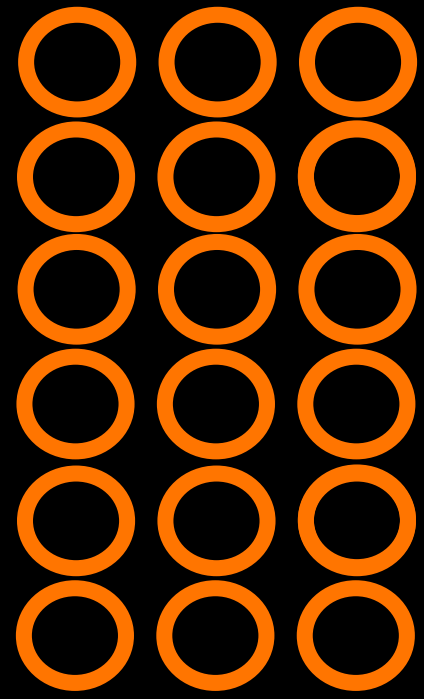
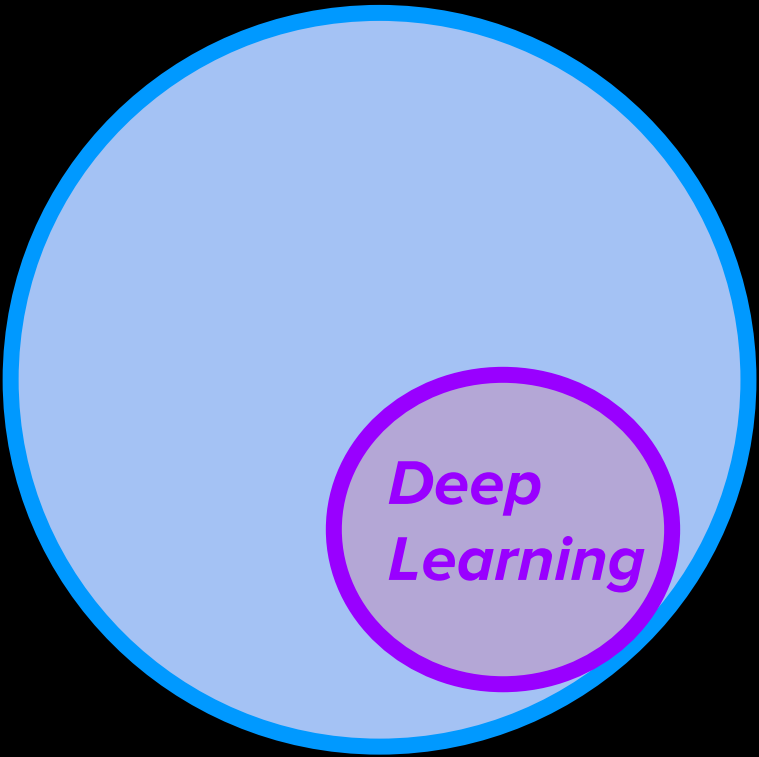
**Better Decision,  
Faster Decision.**

**Machine doesn't fall  
for biases.**

**Augmentation as  
opposed to "full  
autonomy"**

*AI: computer systems able to perform tasks that ordinarily require human intelligence*

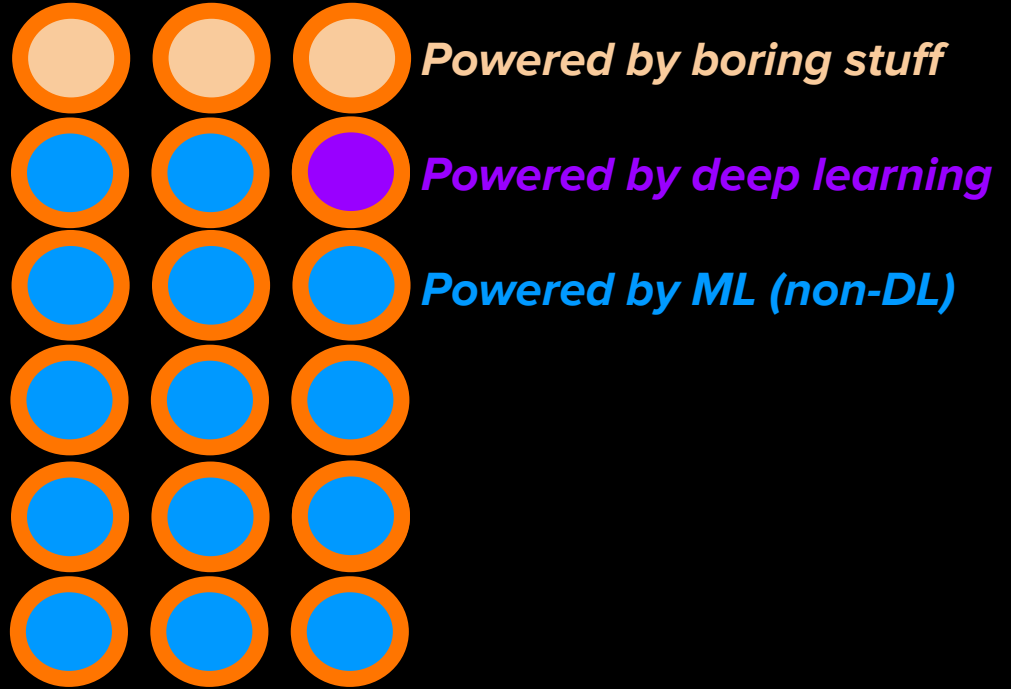
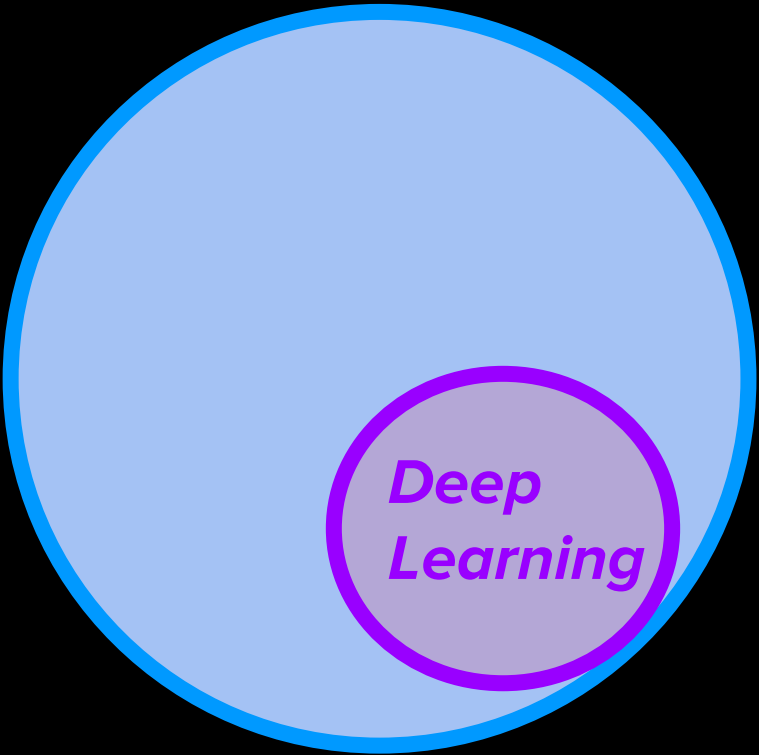
*Machine Learning*



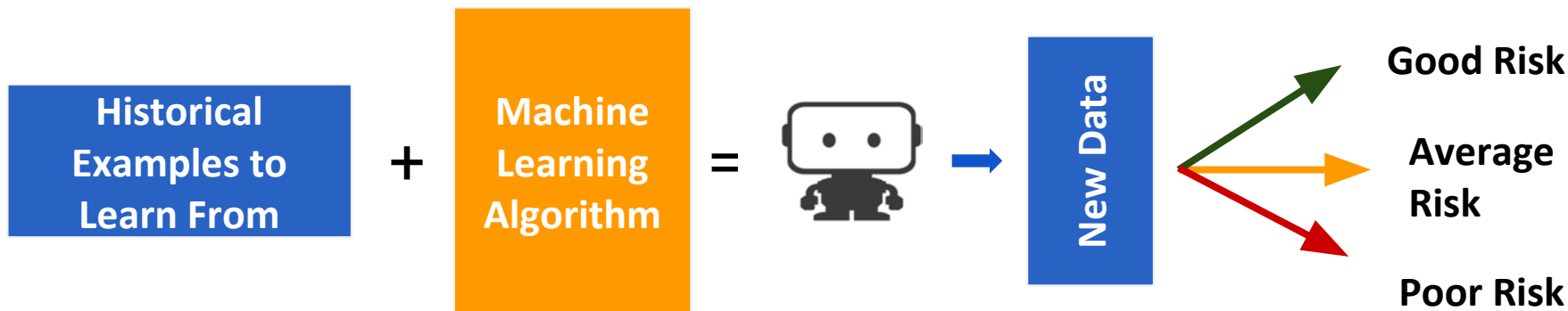


***AI: computer systems able to perform tasks that ordinarily require human intelligence***

***Machine Learning***



# How Machine Learning Is Used In Insurance



## What are the risks an insurance company cares about?

- **Marketing & Distribution:** acquisition, retention (short-term policies, e.g. as in P&C), lapse (long-term policies, e.g. in life), submission prioritization, product recommendation
- **Underwriting:** underwriting risk (# claims, \$ severity, mortality, health), agent mis-conduct, risk factors mis-reporting (roof age, insured age, smoking status, mileage, diabetes, family history)
- **Claims:** fraud, litigation, subro/ recovery, severity, duration
- **Others:** audit, IoT, loss prevention

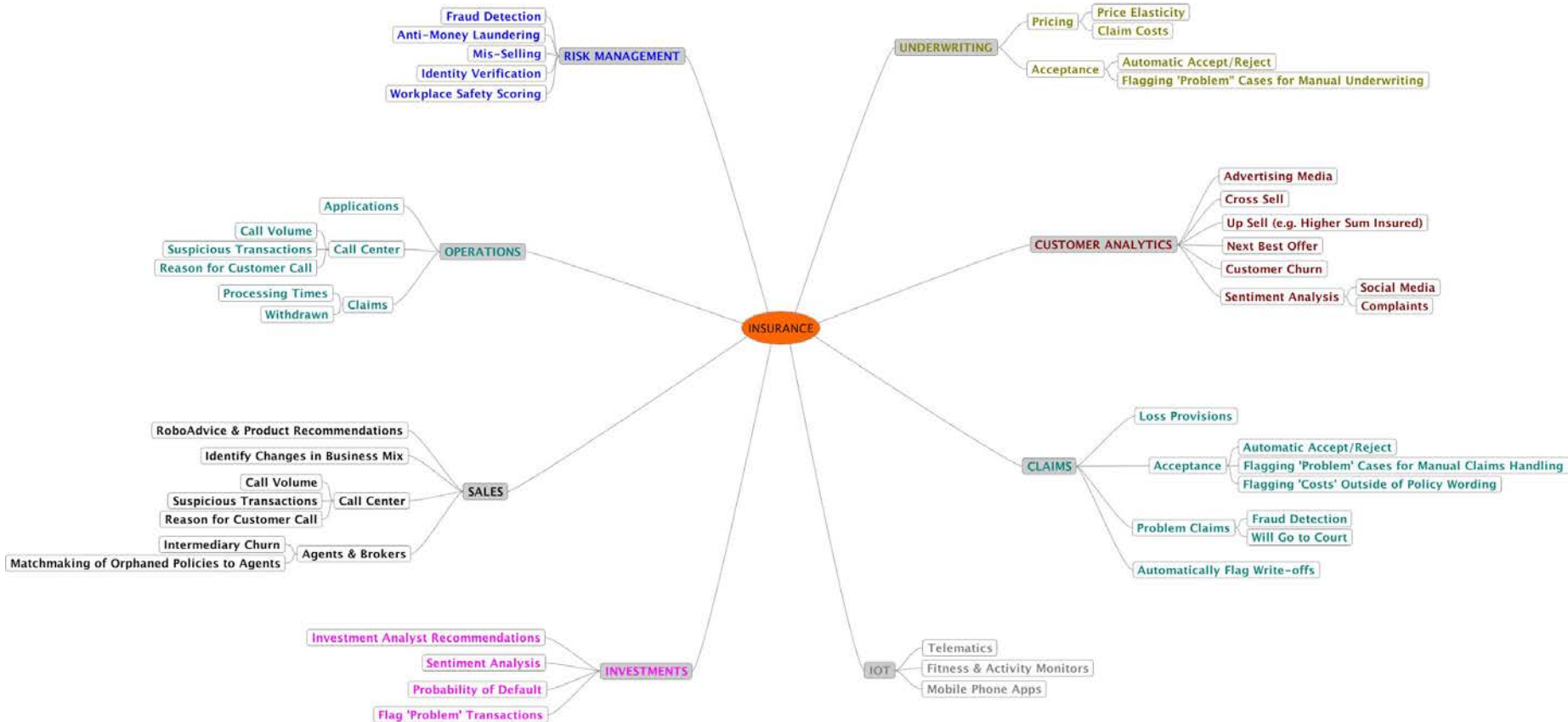


# P&C Use Case: Claims Management

- Manage claims proactively to avoid fraud, contain severity of claims, and reduce operational cost
- Predict the claim outcome based on the information available at the First Notice of Loss (FNOL) and accordingly triage the claim to the right adjustor and/ or SIU
  - **Predict the likelihood of claim being a fraud claim and assign high risk claims it to SIU for manual review**
  - **Predict complexity of the claim (if complex and long duration then propose settlement and assign to specialized adjustor):**
    - **Size of the claim**
    - **Duration of the claim**
    - **Likelihood of litigation**
  - **Predict likelihood of subrogation opportunity**
- **How we operationalize?** Claims modeling requires transparency that will help claim adjustors and fraud investigator understand what are the drivers of the predictive model and predictions.
- **Economic value:** increased operational efficiency, loss avoidance, loss containment



# Insurance

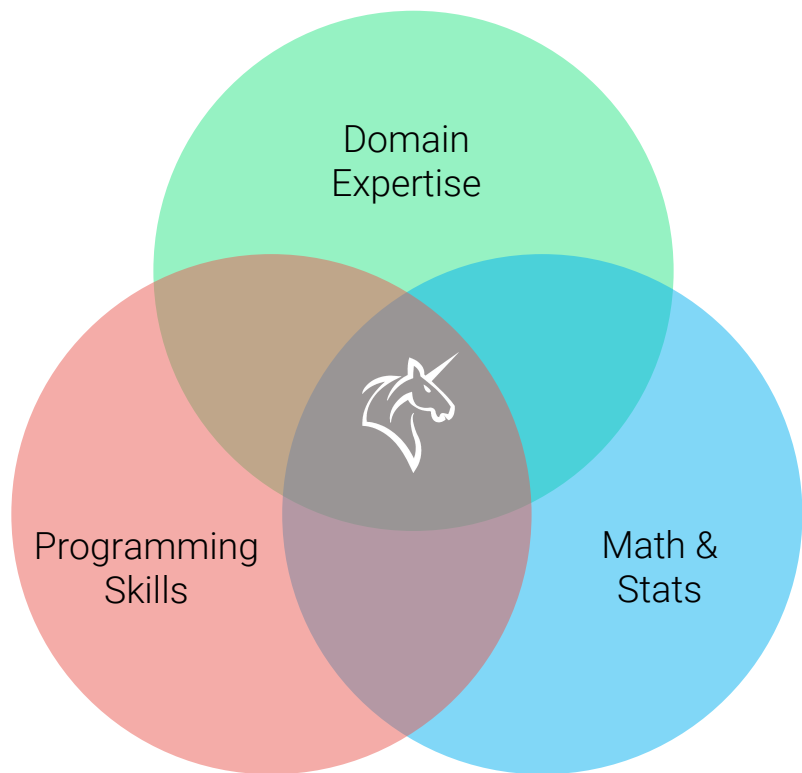


# Being AI-Driven

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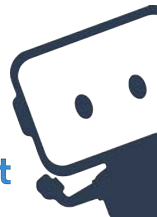
**Why Automated Machine Learning is the right strategy**

# Requirement **without** AI & Robotic Process Automation



## PREREQUISITES

1. Knowledge of the overall & specific problem
2. Knowledge of the data
3. Ability to write code to gather data
4. Ability to write code to explore/inspect data
5. Ability to write code to manipulate data
6. Ability to write code to extract actionable intel
7. Ability to write code to build models
8. Ability to write code to implement models
9. Foundational statistics
10. Internals of algorithms
11. Practical knowledge and experience
12. Knowing how to interpret and explain models



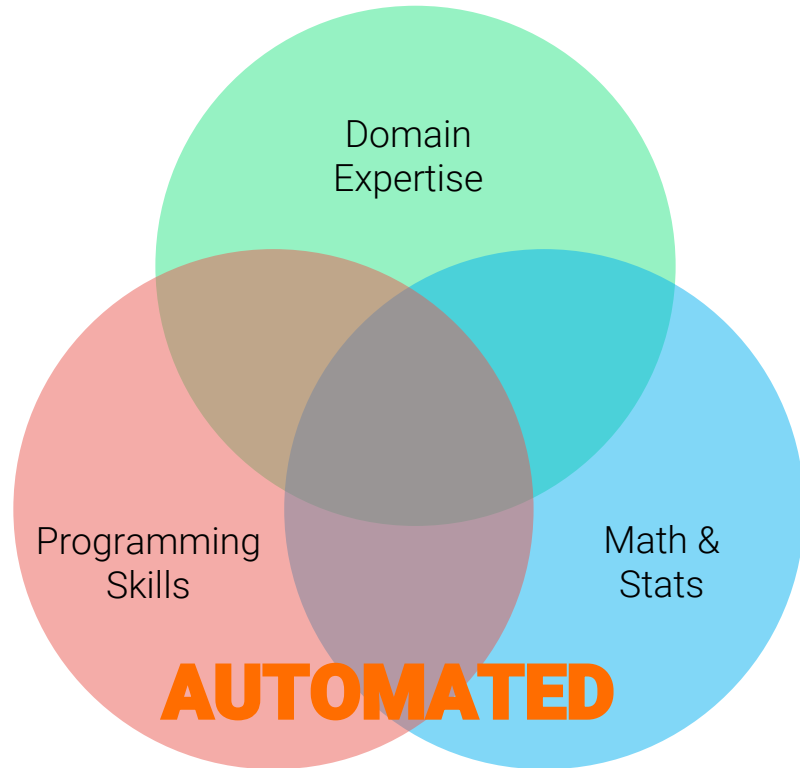
# Automated Machine Learning

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AI (artificial intelligence) builds **robotic process automation** for predictive analytics - that focuses on **accuracy, transparency, and ease of use.**



# Requirement **with** AI & Robotic Process Automation



## PREREQUISITES

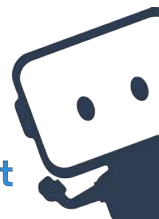
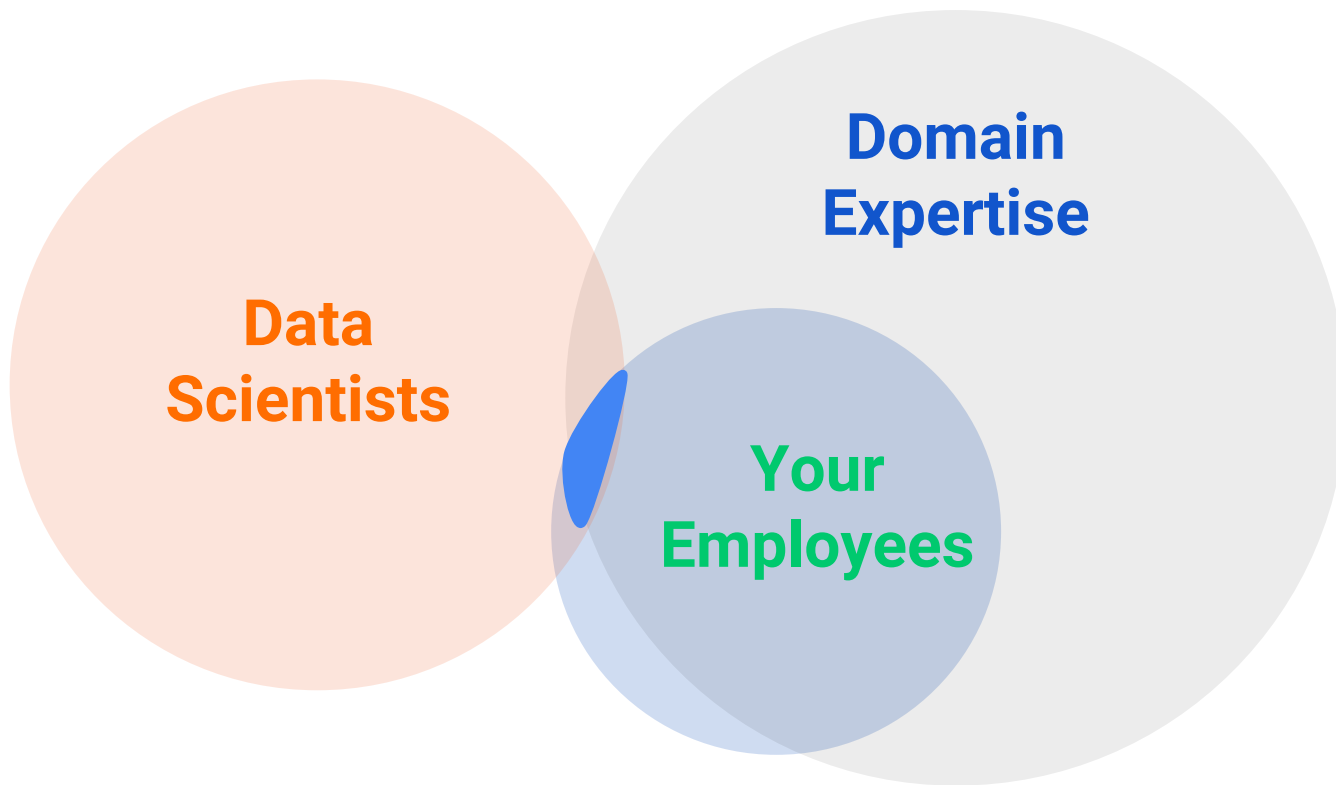
1. Knowledge of the overall & specific problem
2. Knowledge of the data





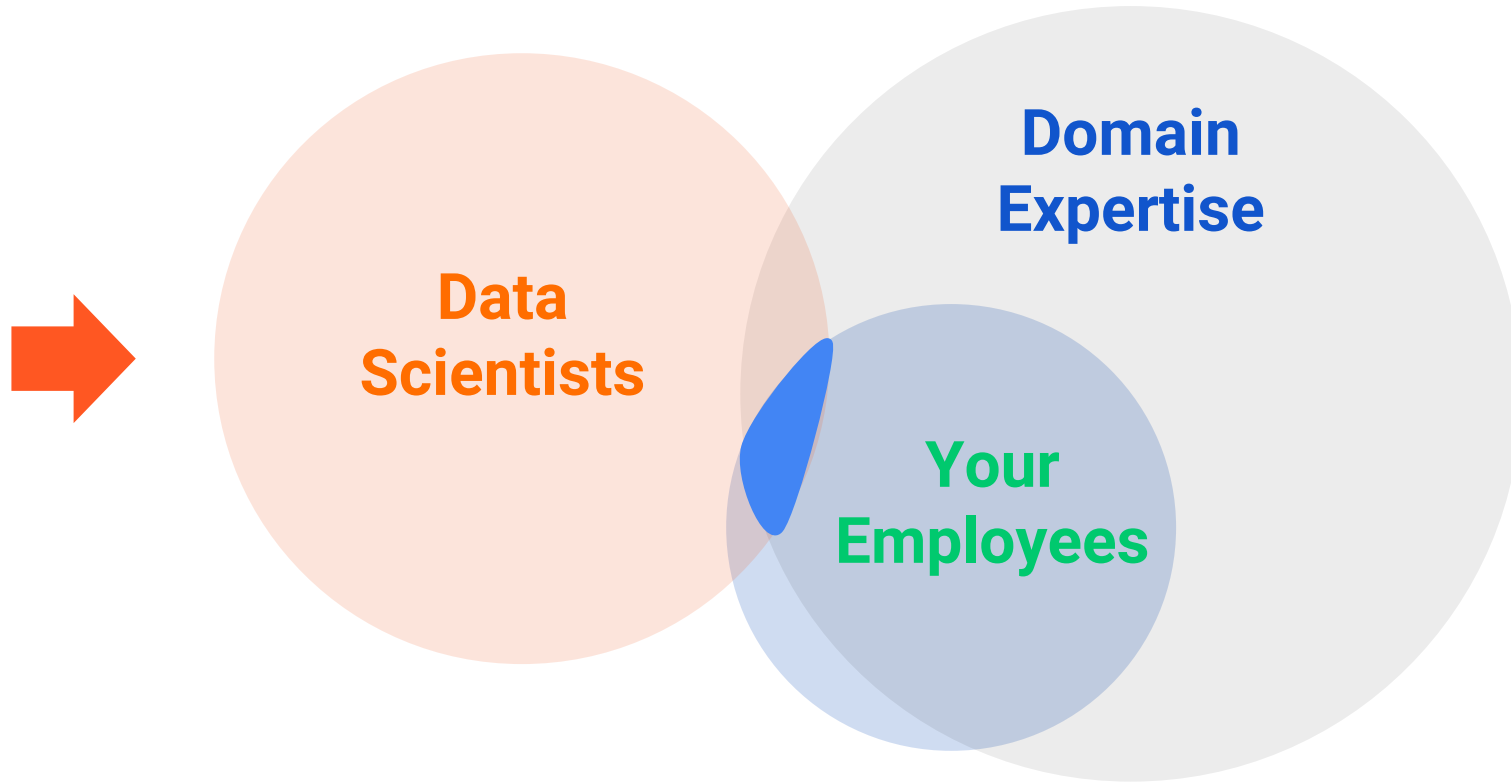
# Predictive Analytics Challenge

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# The “Failed” Approach: Data Scientist Focused

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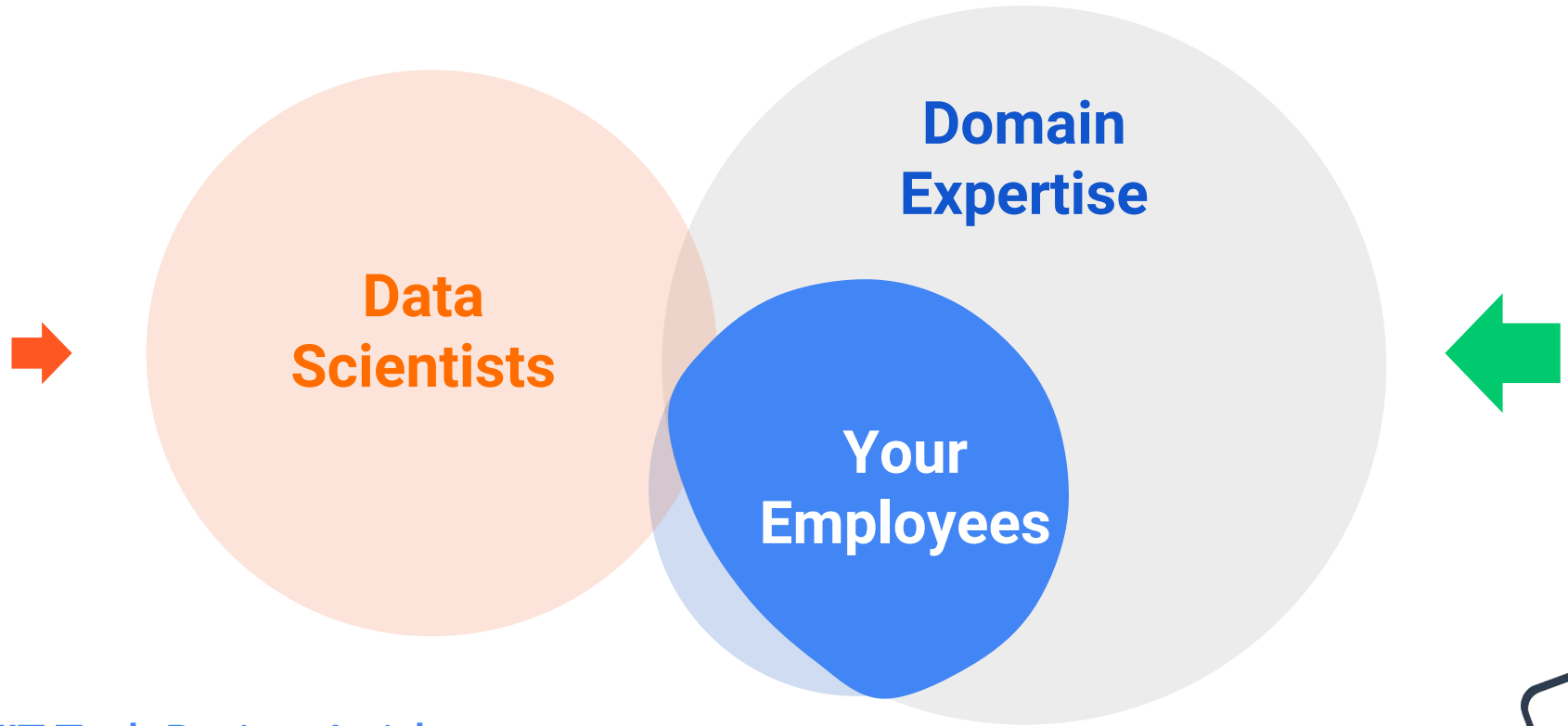


<https://hbr.org/2016/12/why-youre-not-getting-value-from-your-data-science>



# Large Scale Delivery Model: Process Automation Focused

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[MIT Tech Review Article](#)



# Accuracy

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One or Two Algorithms.



# Transparency

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Only Selected Few Can Explain



Anyone Can Explain



# Ease of Use

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**Artisanal: Only Selected Few Can Use**



**Anyone Can Use**





**THANK YOU**

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[satadru@datarobot.com](mailto:satadru@datarobot.com)  
[www.datarobot.com/insurance](http://www.datarobot.com/insurance)

VISIT US AT THE BOOTH TO SEE HOW AUTOMATED MACHINE  
LEARNING WORKS