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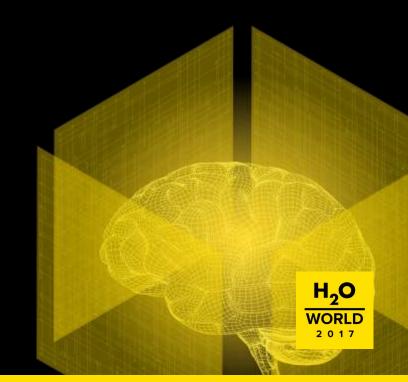
VP, Head of Data Science





Automating Data Science with Robots

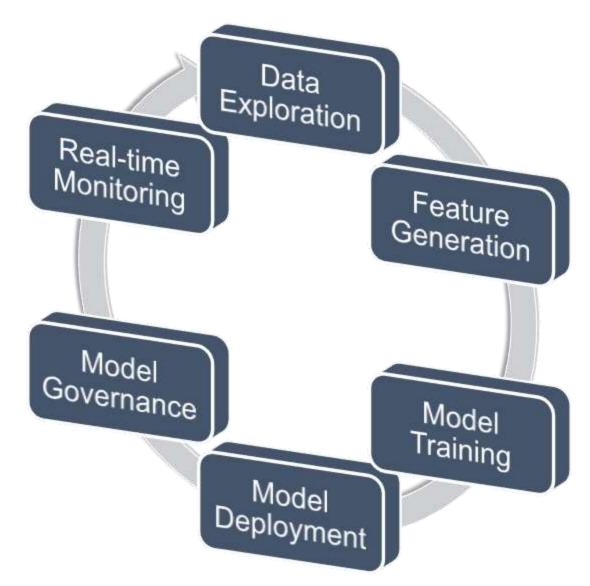
December 5th, 2017



Automating Data Science with Robots

Socure's Real-Time System

A robot is a machine—especially one programmable by a computer capable of carrying out a complex series of actions automatically.





Data Exploration

Robot

Challenge

- Extract knowledge from data even though you do not know what you are looking for
- Structured vs Unstructured data

- Built a machine that automatically performs following tasks:
 - Structures & cleanses data
 - Determines data types
 - Applies stats test per data type
 - Generates performance analytics



Feature Generation

Robot

Challenges

- Determine which data points are suitable to solve and/or answer specific questions
- Supervised vs.
 unsupervised feature
 engineering
- Feature stability



- Built a machine that automatically performs following tasks:
- Applies various techniques to generate features
- Quantifies the incremental value of any new feature



Model Training

Robot

Challenge

- Build models by applying various machine learning algorithms
- Select solution that answers specific questions with highest accuracy and justification

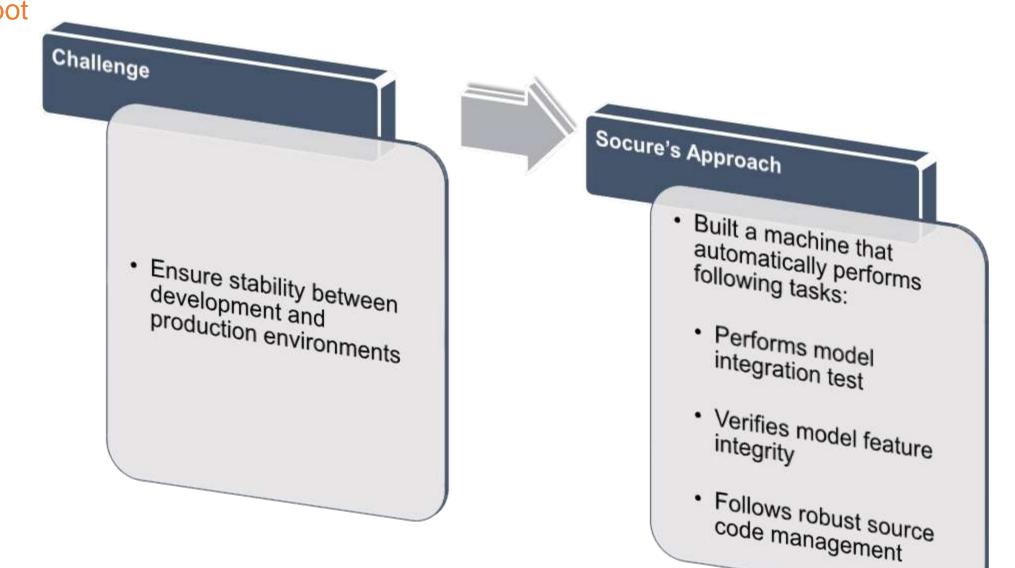


- Built a machine that automatically performs following tasks;
 - Optimizes data engineering
 - Optimizes features selection
 - Applies framework for ML algorithm competition
 - Generate model ensembles
 & Analytics



Model Deployment

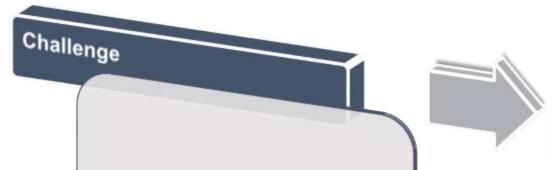
Robot





Model Governance

Robot



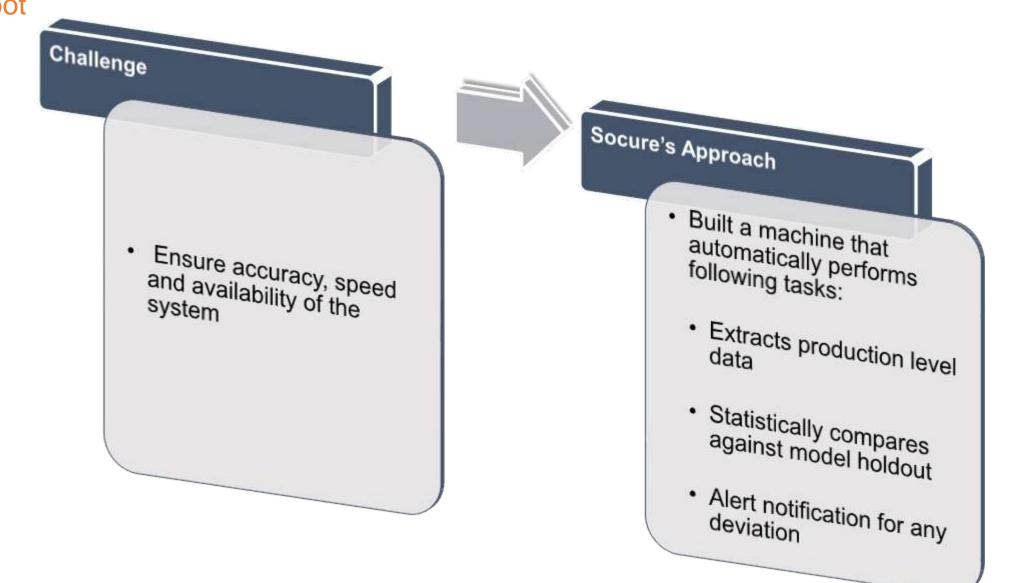
 Ensure models are empirical, free of bias and meets our client's compliance requirements

- Built a machine that automatically generates the appropriate governance
- Detailed Model Framework Purpose
- Dependent Variable
- Assumptions / Limitations
- Predictors
- Stress testing, challenger models
- Detailed Production Model Lifecycle Model monitoring
- Model refresh schedule
- Model retirement



Real-time Monitoring

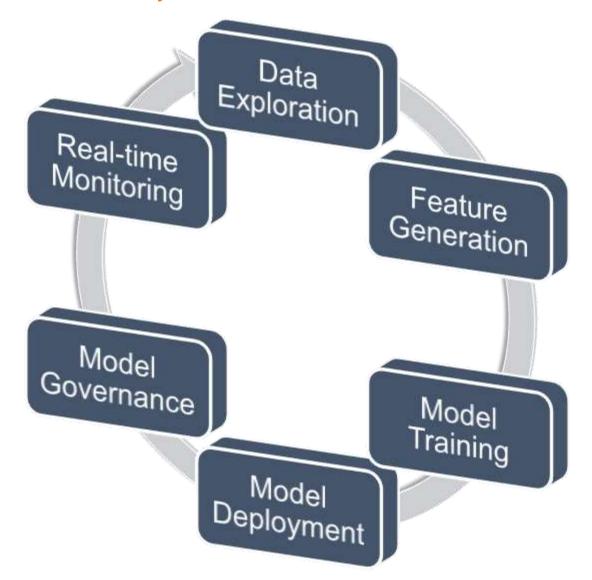
Robot





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Socure's Real-Time System



Our robot adds trust to identity.

