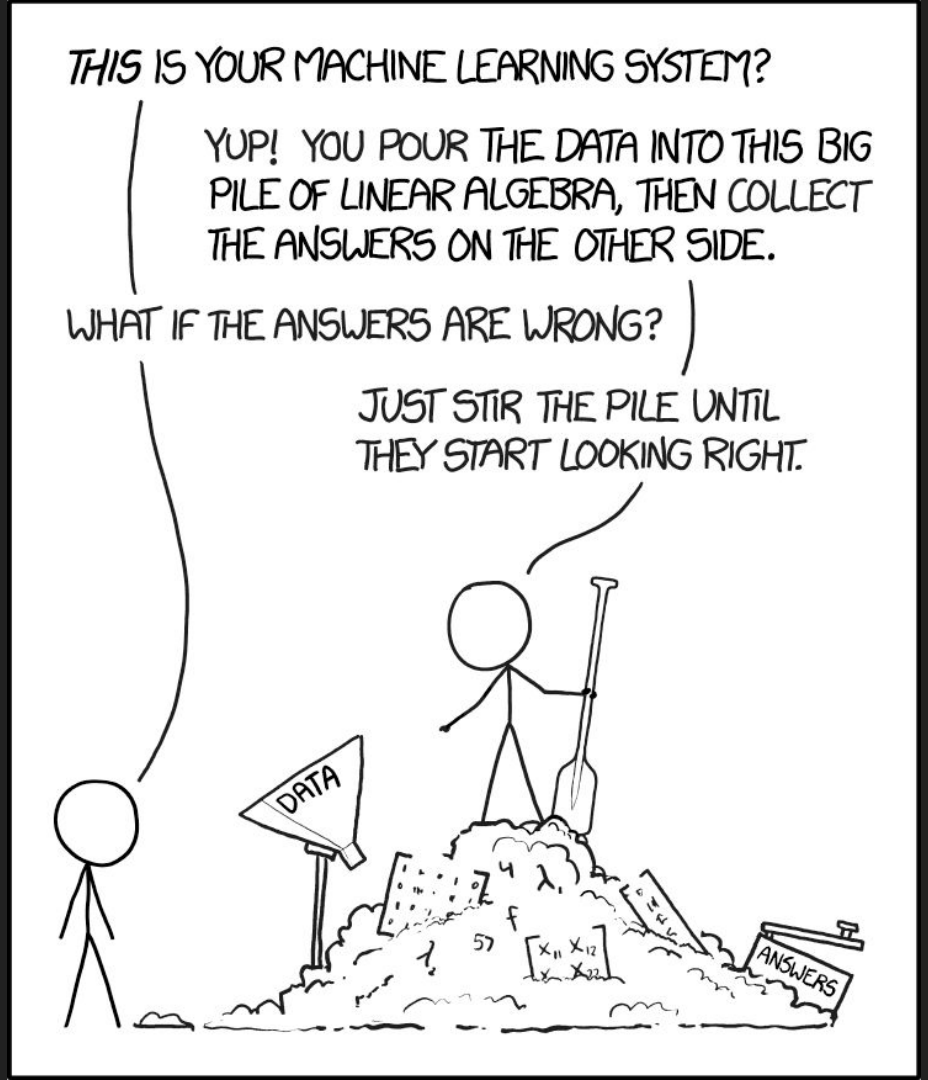
How does Machine Learning add business value?

An example from anomaly detection

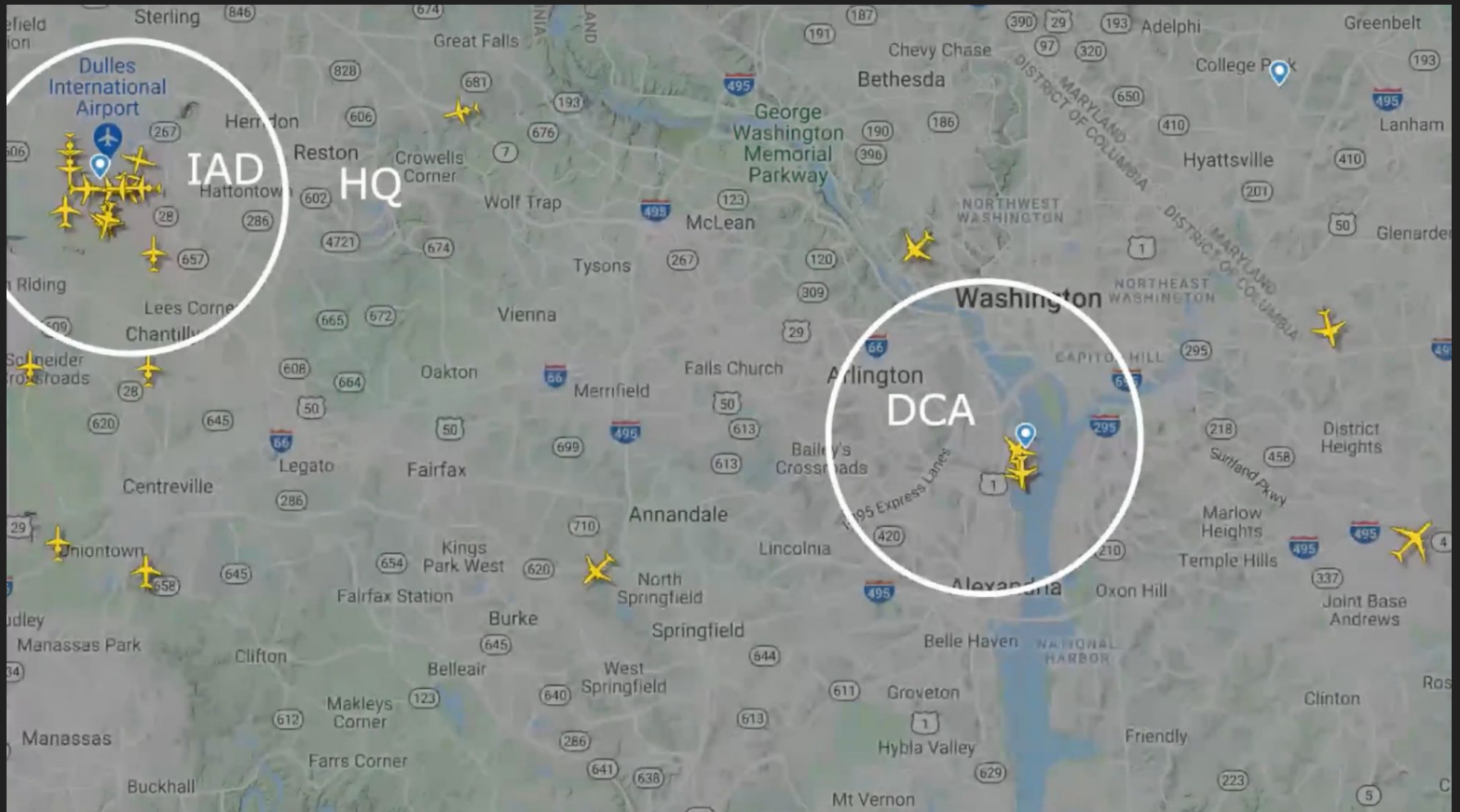
How does ML add value?

Often, it doesn't

- Poor data
- Need for transformation
- Choosing the right model
- Interpreting the results
- Translating into real value

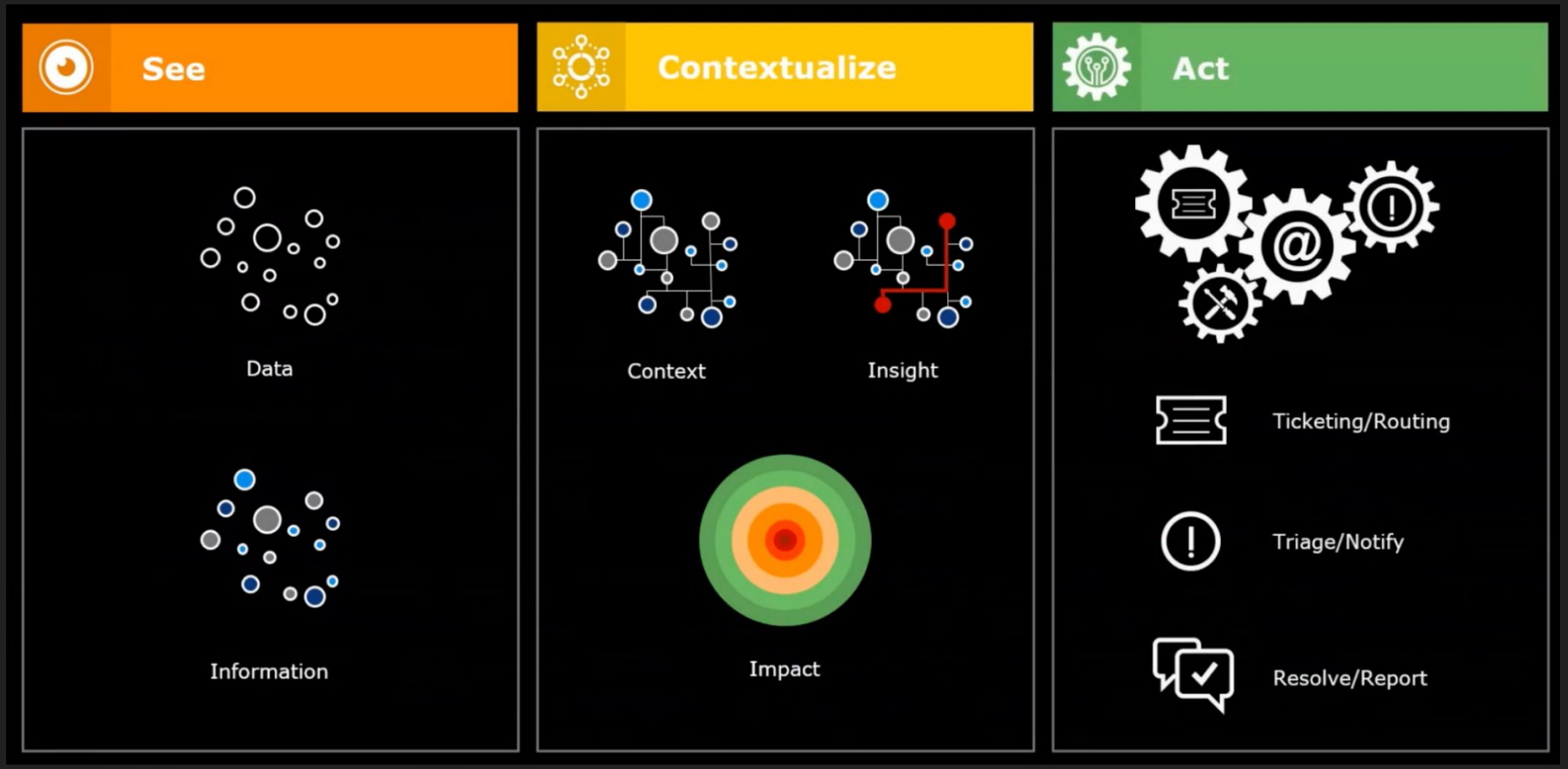


What we imagine our data problem looks like:



What our data problem actually looks like:

Framing your data problem



Framing your data problem

See

Self-organizing data

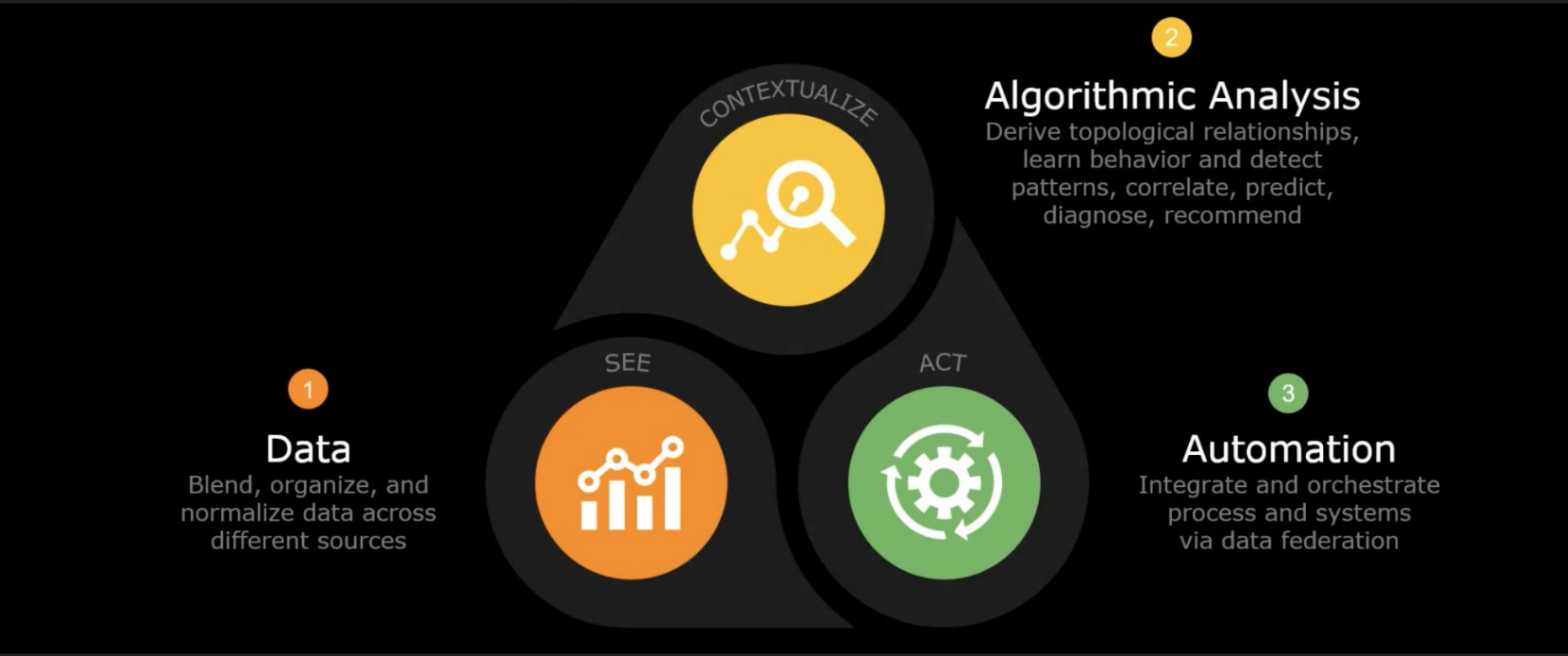
Contextualize

Self-scoring analytics

Act

Self-healing

Framing your data problem

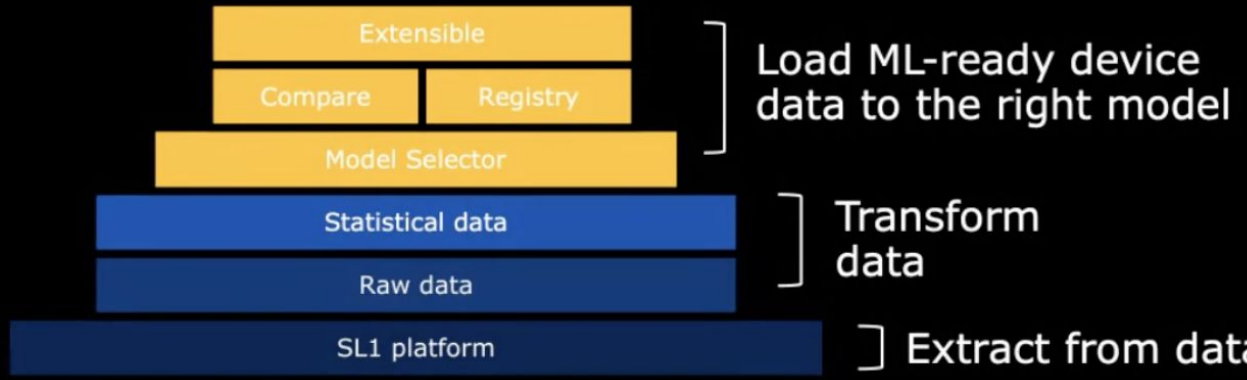


How can Machine Learning help solve our data problem?

- What is normal?
- What is unusual?
- What is noise?
- How can ML help me with this?

- Scalable
- Extensible
- Flexible for new data types
- Minimal user input

Data is the foundation of ML



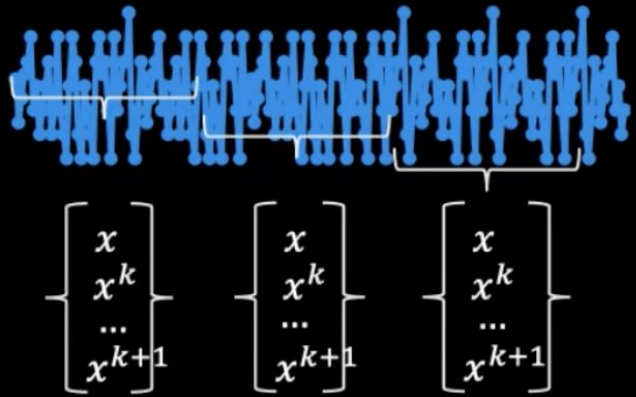
Transforming your data

Obtain a time-series dataset

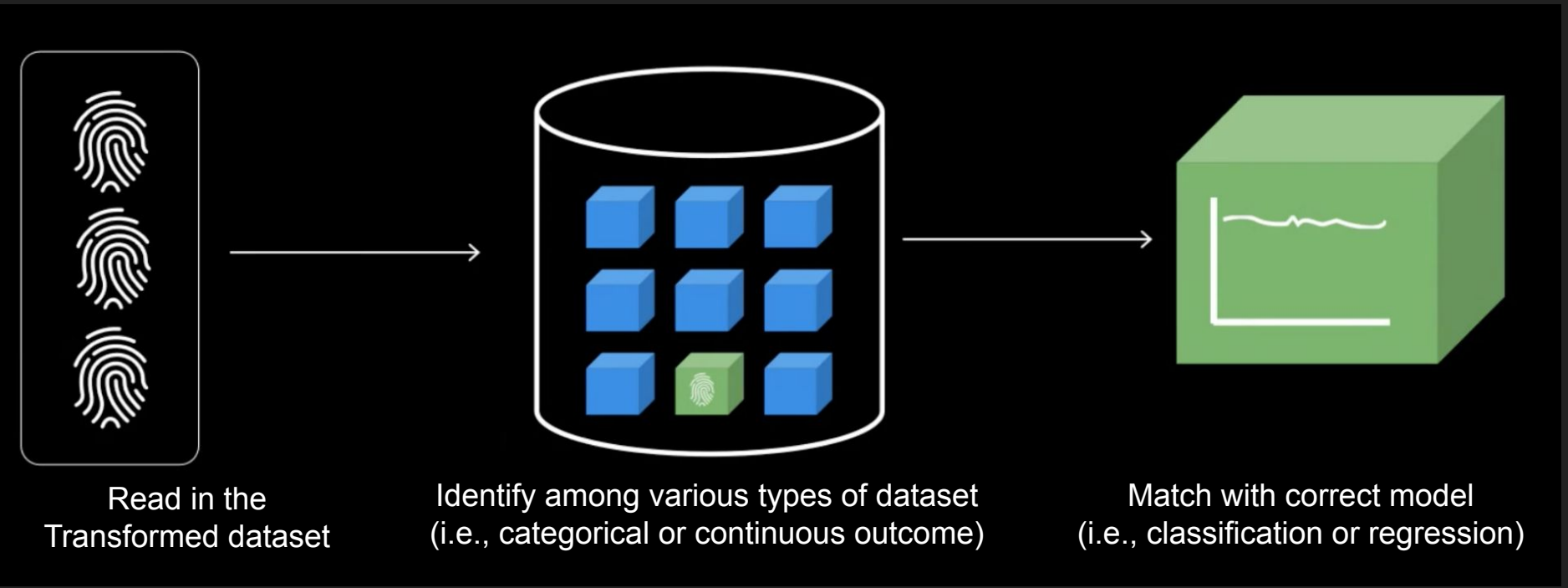
Translate from Unix Epoch

"1592887":	16.8,
"1592889":	16.4,
"1592891":	19.8,
"1592893":	25.6,
"1592895":	18.9,
"1592897":	56.4,
"1592899":	46.6

Identify patterns & trends



Selecting the right model



Read in the
Transformed dataset

Identify among various types of dataset
(i.e., categorical or continuous outcome)

Match with correct model
(i.e., classification or regression)

Different datasets & problems require different models

- Classification
- Linear Regression
- Clustering unlabeled data
- Time-Series Predictions
- Anomaly Detection

Example: Anomaly Detection

Example: Anomaly Detection

Anomaly detection

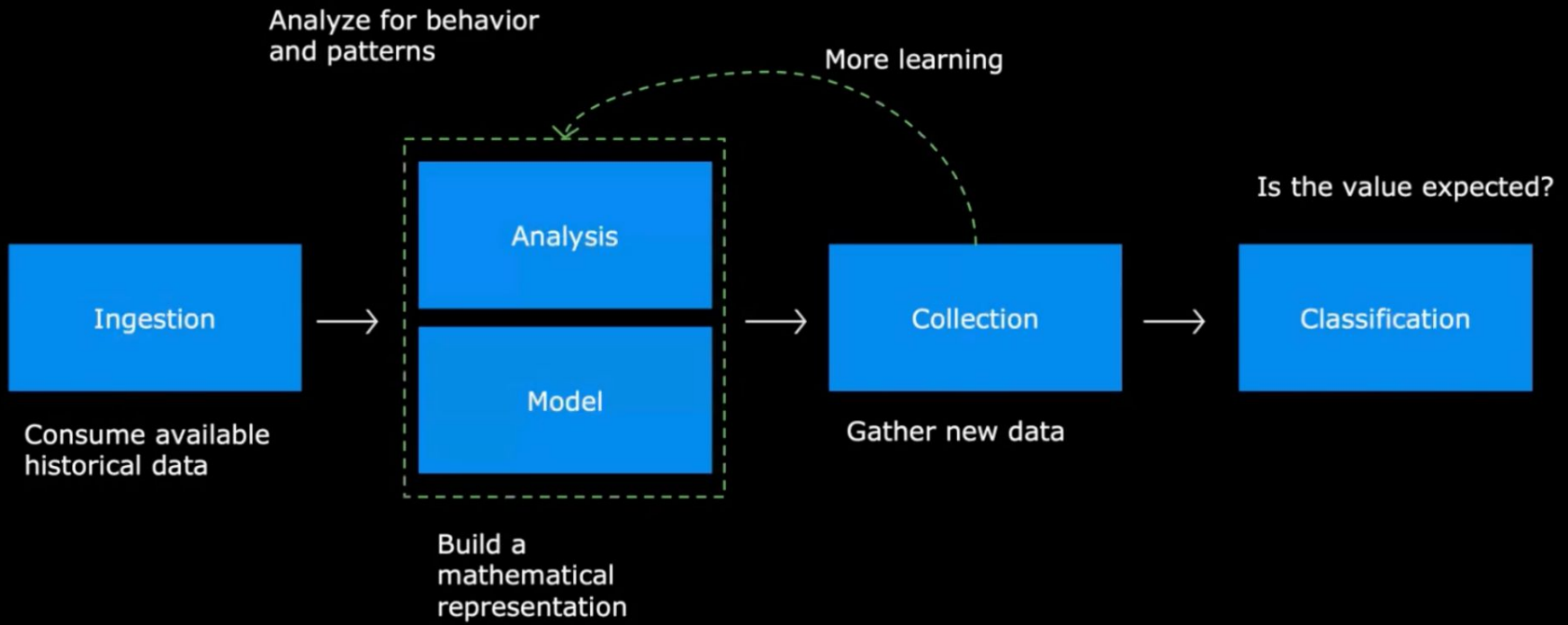
- The identification of rare items, events, or observations
- Can raise suspicions by differing significantly from most of the data

How we do it

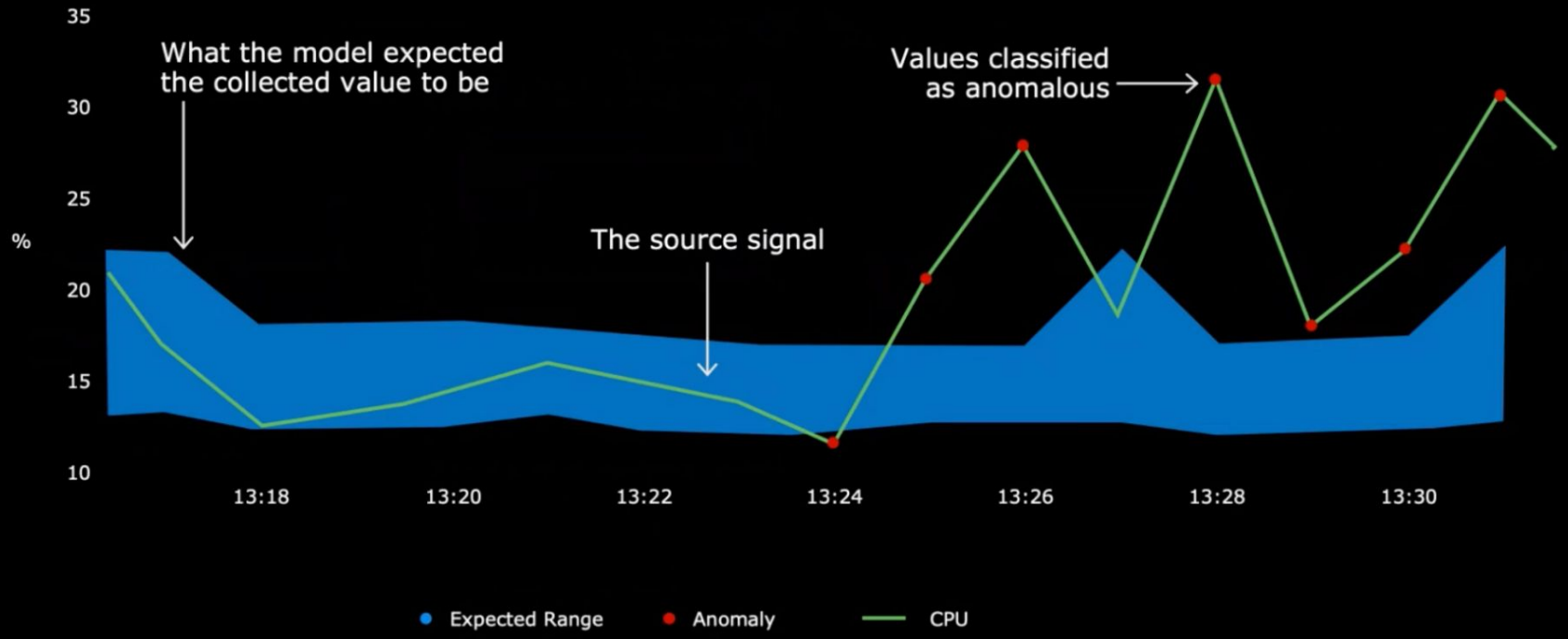
Suite of algorithms that automatically

- Learn what is normal performance
- Identify strange, outlier behavior
- Adapt and learn new behavior in real-time

Example: Anomaly Detection

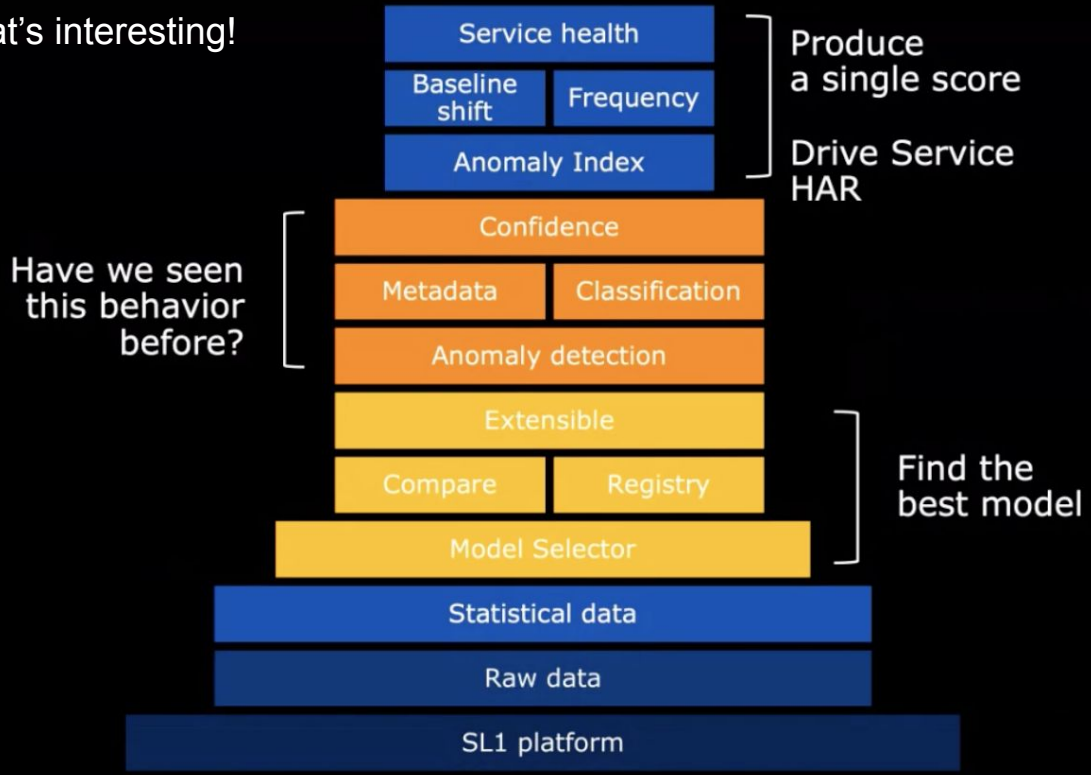


Example: Anomaly Detection



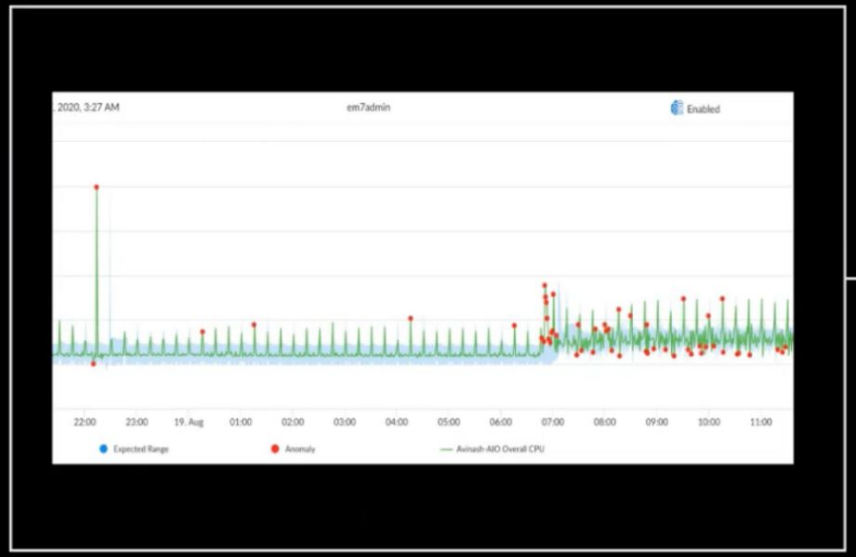
Adding business value

It's not enough to find anomalies… We have to determine what's interesting!



Adding business value

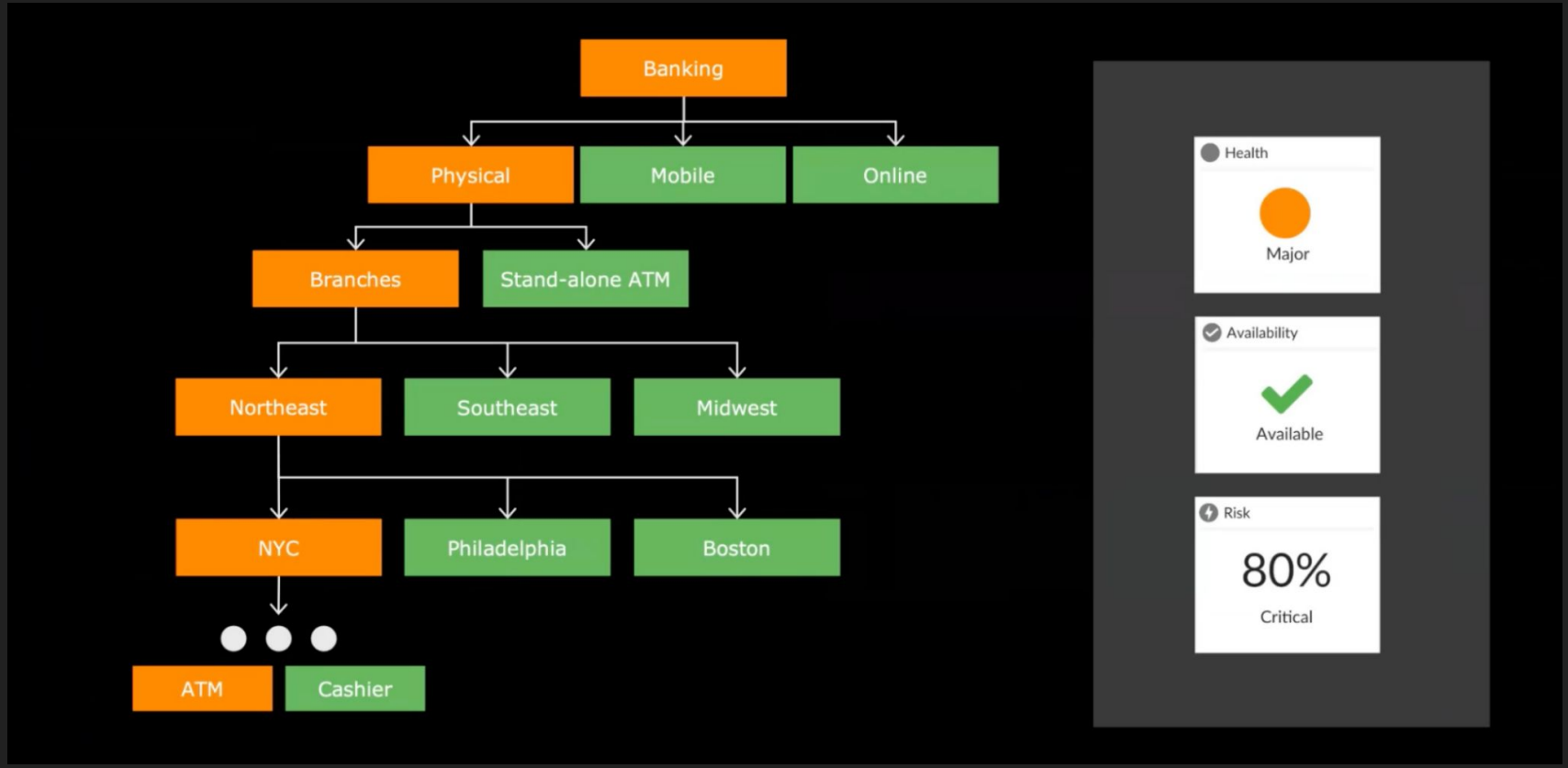
From This



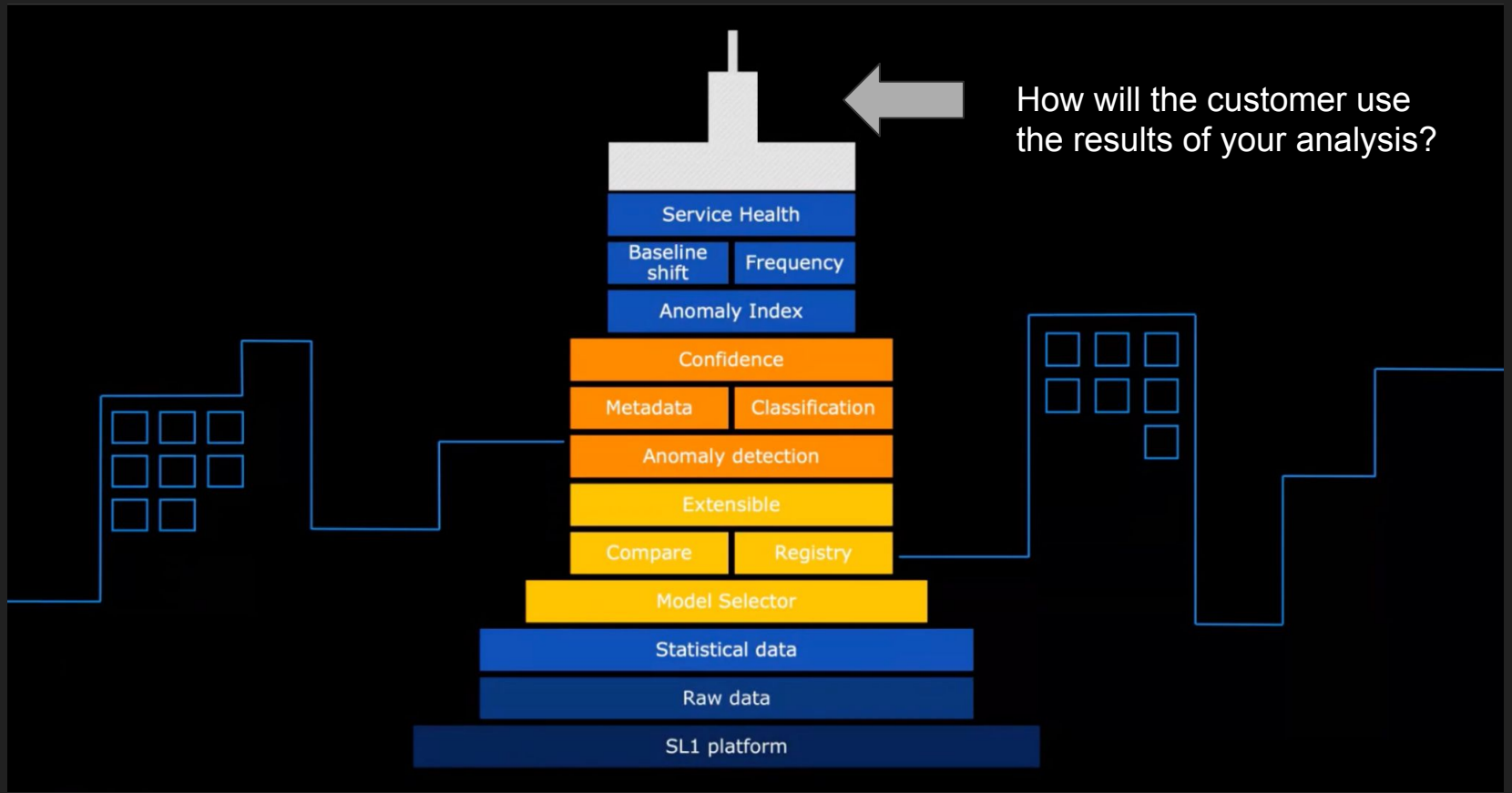
To This

Adding business value

How will customers use the data & predictions from our model?



Every ML analysis should lead to real business value



Source

https://sciencelogic.com/thank_you/wheres-the-ai-ml-in-sl1