

AYASDI Core

Accelerating the Discovery of Powerful Insights from Complex Data

The Problem

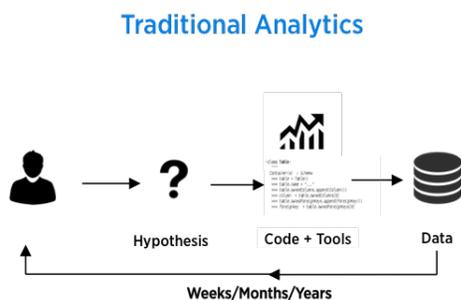
Your data continues to grow exponentially in both volume and complexity. Finding key insights that drive new revenue streams, forge stronger customer relationships, prevent fraud and mitigate risk can prove to be extraordinarily difficult. Conventional approaches to data analysis struggle with highly complex data. These hypothesis-driven, iterative approaches are time-consuming, expensive and heavily reliant on specialized individuals asking the right questions of your data. As these query-based approaches are typically limited to subsets of your data, they can miss critical insights.

The Solution

Ayasdi Core™ is advanced analytics software that accelerates the discovery of critical intelligence from complex data – previously hidden or overlooked by conventional analytics tools. Ayasdi Core draws on the power of topological data analysis (TDA) to find deep insights within your data.

“The technology at Ayasdi, based on Topological Data Analysis, is one of the top ten innovations developed at DARPA in the last decade.”

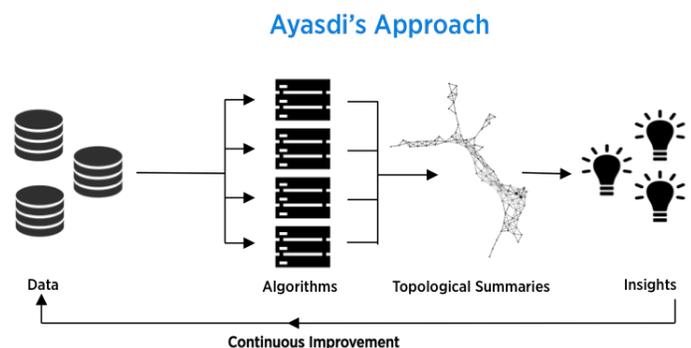
- Tony Tether, Former DARPA Director



Slow, iterative process

Incomplete and missing insights

Analysts and Data Scientists



Fast, data-first approach

Comprehensive and deep insights

Domain Experts

Comparing Ayasdi's approach with traditional analytic

Deep and Comprehensive Insights

PUT ALL OF YOUR DATA TO WORK

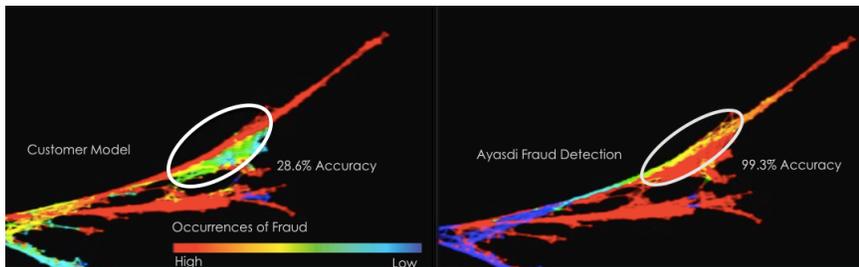
Ayasdi Core starts with your data. It is adept at correlating and analyzing continuous, categorical and textual data from disparate sources.

FIND ALL THE SIGNIFICANT PATTERNS

It uses TDA to apply a broad range of algorithms spanning machine learning, statistics and geometry to high-dimensional data to find and explain all the significant patterns in your data.

UNCOVER DEEP INSIGHTS

It uses topological summaries to visually reveal subtle insights often invisible to conventional analytic methods.



Find previously hidden characteristics of fraud to improve models

THE BUSINESS IMPACT

A major credit card company uncovered seven characteristics in its transactions, that when simultaneously present, indicates fraud may be occurring. Incorporating these findings into its models increased the firm's accuracy of fraud detection from 29% to 99% for a subset of its transactions.

Accelerated Insights Discovery

START WITH ANSWERS

Ayasdi Core takes a data-first approach to analysis. It speeds the process of uncovering unique patterns and relationships in your data.

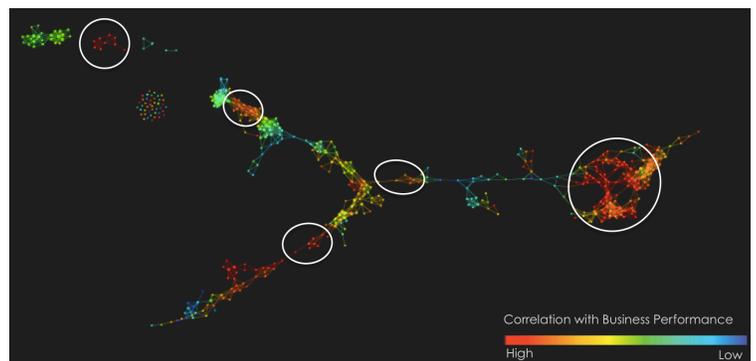
FOCUS ON THE UNDERLYING REASONS

The rapid discovery of patterns lets your experts focus on exploring the underlying reasons.

EMPOWER YOUR DOMAIN EXPERTS

Unlike iterative, hypothesis-driven analytical

approaches that are heavily dependent on a few specialized individuals to scale, Ayasdi Core empowers your domain experts to find answers fast without requiring them to write queries or code algorithms.



Shortened the variable selection process - from 3 months to 2 weeks

THE BUSINESS IMPACT

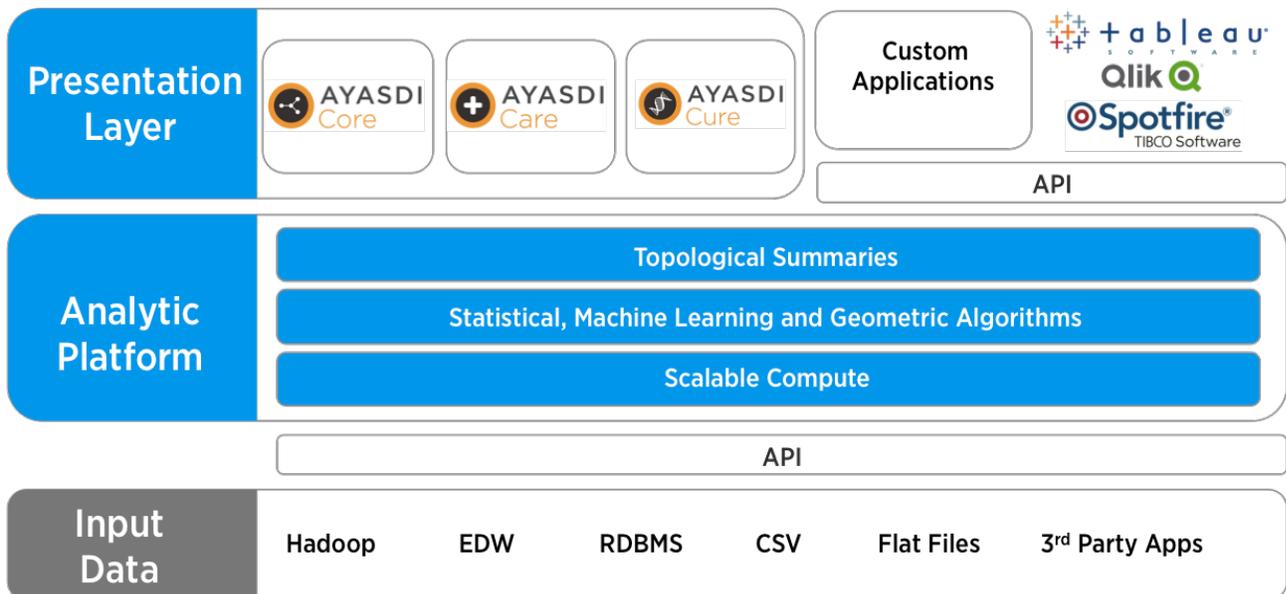
A Fortune 50 investment bank used Ayasdi Core to rapidly correlate the impact of 2600 macro-economic variables on revenue streams to identify the most critical variables to incorporate into its risk management models. The bank was able to shorten its variable selection process- from three months to two weeks.

Solving Complex Data Challenges

Industry leaders use Ayasdi Core to tackle a wide array of challenges including precisely segmenting customers, delivering superior patient outcomes, detecting hidden instances of fraud, identifying indicators of risk, or finding the next major oil field. By accelerating the discovery of deep insights within complex data, Ayasdi Core frees you to spend time on what you do best: creatively applying advanced analytics to solve your most pressing business problems.

 Healthcare	 Financial Services	 Life Sciences	 Public Sector	 Consumer	 Energy	 High Tech	 Communications
Clinical pathway development	Client segmentation	Precision medicine	Target discovery	Personalized marketing	Unconventional exploration and recovery optimization	Design simulation optimization	Customer segmentation
Population health management	Market conditions analysis	Drug target discovery	Patterns of life detection	Customer segmentation	Drilling and deepwater exploration	Anomaly detection	Personalized marketing
Denials reduction	Model validation	Clinical trials analysis	Model improvement	Sales and operations planning	Signal processing	Predictive maintenance	Churn analysis
Comparative effectiveness	Risk management	Indication discovery	Signal processing for threat detection		Predictive maintenance	Cyber-security threat prevention	Network optimization
Precision medicine	Fraud detection	Adverse drug events	Supply chain optimization		Breakthrough event prediction		
Fraud, waste & abuse detection		Comparative effectiveness	Public health initiatives		Trader surveillance		
Provider network management		Precision marketing	Text analysis				

The Ayasdi Architecture



Key Features and Benefits

FEATURES

BENEFITS

Presentation Layer	
Interactive User Interface	Explore subgroups and statistics across data types using highly interactive network graphs
Incorporate Existing BI Tools via REST APIs	Leverage investments in existing dashboards and portals (e.g., Tableau, Spotfire) to present TDA results
Collaborative Workspaces	Easily share analyses with your peers. Compare analyses simultaneously using multiple viewing panes to differentiate signal from noise
Analytic Platform	
Topological Summaries	Provides a novel way to explore the geometric relationships within data
Algorithmic Reach	Apply a broad range of machine learning, statistical and geometric algorithms (lenses and metrics) to your data to gain comprehensive and deep insights
Quick Analysis	Speed data exploration by applying an optimal combination of lenses, metrics and parameters to your data to automatically generate a selection of analyses
Color By	Quickly reveals subgroups of interest by coloring network graphs by lens values or any combination of data attributes
Data-driven Segmentation	Select interesting regions (e.g., flares and loops) in the network to create logical groups. Easily access the underlying data for these sections of interest – right from the same interface. Select subgroups for further analysis or easily export the data
Explain Tables	Quickly identify statistically significant differences in groups to identify the key attributes that characterize them
Supervised and Unsupervised Analysis	Shift from unsupervised to supervised analysis by adding data lenses (metadata) of interest to your analysis. Side-by-side comparisons reveal key attributes that distinguish subgroups
Extensive Graphs and Plots	Gain a deeper understanding of the underlying reasons for group separation using histograms, scatter plots and box plots
Data Layer	
Data Format Support	Merge and analyze continuous, categorical and textual data
High-dimensional Data Analysis	Easily analyze complex, multi-dimensional data
Ingest APIs	Access data from disparate sources in different formats – e.g., databases, data warehouses, Hadoop implementations and custom apps - via APIs

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