

# Emcien's PATTERN DETECTION TECHNOLOGY PLATFORM

Emcien is a pioneer in the field of graph analytics, the technology behind the pattern detection engine. For more than eleven years Emcien has used this technology to solve Big Data problems across industries and government organizations. Today Emcien offers a suite of software that use the technology to automatically analyze very large and complex data sets.

Our software solutions are powered by the advanced algorithms of the pattern detection engine. The technology, developed by Chief Scientist Dr. Roy Marsten, uses advanced algorithms to automatically **tokenize, graph, and rank** data sets to reveal the most significant, relevant, and surprising patterns within the data.

Tokenize.

Connect.

Rank.



Emcien's pattern detection engine is language and data agnostic. Given a data source, the software **tokenizes** the data into entities, assigning each a unique number.

The engine then compares how often those tokens appear together in the data set, **connecting** items on the graph by event and attribute correlation. These interconnected clusters are then represented through nodes on the graph, expressing the entries that occur together.

Once the data set is reproduced as a complex graph of interconnected nodes, patterns within the data are revealed. The software then uses Emcien's unique algorithms to **rank** these patterns on parameters including frequency, strength, and surprise.

Emcien's Pattern Detection  
Makes Data Analysis:

**Automatic • Fast • Complete**

Emcien uses graph analytics technology to offer complete and automatic analysis for any organization dealing with large or complex data problems. Our software reveals emerging trends, surprising connections, and important relationships that would otherwise remain hidden in tables or streams of unstructured data, automatically.



emcien

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# PATTERNS IN PRACTICE

Organizations use Emcien's pattern detection technologies to make sense of all kinds of data.

## Retail:



With EmcienPatterns POS transaction data, rewards card data, etc. becomes a complex picture of customers and their buying patterns. Retailers can use EmcienPatterns to maximize sales, streamline inventory, and elevate customer engagement.

## Network Analysis:



Emcien's solution for machine data helps network analysts keep complex networks up and running. By automatically analyzing the events that precede server failure and network problems EmcienScout for Machine Data can identify problems before service is interrupted, keeping networks running strong.

## Manufacturers:



Manufacturing complex, configurable products creates a complex data problem: If a product has tens or hundreds of options, from paint color to earth-moving attachments, how do you build the fewest products to satisfy the greatest number of customers? EmcienMix helps manufacturers boost sales and streamline inventory by making sense of configuration and sales data.

## E-tail:



Online retailers can use EmcienPatterns in two ways. Analysts can use the intuitive user interface to research customers' behavior or Emcien can set up a recommendation engine that will automatically suggest the most desirable items based on previous customer's purchasing habits.

## Intelligence/Law Enforcement:



EmcienScout was purpose-built law enforcement software. Agents and analysts use the technology to map complex bad-actor networks, getting an understanding of the overall sentiment while identifying the structure of the network including thought leaders, followers and even sleeper cells.

