sparkcognition™
Knowledge Representation

Transform Enterprise Knowledge Into Decision Intelligence

SparkCognition™ Knowledge Studio transforms human expertise and siloed data into a digital knowledge asset that helps employees make better and faster decisions.

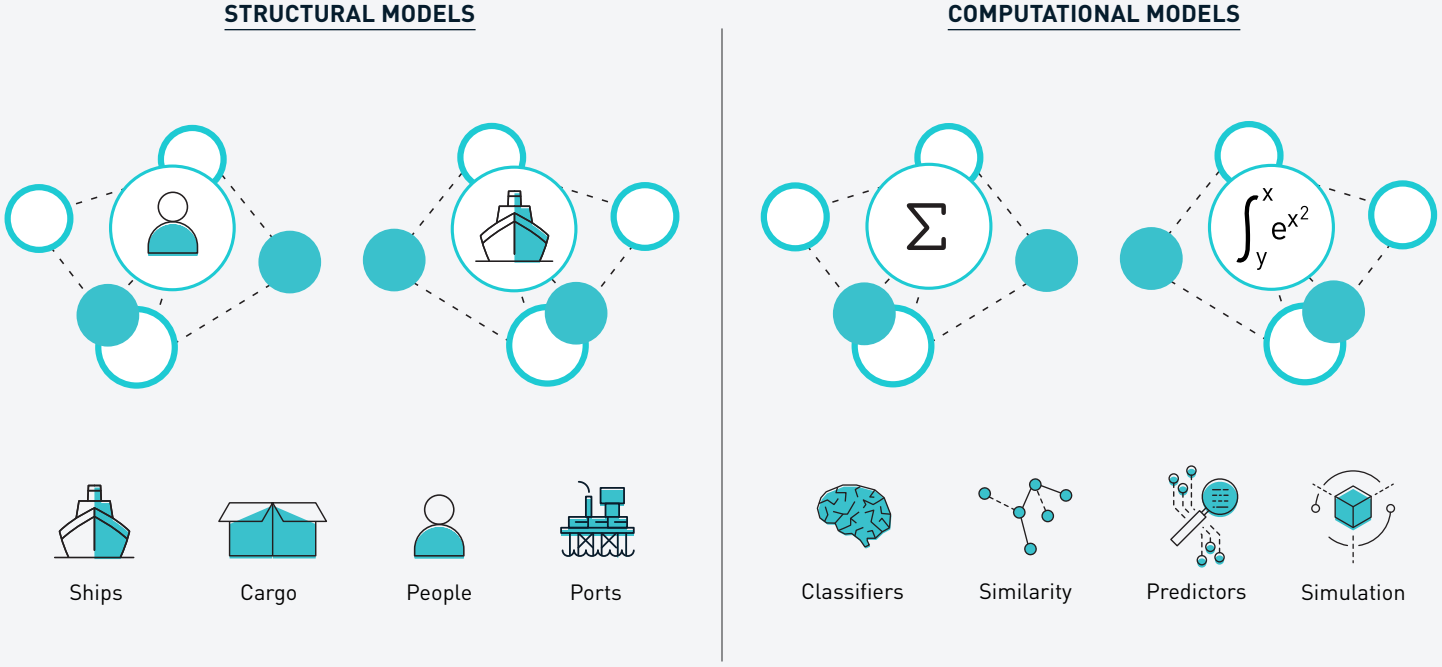
BUILDING KNOWLEDGE

SparkCognition Knowledge Studio enables enterprises to build and derive value from knowledge. At the core of the Knowledge Studio is the Computational Knowledge Graph (CKG), a unique technology that separates conceptual modeling and operations on the data from the data content itself. This separation provides fluidity of modeling within a graph and makes it possible to repurpose any data into a relevant structure. The product enables users to create structural models from enterprise knowledge and know-how from diverse sources (including tribal knowledge) and blend that with computational models that mathematically encode human expertise and are trained by subject matter experts (SMEs).

DIGITAL KNOWLEDGE LAYER

The blending of the knowledge and computational models creates the digital knowledge layer. This digital knowledge demonstrates the relationships and interdependencies between various operational concepts that are key drivers of operations, such as ships, cargo types, ports, contractual agreements, and more. For example, an SME working for an oil company can visually explore the knowledge graph to find all drilling-related incidents at specific depths by using Knowledge Studio's machine learning classification algorithm that labels the data into categories like wells, people, and activities.

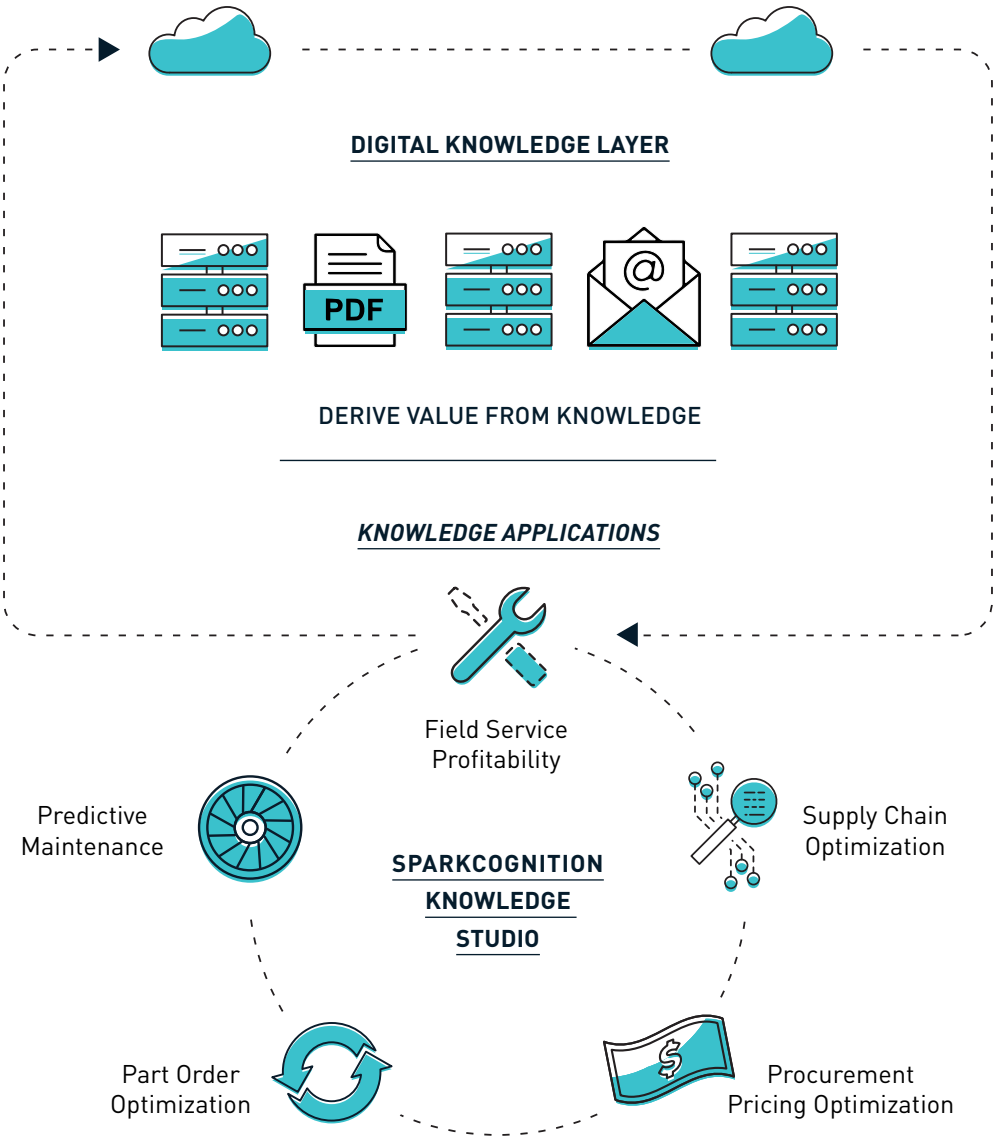
The digital knowledge layer enables SMEs to rapidly create cognitive applications that accelerate and enhance decision making.



AI-DRIVEN APPLICATIONS

Knowledge-based AI algorithms enable SMEs to build intelligent, modular applications at scale. An application designed for one use case can easily be extended and applied to other use cases.

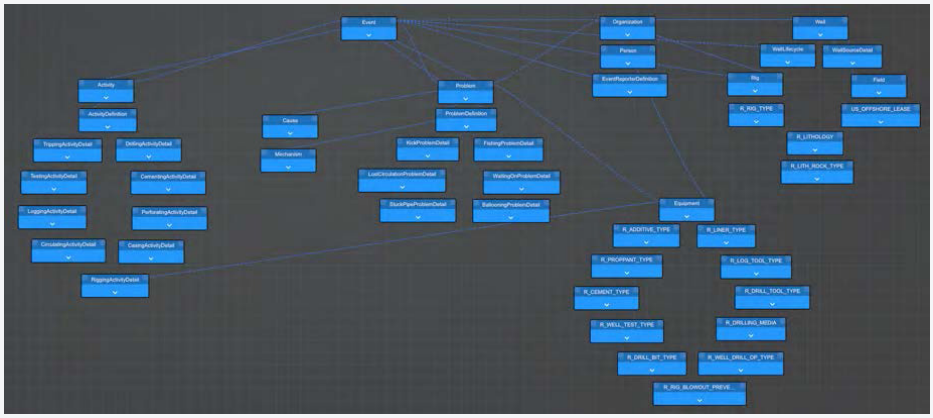
Contact SparkCognition today at info@sparkcognition.com



Knowledge Studio provides a self-service and highly intuitive interface including a variety of authoring experiences all in a low-code type of environment.

These include:

- Bayesian network assistant
- OLOG assistant
- Goal-oriented planning assistant (GOAP)



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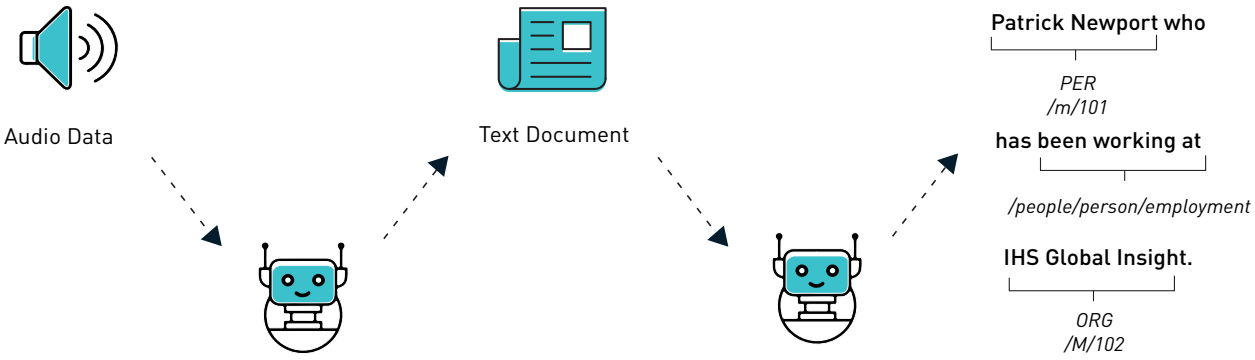
KNOWLEDGE BOTS

Knowledge bots listen to events and take autonomous action, such as performing classification or prediction, updating a simulation, or any arbitrary operation.



Knowledge Studio Bots that build knowledge and create the graph perform tasks that assist users in creating models. These capabilities bring knowledge into the graph by performing tasks such as:

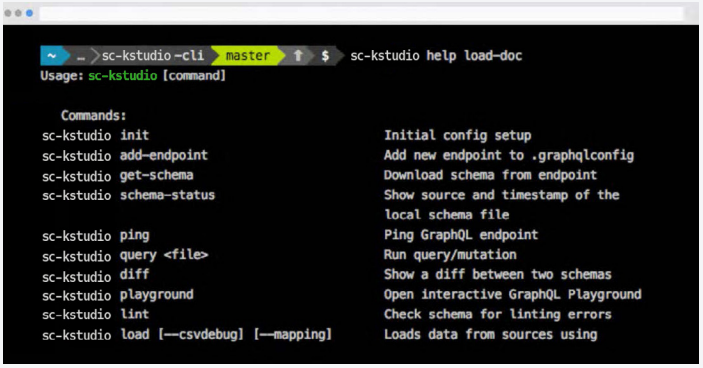
- Detecting when new data becomes available
- Detecting and normalizing datatypes across data
- Discovering relationships between data entities and properties in the graph

Knowledge Studio Bots that derive value from knowledge perform tasks such as:

- Automating building and selecting the optimum machine learning models appropriate for the targeted problem and data
- Extracting and normalizing units of measurement from disparate data
- Reasoning over knowledge by consuming existing or new services that expose knowledge

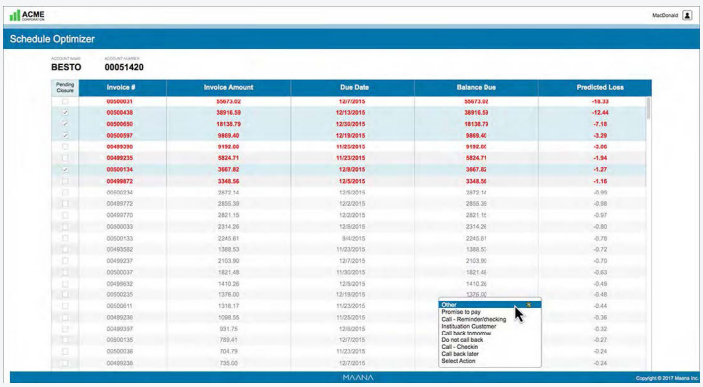
COMMAND LINE INTERFACE FOR DEVELOPERS

A custom command line interface (CLI) provides interactive and scripted access to many convenient system actions such as schema management, data loading, querying, and administration. The command line interface is easily extensible with custom plugins, making it simple for developers to add functionality.



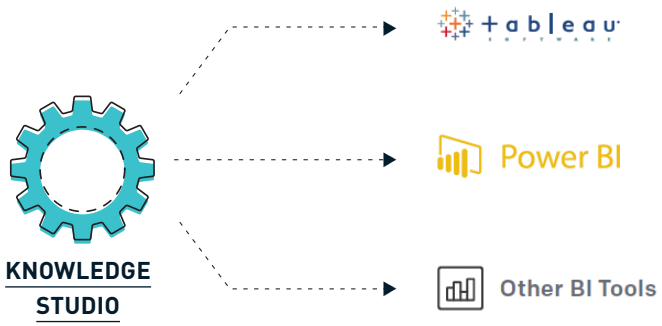
KNOWLEDGE APPLICATIONS

Knowledge Studio enables SMEs to build knowledge-based AI applications that help employees make better and faster decisions. These cognitive applications are powered by models that provide decision support for critical business functions to help employees optimize operations and workflows.



AD-HOC ANALYTICS

Knowledge Studio portal enables users to query, visually explore, and navigate the digital knowledge layer encapsulated in the Computational Knowledge Graph. Knowledge Studio can also be extended with popular data visualization software such as Tableau and Power BI for ad-hoc analytics.



ARCHITECTURE

Knowledge Studio's micro-services architecture uses GraphQL, which provides an increasingly popular interface to the Computational Knowledge Graph. The architecture also uses Docker containerization for enhanced agility, portability, and security, making it easy to extend the platform with additional components.

This architecture structures the development of applications as a collection of loosely coupled services based on lightweight protocols. It improves modularity and makes the application easier to develop, test, and maintain. It also parallelizes development by enabling small autonomous teams to develop, deploy, and scale their respective services independently.

Knowledge Studio's architecture makes it easy for developers to swap or add new microservices and provides the developer ecosystem with a wealth of established tools to help them in their development efforts.

docker GraphQL

CLOUD NATIVE

Knowledge Studio is cloud native, allowing enterprises to deploy the platform on Microsoft Azure for greater enterprise security, scalability, and control.

ABOUT SPARKCOGNITION

SparkCognition's award-winning AI solutions allow organizations to predict future outcomes, optimize processes, and prevent cyberattacks. We partner with the world's industry leaders to analyze, optimize, and learn from data, augment human intelligence, drive profitable growth, and achieve operational excellence. Our patented AI, machine learning, and natural language technologies lead the industry in innovation and accelerate digital transformation. Our solutions allow organizations to solve critical challenges—prevent unexpected downtime, maximize asset performance, optimize prices, and ensure worker safety while avoiding zero-day cyberattacks on essential IT and OT infrastructure. To learn more about how SparkCognition's AI solutions can unlock the power in your data, visit www.sparkcognition.com.