



Accelerate Healthcare Decision Making with MongoDB and Databricks

Solution Brief

Despite the staggering annual production of 1.2 billion clinical documents in the US, growing at a rate of 48% per year, an overwhelming 80% of this vital data remains unused in care management. Yet it holds valuable insights that could lead to better patient outcomes.

Exaflunce's cutting-edge unified data architecture, integrating Databricks, MongoDB, and custom accelerators, eliminates data silos, simplifies complexity, and reduces expenses that typically impede optimal analytics and AI initiatives. Our innovative Analytical Data Framework empowers healthcare organizations to achieve comprehensive data access, streamlined processing, and the application of AI and ML technologies, resulting in deep insights crucial for effective patient care.

Capabilities

Enterprise-grade performance architecture on MongoDB

Powered by document data model ideal for enterprise-grade applications with superior performance

Scalable solution with distributed processing on Spark

Efficient data processing with the flexibility to handle both document data models and columnar data such as Parquet

Streamlined model serving and management using Databricks mlflow

Managing machine learning lifecycle, including tracking experiments, packaging code into reproducible runs, and sharing and deploying models

Extend ML capabilities with AI tools of choice and ML frameworks

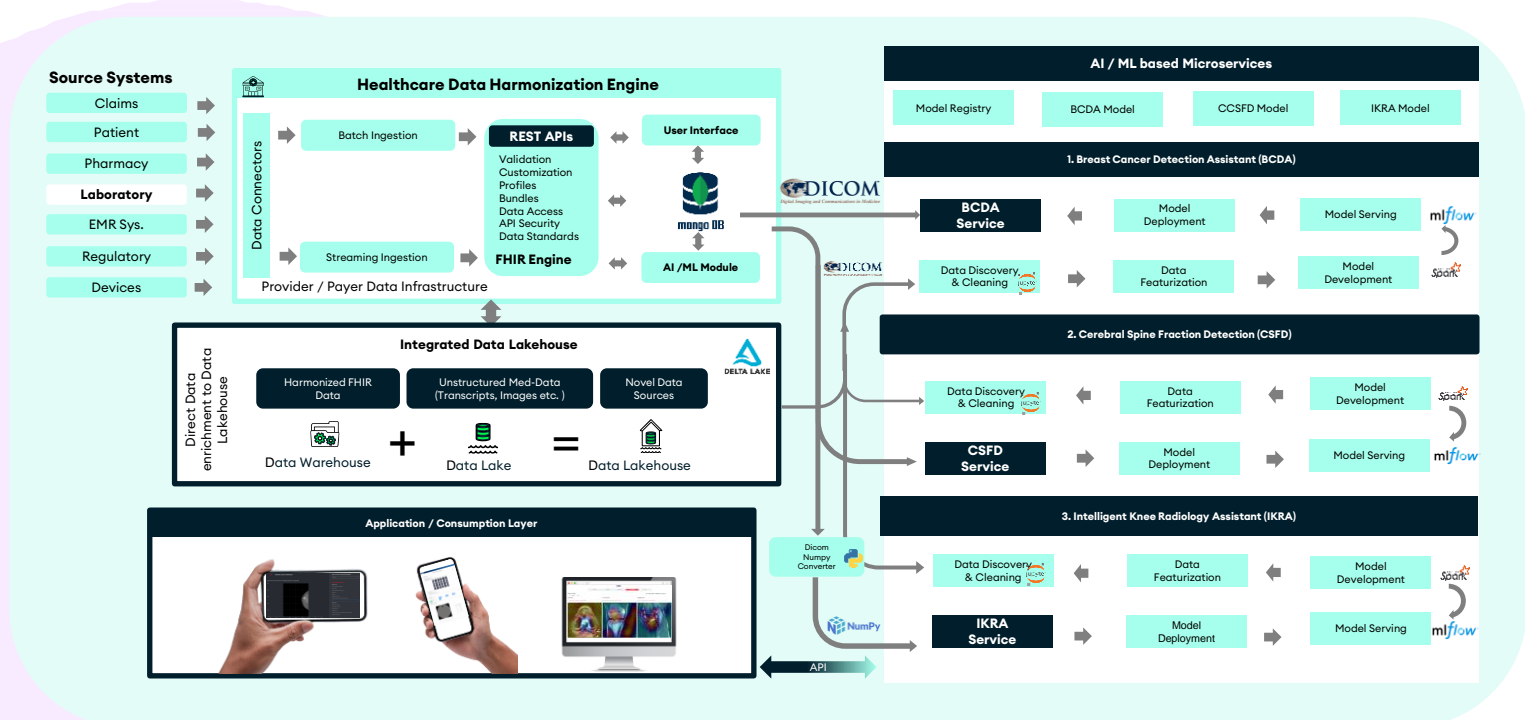
Compatible with a variety of ML frameworks, including TensorFlow, PyTorch, and Scikit-learn, and deep learning frameworks such as Keras and MXNet








How it works

A data harmonization engine ingests healthcare data from various sources and standardizes it to FHIR or other data standards. The standardized data is then stored in a MongoDB data warehouse or an equivalent technology ecosystem for payers or providers to power applications across the enterprise. Any data elements missed in the FHIR standardization are brought into a data lake, like Delta Lake, stored in a parquet format for easy exploration as needed.

Analytical use cases defined as part of the FHIR initiative are implemented using implementation guides (IGs). Our modular approach leverages the harmonized data to build individual microservices. Custom and specialized AI/ML-based microservices are developed by utilizing the explorable data residing in Delta Lake, accessed through Spark, with models served using mlflow.



Solution Benefits

-  Process and validate healthcare data with accuracy and speed
-  Analyze data and create individual care summaries
-  Create accurate and actionable insights from care summaries
-  Provide medical professionals with better access to accurate data, enabling them to spend more time with patients and significantly reduce misdiagnoses
-  Reduce healthcare waste, improve patient access, and drive down healthcare costs

Value Opportunities

Payer

Improve preventive care services, lower total healthcare costs, strengthen accurate member risk assessments to enhance plan value and member engagement

Provider

Reduce workloads with integrated data and AI/ML-enhanced clinical decision support

Patient

Empower patients with access and control of their data with modern patient engagement applications

Talk to a MongoDB expert or Exaflunce solution architect to find out how MongoDB and Databricks can strengthen AI/ML-based decision-making in your organization.