

## EXECUTIVE SUMMARY

ICI healthcare IT practice is composed of experts in health informatics, BI tools including Tableau/PowerBI, data integration and transformation with ETL/ELT tools including Informatica, Salesforce, AWS/Azure Cloud, data sciences, privacy & security compliance, patient advocacy, health administration, and health technology development and failsafe implementation. ICI also provides technical program management including system and data evaluation, data exchange assessments, healthcare data analytics use cases and infrastructure support, organizational review, and data hosting and distribution services that allow the seamless development of a comprehensive, secure, private, out-of-the-box informatics platform that can be used for diverse data-related products and services.

**Keywords:** Informatics, data registry, data analytics, PMP and Agile, Informatica ETL, Tableau/PowerBI, AWS, Azure, .NET, care coordination, public health surveillance, Linkage, C++/C#, .Net Core, Python, R, SQL Server/MySQL/Oracle/IBM, AWS/GraphQL, AppSync, API Gateway, Lambda, EC2, IAM, IaaS, SaaS, Agile Methodologies, GIT/Bitbucket

Our team is composed of experts in Clinical Sciences, Statistical Techniques, Academic Research, Health Informatics, AI/ML and Analytics, Health Policy, Cloud Computing, Data Governance, Data Ops, UX/UI, and Web-based technologies.

### *Core/Platform/Cloud*

- **Infrastructure & Operations (IaC) - CloudOps:** network, compute, and storage, including connectivity to on-prem resources and user/affiliate/mobile endpoints. In addition, automated provisioning of cloud services (IaC) along with tagging and cost management.
- **Infrastructure & Operations (IaC) - DevOps/CICD:** Environment, tools, and configuration for development, testing, and deployment.
- **Observability:** Visibility using Application & Performance Management (APM) and aggregation of logs, metrics, and alerts.
- **Single Sign-On (SSO):** Approach for SSO and role-based access controls with integration between Identity Access Management (IAM), Active Directory (AD) and a Gateway.
- **Applications Platform:** Kubernetes/Docker infrastructure or managed services (Fargate) for continuous loads and Serverless (Lambda) services for fluctuating loads

### *Data/Model Management & Operations*

- **Lake - Pipelines/ETL/ELT:** Integration pipelines to a variety of data formats and sources, with embedded rules for cleansing, enrichment, and standardization.
- **DataOps & ModelOps:** Managing the Data and ML Model lifecycle are a core feature and strength of the Databricks platform. The Unity Catalog offers a centralized metadata layer with access controls for all data assets. And the Feature Store and MLflow components support the entire lifecycle of training, serving and monitoring ML models.

### *Design/Unified Experience/Applications*

- **Applications:** Analytics and ML applications, packaged and delivered as containerized services.
- **Unified UX/UI:** A portal-based user experience with role-based access control and personalization.

#### *Analytics/AI/ML/Data Science*

- **Machine Learning (ML) and Analytics:** Artificial intelligence, machine learning, natural language processing, predictive analytics, and data mining. We build software with advanced and custom data algorithms that can impact all aspects of data flow and business processes. Data science solutions can accelerate effective data storage, retrieval and management.
- **Platforms:** Databricks/Spark offers a fully integrated set of tools to support the entire lifecycle, including the use of streaming data for model training and analytics. In addition, the platform is open - allowing data scientists to utilize a broad set of libraries and tools available for data analysis and model development.
- **Business Intelligence:** Automated pipelines to process, label and transform an organization's data for use in machine learning. Machine learning solutions ensure fast and reliable data analytics and predictive tools. Machine learning solutions utilize regression, classification, clustering, recommendation, and NLP. Insight mining, business intelligence and reporting solutions to visualize data and leverage it to improve business performance.

#### *Program Management*

- **Certified PMP:** Full project management lifecycle processes at the task level and ensure that each lifecycle phase produces high-quality interim results that form the basis for future work. Relevant SOPs and document templates to ensure methodologies, processes, and deliverables are repeatable and reliable.
- **Domain experts:** To help streamline the contextual parametrization for sentiment analysis to account for textual data feeds. Combining Natural Language Processing (NLP), text analysis, and computational linguistics for trend mining and alerting. Based on patterns/metrics continuous data streams can be configured with the necessary monitoring and alerts.