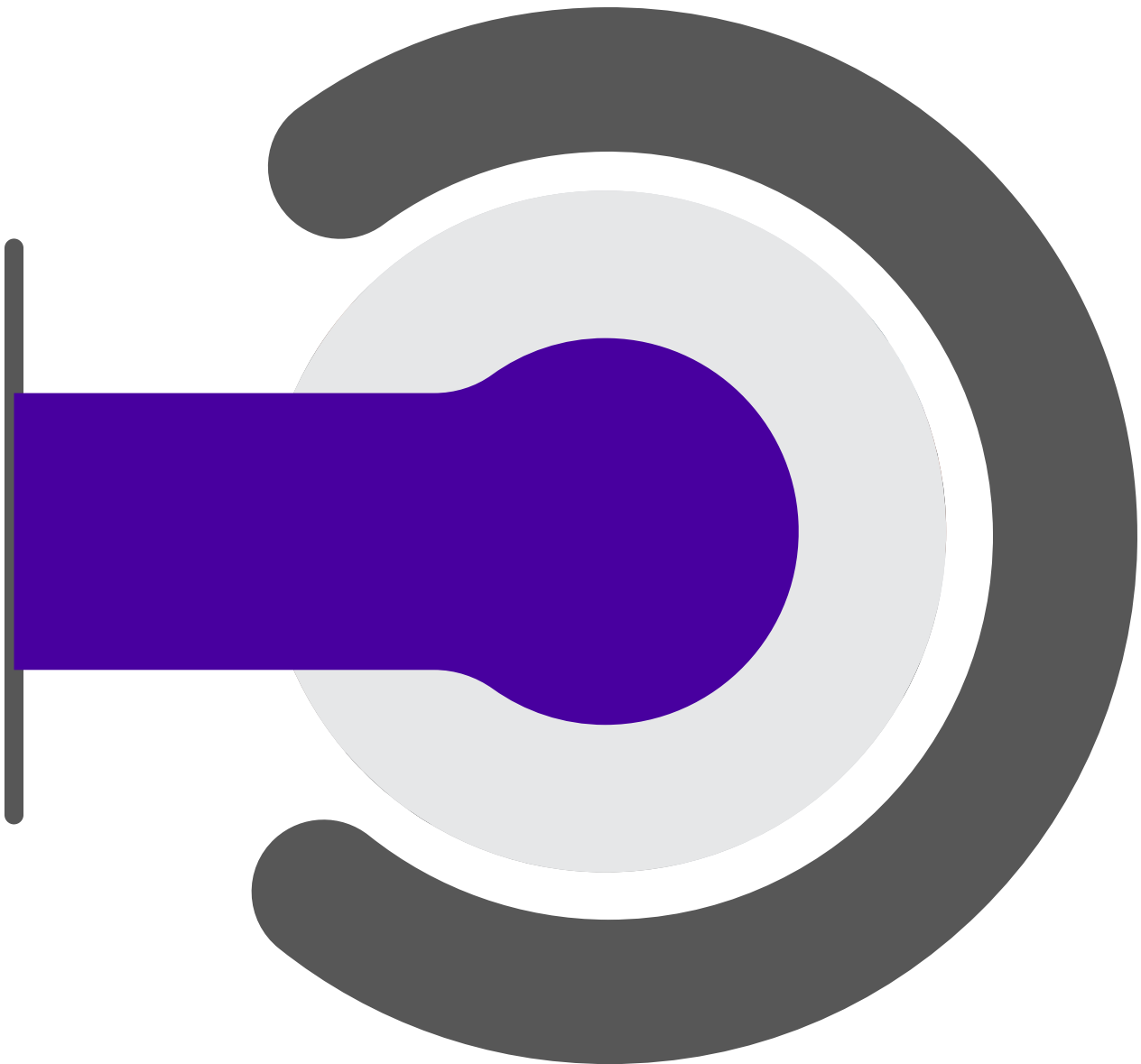




TRANSFORMING **HEALTHCARE WITH** **MICROSOFT FABRIC**

Healthcare Optimization with Microsoft Fabric

In today's fast-evolving healthcare landscape, managing and leveraging the growing volume of patient data has become a critical challenge for healthcare organizations. Data is often fragmented across multiple systems, including electronic health records (EHRs), lab results, and patient monitoring devices, making it difficult to integrate and analyze holistically. The reliance on manual processes to manage these data streams can result in errors, delays, and compliance risks. These inefficiencies impact the ability to deliver timely, data-driven decisions, ultimately affecting patient care and safety.

Additionally, the need for real-time insights to improve patient outcomes and meet regulatory requirements is paramount. With disconnected systems, healthcare professionals spend more time managing data than using it to provide personalized, proactive care. As the volume of healthcare data grows, so does the complexity of maintaining data accuracy, integrity, and accessibility—leaving organizations vulnerable to operational bottlenecks and suboptimal patient outcomes.



Optimize Diabetes Risk Prediction

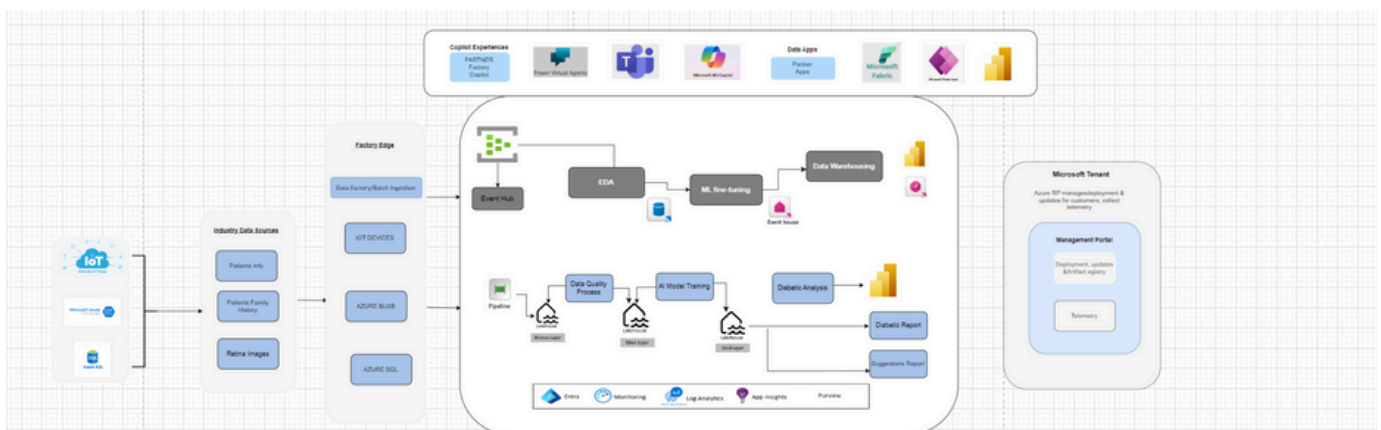
The healthcare industry is constantly seeking ways to enhance patient care through improved data management and advanced technology. One of the areas where Quadrant has made significant strides is in diabetes management. Diabetes is a global health concern , and we have developed solutions using Microsoft Fabric to address diabetes risk prediction, improving patient outcomes and overall healthcare efficiency.

Healthcare Potential with Data Integration

In the healthcare industry, data is the key to improving patient outcomes and operational efficiency. Microsoft Fabric offers a unified platform that seamlessly integrates data engineering, data science, and business intelligence tools, empowering healthcare organizations to turn raw data into actionable insights. At Quadrant Technologies, we combine our deep expertise with Microsoft Fabric to help healthcare providers and organizations unlock the full potential of their data, enabling them to deliver better care, faster.

Empowering Healthcare Data Engineers and Clinicians

Microsoft Fabric simplifies the management of complex healthcare data, allowing data engineers to efficiently handle and transform large datasets. This streamlining is crucial for healthcare providers who need accurate, up- to-date information to make informed decisions. With Quadrant Technologies' expertise, we ensure that these processes are optimized, providing clinicians and healthcare administrators with intuitive visualizations and actionable insights that support better patient outcomes.



Architecture Overview

● **Data Ingestion (Bronze Layer)**

Tools: Data Factory

Description: Microsoft Fabric facilitates the ingestion of raw healthcare data from various sources, such as electronic health records (EHRs) and medical databases. Quadrant Technologies enhances this process, ensuring patient data, including age, BMI, and glucose levels, is centralized for streamlined access and processing.

● **Data Transformation and Cleansing (Silver Layer)**

Tools: Notebooks, Dataflow

Description: Microsoft Fabric provides the tools for cleaning and transforming healthcare data. Quadrant Technologies ensures that patient data is meticulously handled, addressing missing values and engineering features to ensure the data is ready for reliable analysis.

● **Data Modeling and Aggregation (Gold Layer)**

Tools: Dataflow

Description: Within Microsoft Fabric, healthcare data is aggregated and modeled to prepare it for machine learning. Quadrant Technologies optimizes these processes, ensuring that predictive models are accurate and relevant to healthcare needs.

● **Machine Learning and Model Training**

Tools: Azure Machine Learning, Notebooks

Description: Microsoft Fabric supports the development and training of machine learning models that predict health risks such as diabetes. Quadrant Technologies fine-tunes these models to meet healthcare-specific requirements, applying advanced algorithms to predict patient outcomes with precision.

Predictions and Recommendations

Optimize Diabetes Risk Prediction: by utilizing batch processing of individual diabetes risk data through integrated fabric services. This approach ensures proactive identification of diabetes risks, improving overall patient health outcomes.

Improve Diabetes Prediction Accuracy: by leveraging real-time data and AI models. This enhances risk assessment capabilities, reduces the likelihood of developing diabetes, and strengthens preventive healthcare strategies.

Technical Advancements

Medallion Architecture: Streamlined data processing across Bronze, Silver, and Gold layers, ensuring efficient data management and analysis.

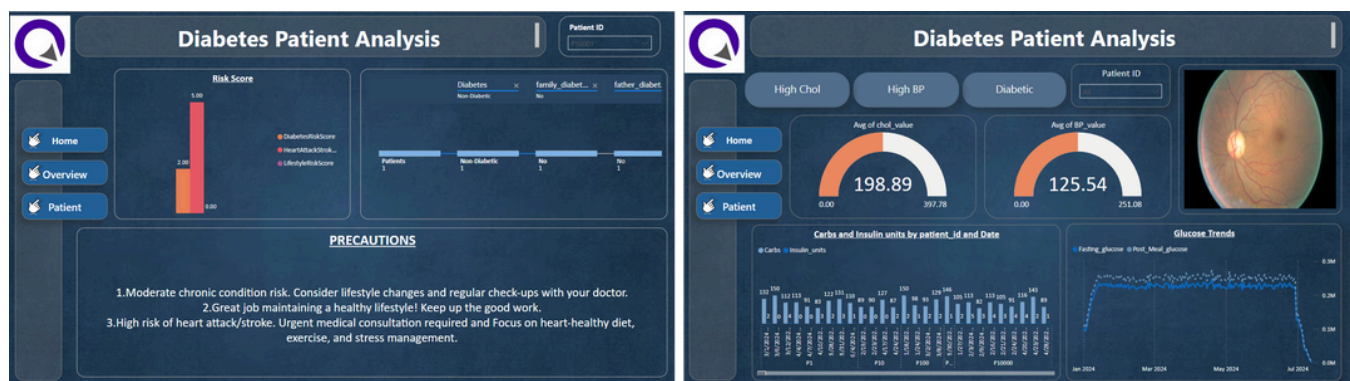
MS Purview: Enhanced data governance and compliance, ensuring secure management of sensitive healthcare data.

GenAI Capabilities: AI-powered chatbots for seamless patient service and interaction.
Diabetes Prediction Models: AI-driven models for predicting individuals at risk of diabetes, offering real-time and proactive healthcare insights.

Multi-Language BOT Support: AI-powered bots provide seamless patient interactions across multiple languages.

Insightful Dashboards

Explore our self-service dashboards to gain real-time insights into financial data and see how Microsoft Fabric can enhance your operations and decision-making processes.



Integrating Azure Service Bus in Healthcare

We integrate Azure Service Bus with Microsoft Fabric to handle real-time messaging from various healthcare data sources, including IoT devices and EHR systems. This integration ensures that healthcare data is processed in real-time, providing timely and accurate insights for patient care.

Benefits: Microsoft Fabric with Quadrant Technologies for Healthcare

01

Healthcare-Focused Integration: Microsoft Fabric offers a comprehensive platform for managing healthcare data, and Quadrant Technologies tailors these capabilities to meet the unique needs of healthcare providers.

02

Scalability and Efficiency: Quadrant Technologies leverages Microsoft Fabric's cloud-native capabilities to scale healthcare solutions, accommodating large volumes of patient data while streamlining data processing and analysis.

03

Scalability and Efficiency:

Microsoft Fabric fosters collaboration among healthcare data engineers, clinicians, and administrators. Quadrant Technologies ensures that these teams can work together seamlessly within a single, integrated platform, improving patient care coordination.



Summary

The Diabetes Prediction use case demonstrates how Microsoft Fabric, combined with Quadrant Technologies' healthcare expertise, offers a robust solution for healthcare data challenges. By integrating data processing and machine learning, we deliver accurate predictions and actionable insights that enhance patient care and operational efficiency.

Explore our offerings

BOT Platform: Automate routine healthcare processes with AI-driven bots, enhancing efficiency and enabling medical professionals to focus on patient care.

Microsoft Fabric | 3-Week Proof of Concept: Experience a custom proof of concept to explore how Microsoft Fabric can benefit your healthcare data management and analytics.





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