

23MCT305

Data Analytics in Automation System

Healthcare Automation

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Course: 23MCT305 - Data Analytics in Automation System

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Introduction to Data Analytics in Healthcare Automation



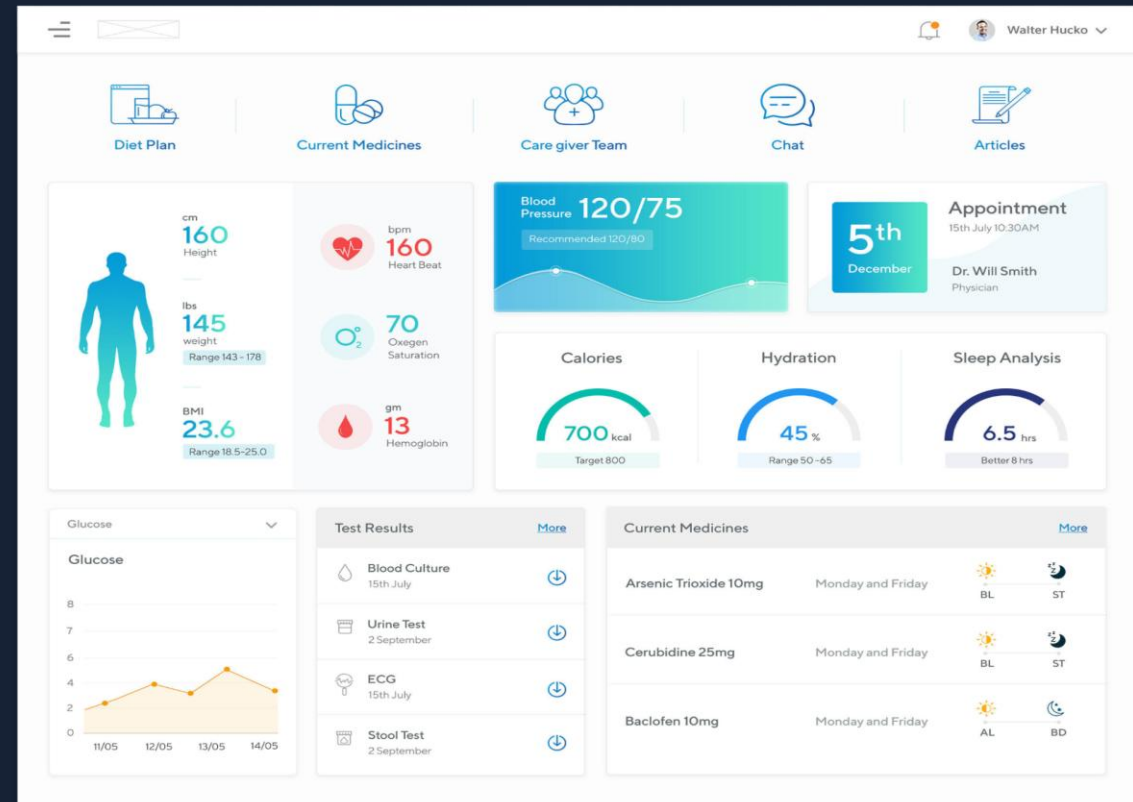
What is Data Analytics in Healthcare?



Integration with Automation Systems



Importance in Modern Healthcare



Key Components of Healthcare Automation



Robotics & Automated Systems



Artificial Intelligence & Machine Learning



IoT Medical Devices



Smart Diagnostics



 Data Collection & Storage

 Processing & Analysis

 Visualization & Reporting

 Predictive Modeling

4 Real-life Applications of Predictive Analytics in Healthcare

Predictive analytics model for reducing MRI appointment no-shows

Tracking and mitigating the spread of COVID-19

Predictive analytics preparing for future healthcare trends and events

Enhancing chronic disease management and prevention



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Predictive Analytics in Healthcare

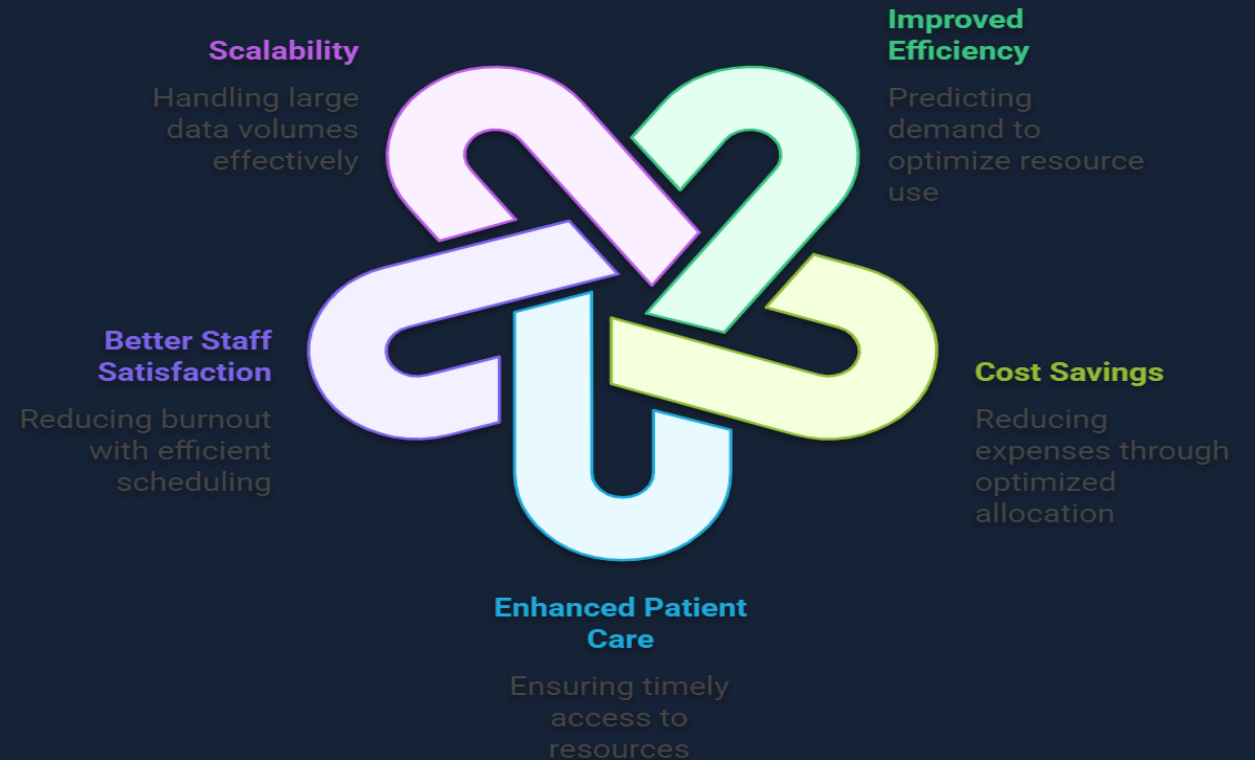
-  Automated Diagnostics
-  Real-time Patient Monitoring
-  Drug Discovery & Development
-  Resource Optimization



Benefits of Data-Driven Healthcare Automation

-  Improved Patient Outcomes
-  Cost Reduction
-  Enhanced Operational Efficiency
-  Reduced Medical Errors
-  Personalized Treatment Plans

Benefits of AI-Driven Predictive Analytics



Data Analytics in Healthcare Automation



Components

Robotics • AI • IoT • ML



Applications

Diagnostics • Monitoring • Research



Benefits

Efficiency • Accuracy • Cost



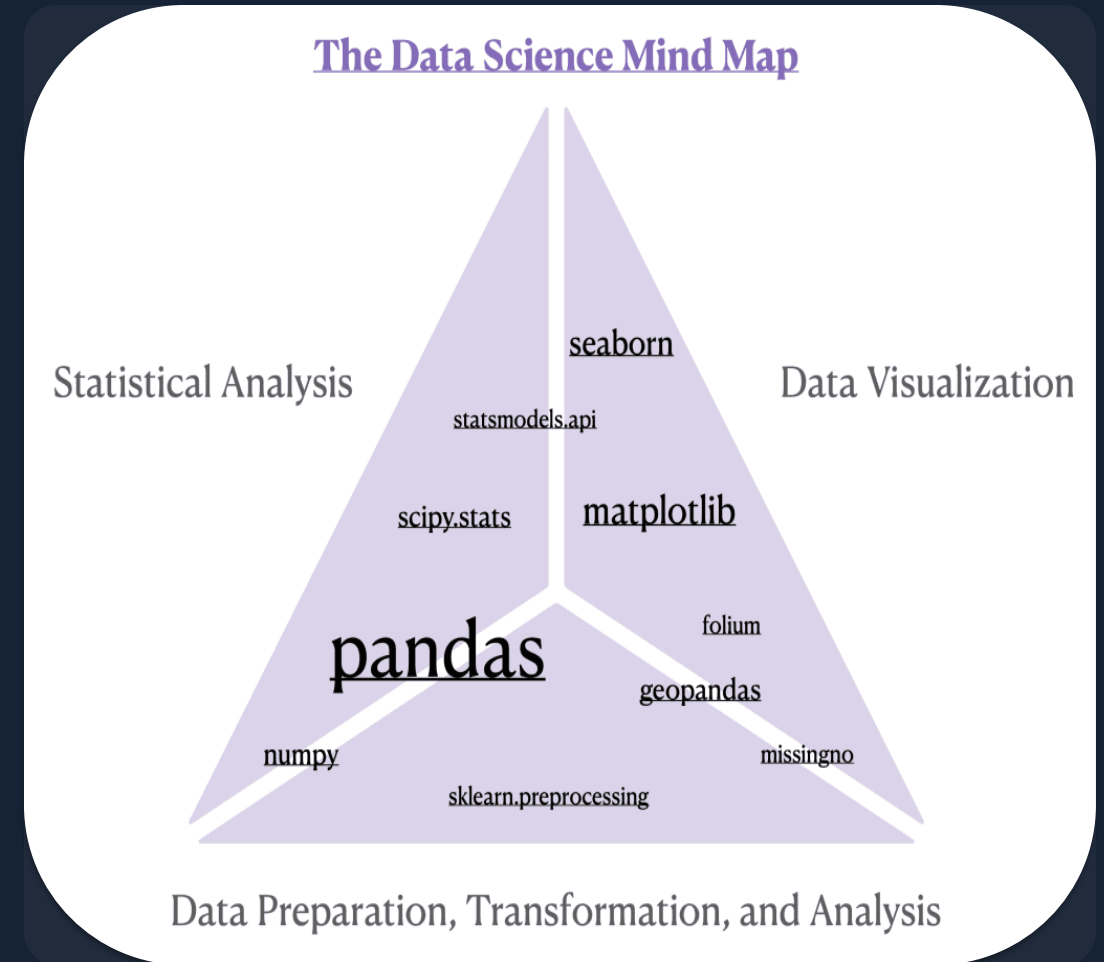
Technologies





Big Data • Cloud • Neural Networks



Challenges

Data Security • Integration • Compliance



-  Robotic Surgery Systems
-  AI-Powered Diagnostic Tools
-  Automated Patient Care Systems
-  Smart Hospital Implementations



Recap: Key Learning Points



Data analytics enables intelligent healthcare automation



AI and ML drive predictive capabilities



Robotics assist in precise medical procedures



IoT devices enable real-time monitoring



Benefits include improved outcomes and efficiency



Summary & Future Trends



Data analytics revolutionizing healthcare



Integration with emerging technologies



Future: Precision Medicine, Edge Computing, 5G Healthcare



Key Takeaway: Data-driven automation improves patient care

