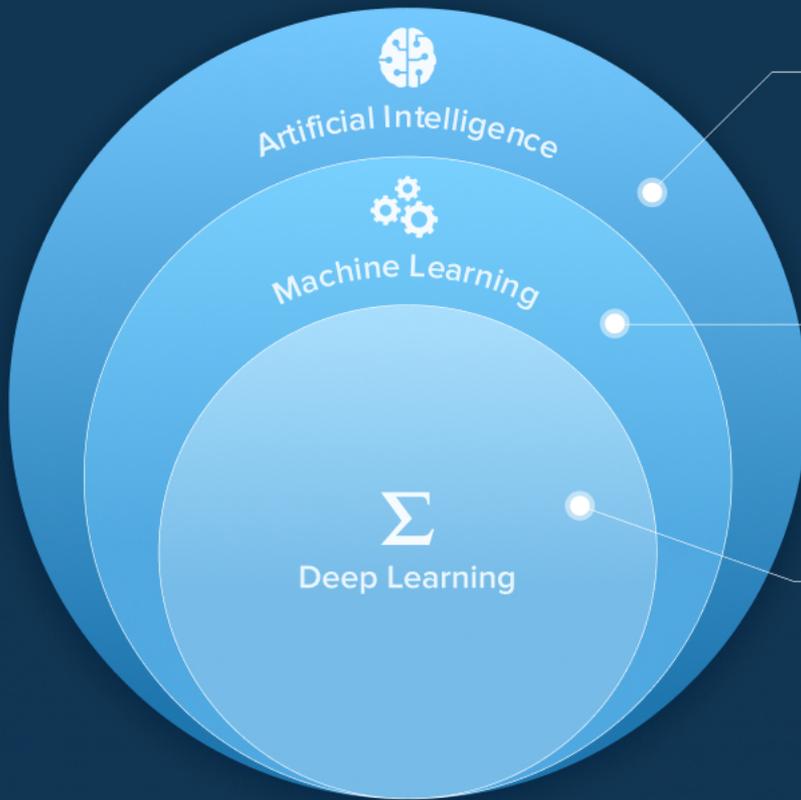


# TOP MACHINE LEARNING USE CASES IN HEALTHCARE IN 2023



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# Big Technology Overview



## ARTIFICIAL INTELLIGENCE

An umbrella term that refers to mimicking human intelligence processes by computer systems.

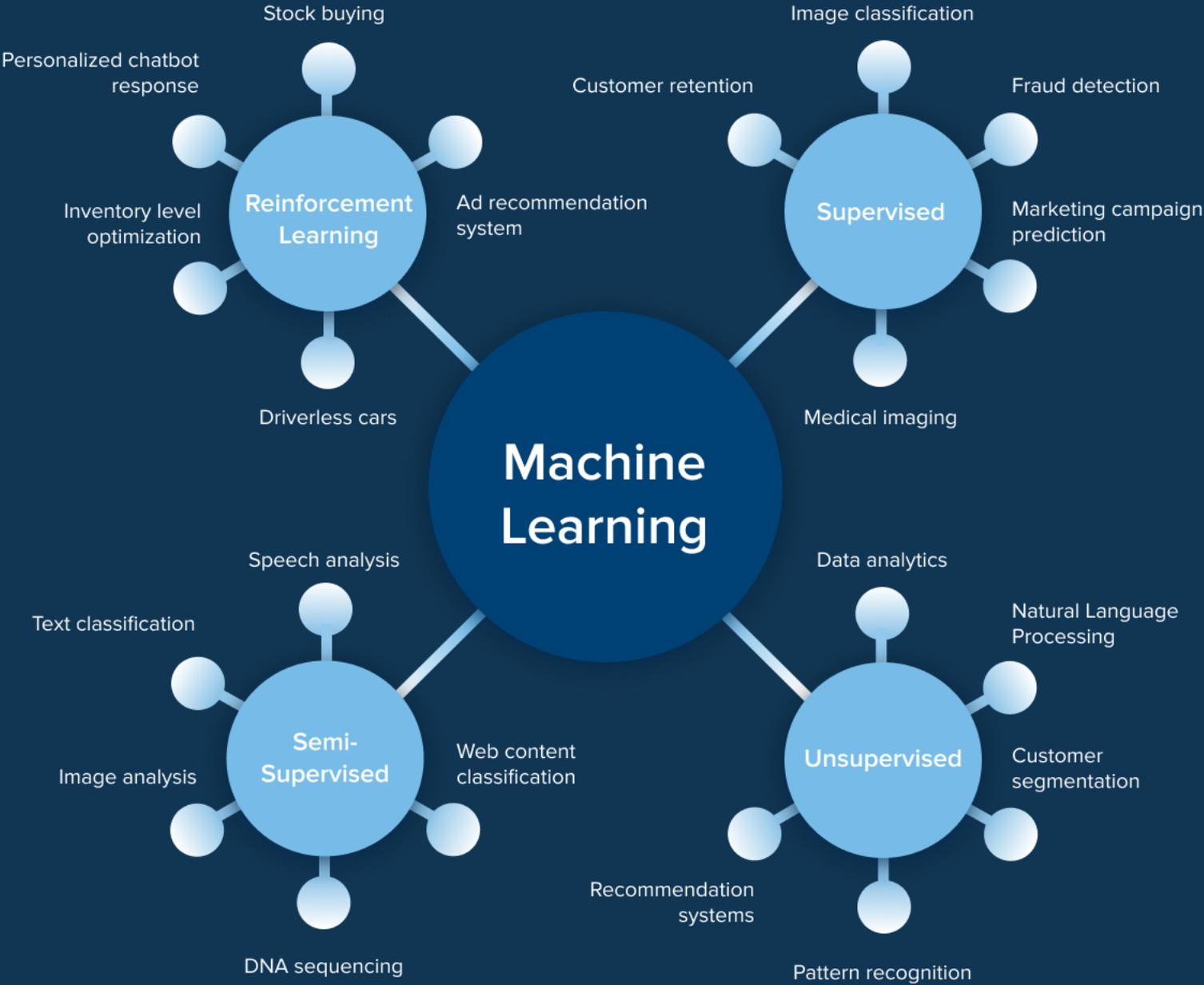
## MACHINE LEARNING

A subset of AI that allows for designing and developing algorithms that can learn from data and make predictions.

## DEEP LEARNING

A branch of ML based on artificial neural networks that can emulate human-decision making capabilities.

# Machine Learning Algorithms and Use Cases



# Machine Learning Market



## Machine Learning Market 2022 - 2030

Market Size	CAGR	Dominating Region	Forecast Period
\$21.17 Billion	38.8%	North America	2022 - 2030

# Significance of Machine Learning in Healthcare

**\$22.4 billion**

Market size value in 2023

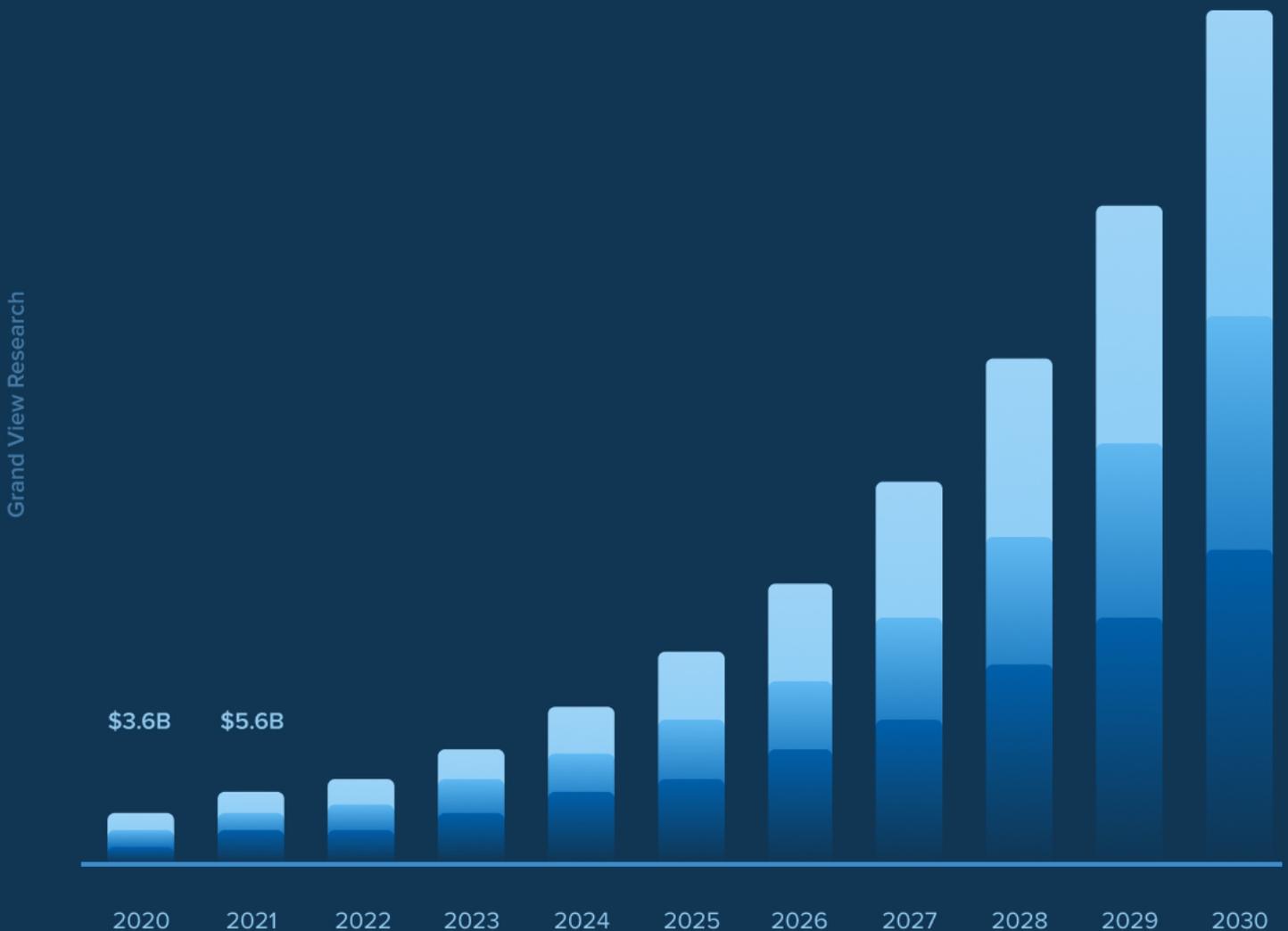
*Grand View Research*

**37.5%**

Growth rate from 2023 to 2030

*Grand View Research*

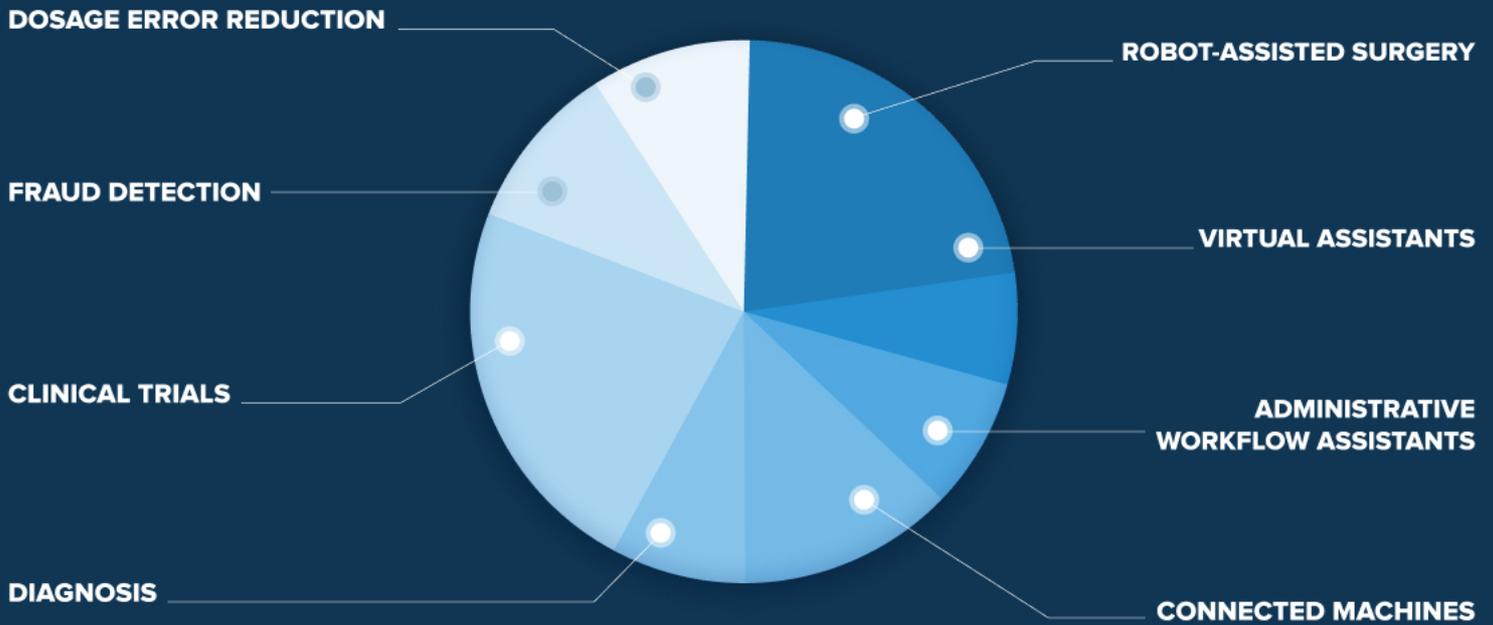
The availability of Big data and the demand to reduce costs are expected to drive the market during the forecast period.



# Healthcare Use Cases for Machine Learning by Area

 <b>Clinical Practice</b>	 <b>Biomedical Research</b>	 <b>Healthcare Administration</b>
Radiology	Clinical Research	Scheduling
Mental Health	Drug Discovery	Inventory Management
Home Care	Clinical Trials	Detection of Fraudulent Activity
Emergency Medicine	Personalized Medicine	Patient Flow Management
Digital Pathology		Healthcare Audits
Cardiology		
Risk Prediction		

# Top Machine Learning Use Cases in Healthcare by Share



## State of Healthcare Without Automation

### Increasing Healthcare Costs

Persist to rise by 6% in 2023 with administrative costs taking up to 30% of overall expenses

### Care Model Constraints

Limit granular insights into the care needs of each patient

### Complexity of Drug Discovery

Pressures the industry due to the long and high-cost process of discovery

# AI-Enabled State in Healthcare



## Reduced Costs of Care

Due to streamlined administrative tasks, higher efficiency, and real-time insights



## Precision Medicine

Driven by ML algorithms to identify the effective approach for each patient based on multiple factors



## Better Medicines Faster

Thanks to AI analyzing vast reams of data, uncovering patterns, and predicting effects.

## Case Study

Augmented ED (Emergency department) needs analysis based on Artificial Intelligence

01

### INGEST, TRANSFORM AND LINK DATA SETS

- Historical medical claims
- Demographic data
- Socioeconomic data and consumer factors

02

### MERGE AND EVALUATE THE DATA

- Determine and classify the most accurate procedure and diagnosis codes
- Create a time-series format for claims history
- Generate enhanced predictive features

03

### BUILD PREDICTIVE MODEL

- Supervised learning for predicting utilization patterns
- Causal inference to predict impact intervention
- Unsupervised learning to validate clinical logic

McKinsey



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