TOP MACHINE LEARNING USE CASES IN FINANCE AND BANKING IN 2023
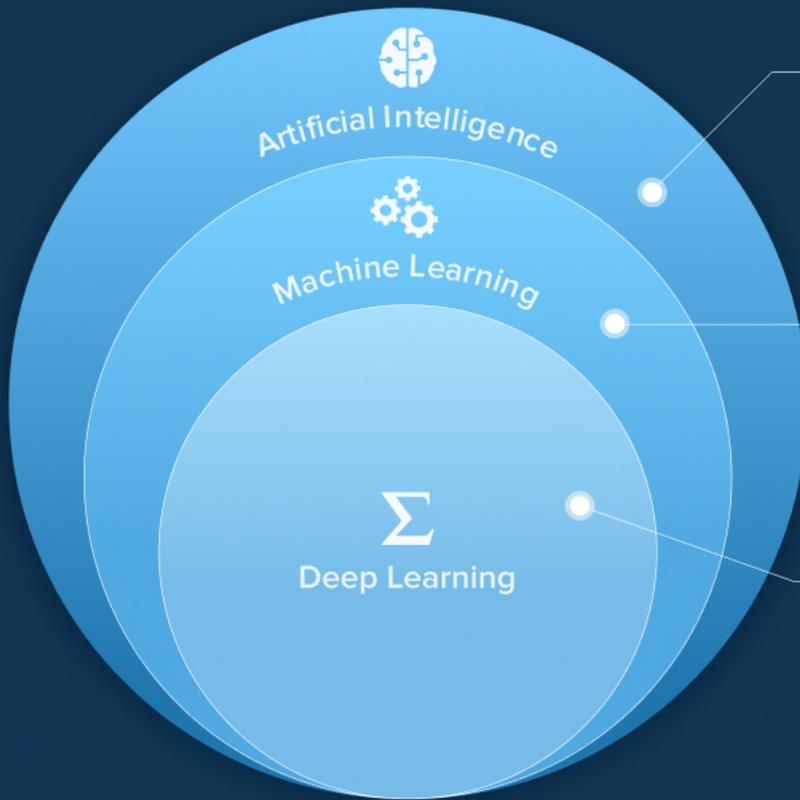
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Big Technology Overview

Artificial Intelligence

Machine Learning

Σ

Deep Learning

ARTIFICIAL INTELLIGENCE

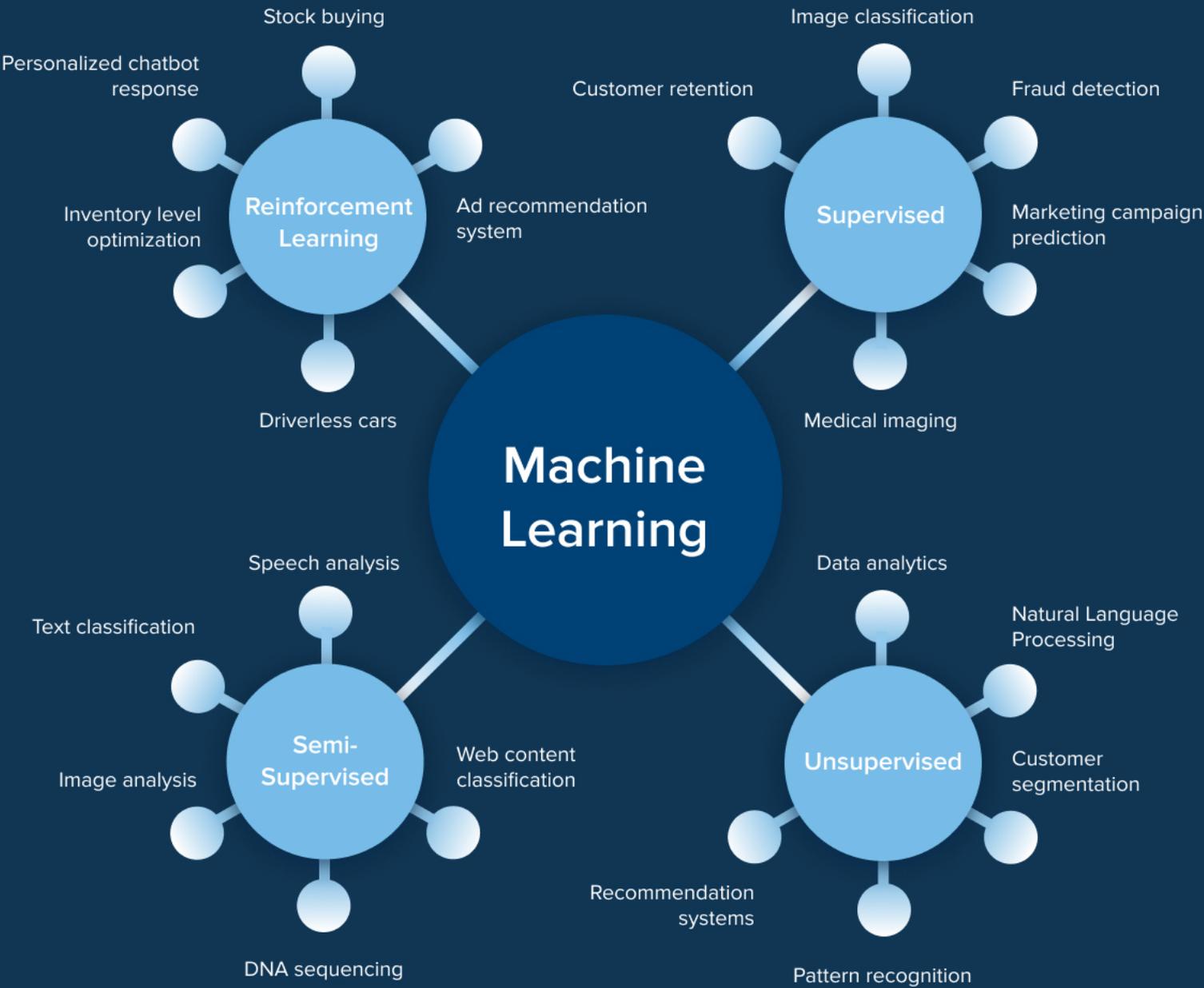An umbrella term that refers to mimicking human intelligence processes by computer systems.

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

Reinforcement Learning
- Stock buying
- Personalized chatbot response
- Inventory level optimization
- Ad recommendation system
- Driverless cars

Supervised
- Image classification
- Customer retention
- Fraud detection
- Marketing campaign prediction
- Medical imaging

Machine Learning

Semi-Supervised
- Speech analysis
- Text classification
- Image analysis
- Web content classification
- DNA sequencing

Unsupervised
- Data analytics
- Natural Language Processing
- Customer segmentation
- Recommendation systems
- Pattern recognition

Machine Learning Market

Machine Learning Market			
By Technology	**By Industry Vertical**	**By Deployment**	**By End-User**
Image Processing	Marketing & Advertising	On-Premise	Enterprises
Speech Recognition	E-Commerce & Retail	Cloud	SMEs
Natural Language Processing	Banking & Finance		
Data Analytics	Manufacturing		
Video Recognition	Healthcare		
	Agriculture		

Machine Learning Market 2022 - 2030

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

A Glimpse at Machine Learning in Finance and Banking

$1 trillion
Potential value of implementing AI and analytics in banking.

McKinsey

$64.03 billion
The market size by 2030.

Allied Market Research

75%
Number of banks with over $100 billion in assets currently implementing AI strategies.

AI in Fintech Market - Growth Rate by Region (2022-2027)

- High
- Medium
- Low

Mordor Intelligence

How Computer Intelligence Addresses Challenges in Finance & Banking

COMPLIANCE EXCELLENCE

Challenges

- Banks and financial organizations confront evolving regulatory requirements
- Compliance and operational risk programs operate in silos
- Data privacy concerns continue to generate strategic business challenges

How machine learning can help

- Scans and analyzes any volume of regulatory activity
- Provides an integrated view of data and uniform compliance coverage
- Offers safeguards to ensure confidentiality, integrity, and availability of data

RISE IN FRAUD ATTEMPTS

Challenges

- Banks lament an increasing number of frauds
- Time and money are wasted on false positives during KYC
- Manual AML compliance decisions are costly

How machine learning can help

- Amplifies security posture and identifies anomalous behavior.
- Enables automated, ML-based KYC processes
- Accelerates AML processes across financial services

CHANGING CONSUMER BEHAVIOR

Challenges

- Customers prefer financial services based on personalization
- Self-service banking has become a staple
- Customers are willing to switch to digital-only wealth management

How machine learning can help

- Powers proactive, hyper-personalized experience
- Fuels virtual assistants for self-service
- Offers savings and investment recommendations

Top Finance Machine Learning Use Cases

Tax & Legal

Analyzing the probability of actual non-compliance with tax law rules

Predicting payment behavior, contract analysis, risk assessment

Risk Advisory

Marketing & Sales

Optimizing sales and marketing budgets

Improving the accuracy and reliability of audit reports

Audit

Cybersecurity

Detecting fraud patterns and cybersecurity attacks

Automating portfolio management, algorithmic trading, capital budgeting

Financial Analysis

Main Application Areas for Machine Learning in Banking

Customer Onboarding
ML-enabled verification, KYC, and document management

AML Systems
ML-based customer identification and transaction monitoring

Credit Underwriting
Smart credit risk analysis and automated loan decisioning

Day-to-day Banking
Improving compliance, document management, retention, and sales
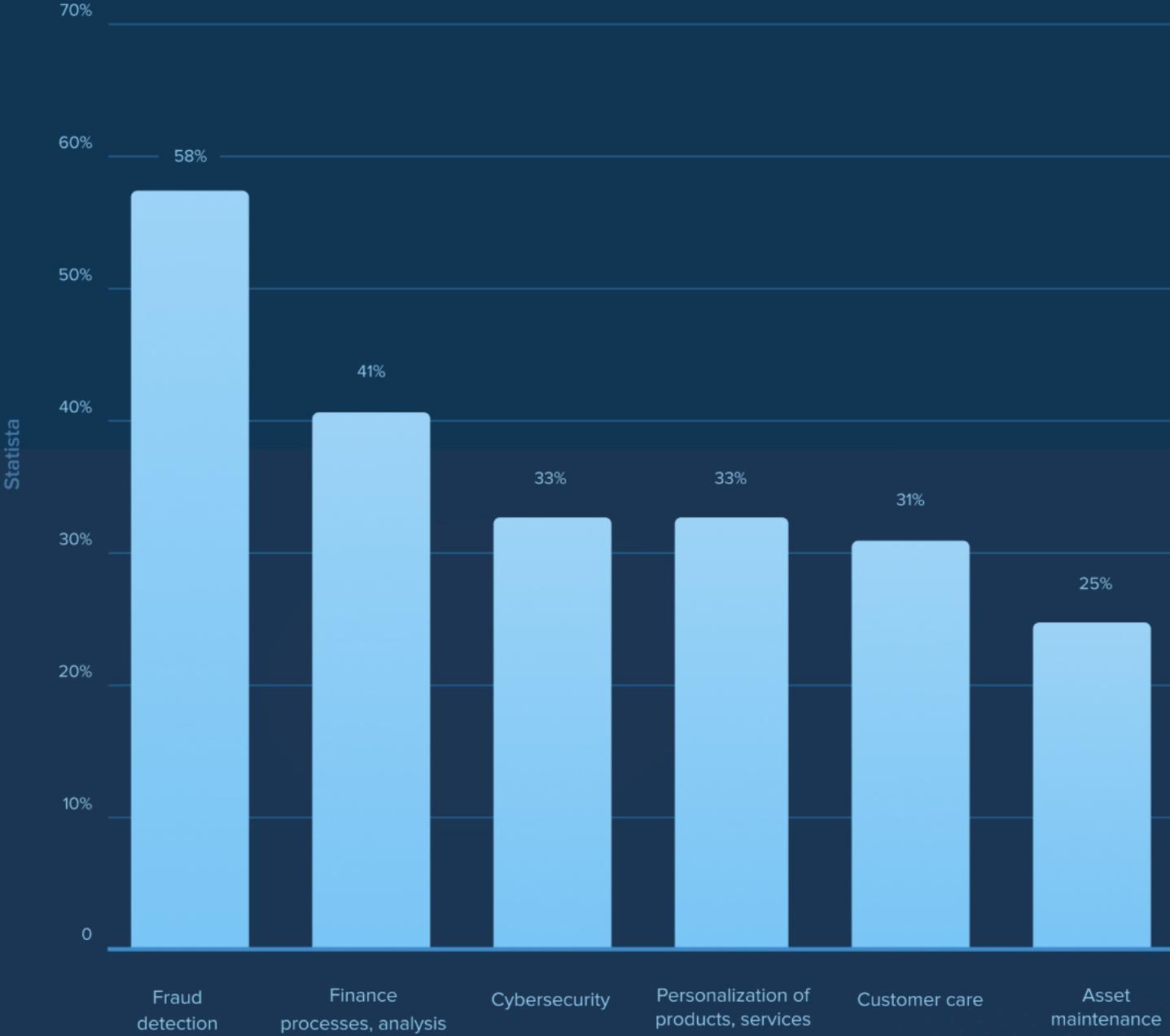
Fraud Detection
Identifying fraud and fortifying cybersecurity

Front Office
Conversational bots, targeted banking offers

Applications Leading the ML Adoption in the Financial Sector

Statista

70%	
60%	58%
50%	
40%	41%
	33% 33%
30%	31%
	25%
20%	
10%	
0	

Fraud detection — 58%
Finance processes, analysis — 41%
Cybersecurity — 33%
Personalization of products, services — 33%
Customer care — 31%
Asset maintenance — 25%

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info@indatalabs.com