

# Machine Learning

## | Applications

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# | Applications

- Facebook: friends you might know
- Google Email::: attachment – CC – autocomplete – search
- Amazon:: filling your shopping cart
- Netflix // YouTube
  - Media sites rely on Machine learning to sift through millions of options to give you song or movie recommendation
- Retailers use it to gain insight into their customer's purchasing behavior
- Self driving cars
- Tumor:: cancerous // benign

# | Facebook

## Content Personalization:

- ML algorithms help **personalize the News Feed** for users by analyzing their past interactions, preferences, and behavior to prioritize content that is most relevant to them.

# | Facebook

## Advertising

- ML is used to deliver targeted advertising by analyzing user data to understand interests and preferences, thereby showing ads that users are more likely to engage with.

# | Facebook

## Face Recognition

- Facebook's photo tagging feature uses ML-powered face recognition technology to suggest tags by identifying friends in uploaded photos.



## **Content Moderation**

- ML models are employed to detect and remove inappropriate content, such as hate speech, graphic violence, or nudity, to enforce community standards.

# | Facebook

## Language Translation

- Facebook uses ML to automatically translate posts and comments into different languages, making content accessible to a global audience.

# | Facebook

## **Fake Account Detection**

- ML helps in identifying and deactivating fake accounts that may be involved in spamming, misinformation, or other malicious activities.



# | Facebook

## **Chatbots on Messenger**

- ML is used in Messenger to power chatbots that businesses use for customer service and engagement.



## **Video and Audio Analysis**

- ML algorithms analyze videos and live streams to understand content and context, assist in content moderation, and provide relevant content suggestions.

# | Facebook

## **User Behavior Analysis**

- ML is used to understand user behavior patterns, which can inform the design of new features and the improvement of existing ones.

# | Facebook

## **Predictive Analysis**

- Facebook uses predictive analytics to forecast user engagement and content popularity, helping inform content creators and advertisers.

# | Facebook

## **Marketplace Recommendations**

- On Facebook Marketplace, ML is used to recommend products to users based on their browsing history and interests..

# | Google

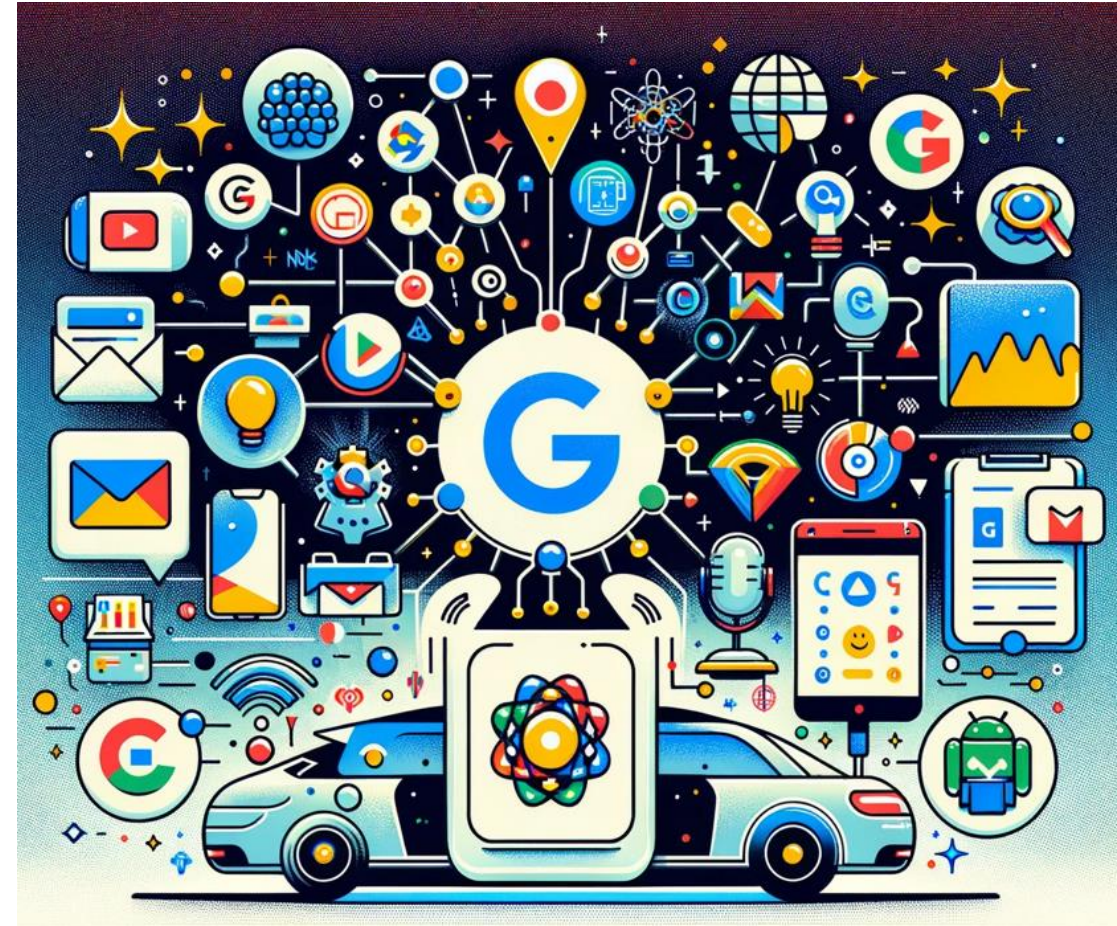
- **Search Algorithms:** Google's search engine uses ML to improve search results and relevancy, understanding user intent and context.
- **Google Assistant:** This virtual assistant uses natural language processing and machine learning for voice recognition, understanding user queries, and providing relevant responses.
- **YouTube:** ML algorithms are used for video recommendations, understanding viewer preferences, and content moderation.







- Google Photos: ML is applied for image recognition, allowing users to search for photos based on contents, and for creating automatic albums and memories.
- Gmail: Google uses ML for features like spam filtering, smart compose, and email categorization.
- Google Ads: ML is used to optimize ad targeting and bidding, and to analyze ad performance.



# | Google

- Google Maps: Machine learning helps in traffic prediction, route optimization, and providing personalized location recommendations.
- Google Translate: ML is employed for language translation, supporting numerous languages with high accuracy.
- Android: Google's mobile OS uses ML for predictive text input, app recommendations, and battery life optimization.
- Google Cloud Platform: Offers various ML tools and services for businesses, including AutoML, AI Platform, and TensorFlow.



# | Google

- Waymo (Self-Driving Cars): Google's self-driving car project relies heavily on ML for navigation, traffic prediction, and decision making.
- Google Earth and Street View: ML is used to process and analyze vast amounts of geographical data.
- Google Play: ML algorithms recommend apps, games, and other content based on user behavior and preferences.
- Healthcare and Research: Google's DeepMind and other research initiatives use ML for health data analysis, drug discovery, and more.

# | Amazon

- Recommendation Systems: Amazon's ML algorithms analyze customer behavior, purchase history, and preferences to provide personalized product recommendations.
- Amazon Alexa: This voice service uses ML for natural language processing and understanding, enabling it to respond to voice commands and queries.
- Fraud Detection and Prevention: ML is employed to detect and prevent fraudulent transactions, thereby enhancing the security of Amazon's online marketplace.

# | Amazon

- Supply Chain Optimization: Amazon uses ML to forecast demand, optimize inventory management, and enhance logistical efficiency in its supply chain.
- Amazon Go: These cashierless stores use ML and computer vision technologies to track what shoppers pick up and charge them for their purchases as they leave the store.
- Automated Warehousing: Amazon's warehouses use ML-driven robots for sorting, packing, and storing goods, increasing efficiency and reducing human errors.

# | Amazon

- Amazon Web Services (AWS): AWS offers a range of ML services and tools for businesses, including Amazon SageMaker for building, training, and deploying machine learning models.
- Content Moderation: ML algorithms are used for moderating content on Amazon platforms, including product reviews and seller information.
- Personalized Advertising: Amazon utilizes ML to deliver targeted advertising both on and off its platform, based on user activity and preferences.

# | Amazon

- Price Optimization: ML algorithms analyze market conditions and consumer demand to dynamically adjust prices.
- Amazon Prime Air: Amazon has been developing drone technology for delivery services, using ML for navigation and obstacle avoidance.
- Quality Control: In manufacturing and product selection, ML helps in quality assurance by identifying defects and ensuring high standards.
- Amazon Fashion: ML technologies assist in fashion recommendations by analyzing current trends, user preferences, and fashion compatibility.

# | Athletics



# | Athletics

- Performance Analysis and Enhancement: ML algorithms analyze athletes' performance data, including their movements, speed, and techniques, to provide insights into areas of improvement. Coaches and trainers use this information to tailor training programs and enhance athletes' performance.
- Injury Prediction and Prevention: By analyzing data on athletes' training routines, physical responses, and past injuries, ML models can predict the risk of future injuries. This helps in designing preventive strategies and personalized training programs to minimize injury risks.



# | Athletics

- Game Strategy Optimization: In team sports, ML can analyze data from past games to understand opponents' strategies and weaknesses. This information is used to develop effective game plans and strategies.
- Wearable Fitness Devices: Athletes use wearable devices that collect data on their physical activities. ML algorithms process this data to provide insights on performance metrics, health indicators, and training effectiveness.



# | Athletics

- Biomechanical Analysis: ML assists in the analysis of athletes' biomechanics, helping in improving their techniques and reducing the risk of injury.
- Nutrition and Recovery: ML models can recommend personalized nutrition plans and recovery protocols based on the athlete's body responses, workout intensity, and goals.

# | Athletics

- Talent Identification and Scouting: ML algorithms can analyze data from various sources to identify promising young athletes. This helps scouts and coaches in recruiting new talent.
- Fan Engagement and Experience: For spectators, ML enhances the viewing experience by providing advanced analytics, player statistics, and predictive insights during live broadcasts.

# | Athletics

- Sports Equipment Design: ML is used to analyze performance data to design better sports equipment that enhances athletes' performance and safety.
- Simulation and Virtual Training: Athletes can use ML-powered simulation tools for virtual training, allowing them to practice and improve their skills in a controlled, data-rich environment.
- Match Analysis and Statistics: In sports like soccer, basketball, and tennis, ML algorithms provide in-depth match analysis and detailed statistics to help teams and individual players understand their performance better.