

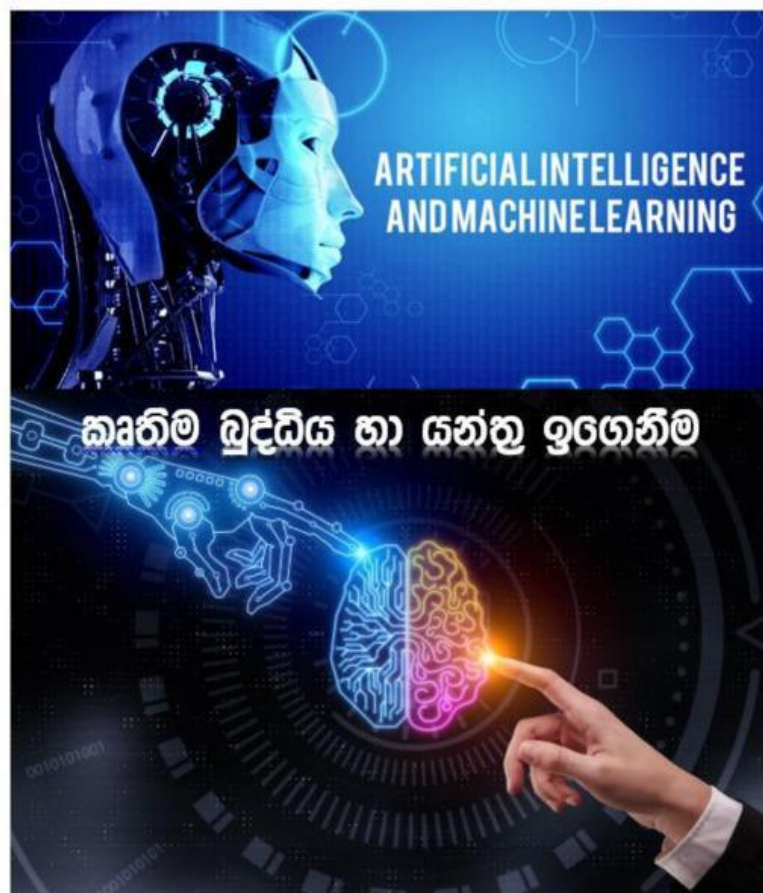
# Project 176



**Coding  
School**

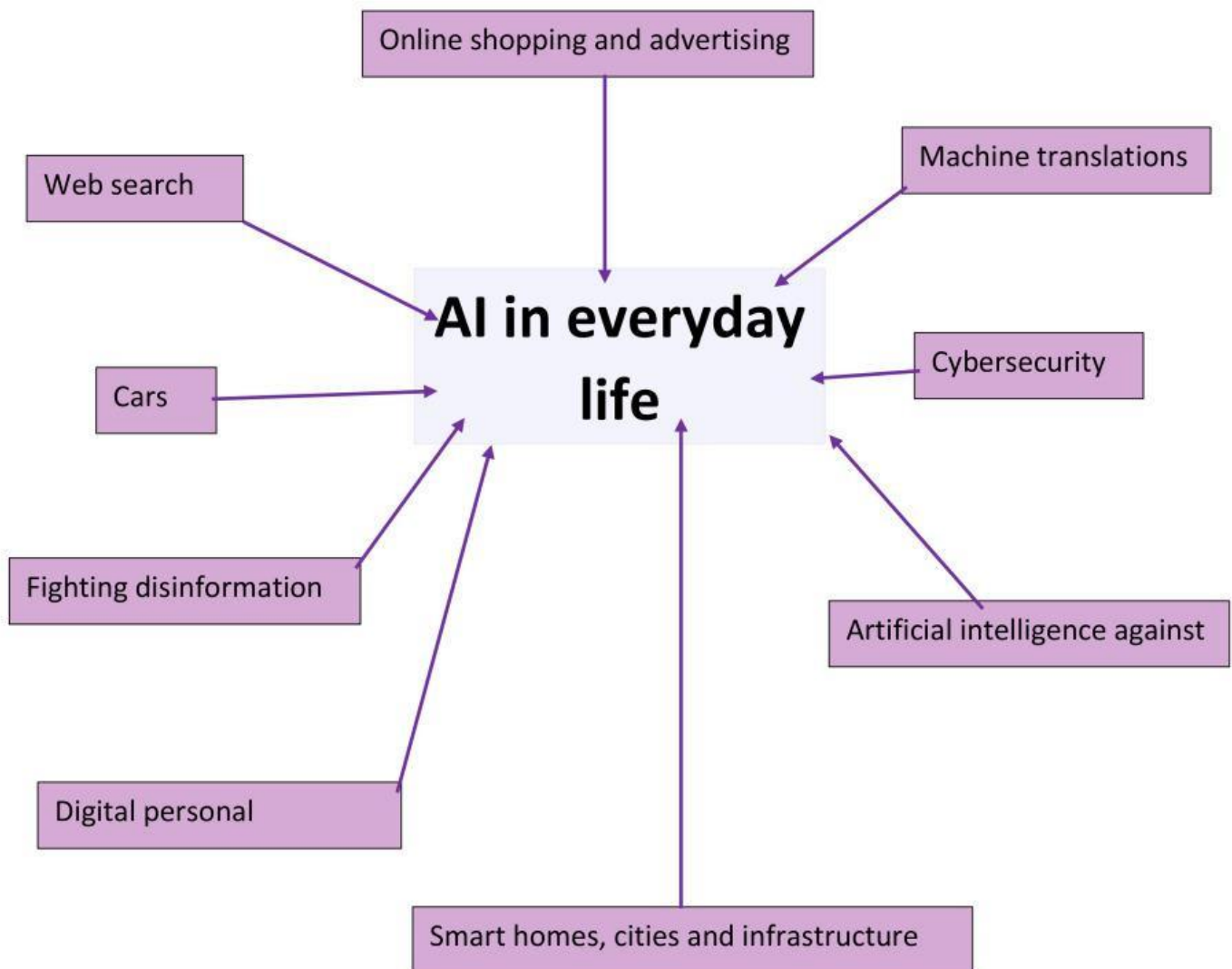


## AI and Machine Learning



## Let's discuss the use of artificial intelligence in dat toay life here

Artificial intelligence is used in many situations in life without our knowledge.  
Below are some of the different situations in which Artificial intelligence is used.



## Online shopping and advertising

### For online shopping:

AI analyzes user's interests, transactions and browsing activities, and recommends products based on user preferences. AI is also used to manage warehouse management based on virtual try-on, AI-driven chatbots, and demand forecasting.

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AI expands targeted ads based on user behavior and demographics. Programmatic advertising uses automated ad placement and Dynamic Creative Optimization (DCO), creating content tailored to the user.

The use of AI for online shopping and advertising is essential as follows.

### 1. Privatization and recommendation systems

- **Algorithm: Privatization** Collaborative filtering and content-based filtering models are used to recommend products based on user observations, transaction history, and history.
- eg: Amazon and Netflix



### 2. virtual assistants

- **NLP: AI-enabled chatbots**, such as Amazon Alexa and Google Assistant, are used to help customers with authority assistance, merchandising information and transactions.
- Eg: Chatbot services are provided in Sinhala language using AI tools like Dialog flow.



### 3. Predictive Analytics

- **Machine Learning:** AI machine learning models are used to predict future needs, buying patterns and trade trends based on regression of consumer attitudes and business points.

Salesforce Einstein, Microsoft Azure AI.



### 4. Visual Search and Image Recognition

- **Computer Vision:** Search tools such as Google Lens and technologies such as Pinterest Visual Search are used to provide consumers with the ability to search for products by images rather than words.

eg: - Zara, Wayfair.



### 5. Ad Targeting and Optimization

- **Programmatic Advertising:** It uses AI to tailor advertising messages based on consumer attitudes and preferences on websites and social media.

Google Ads, Facebook Ads Manager.

### 6. Dynamic Pricing

- **AI Algorithms:** AI is used to automatically revise prices for platforms such as catering services, vehicle services and hotel bookings.

Uber, Airbnb.

### 7. Inventory Management and Supply Chain Optimization

- **AI and IoT:** The use of AI and Internet of Things (IoT) offers benefits in expanding inventory management, forecasting and distribution approaches.

IBM Watson, SAP Leonardo.

## 8. Customer Insights and Behavior Analysis

- **AI Analytics Tools:** Tools like Google Analytics and Adobe Analytics analyze customer behavior and interactions to improve advertising.

AI technology plays a key role in enhancing customer experience and empowering advertising or shopping services.

## Web search

AI technology is used in web searches to provide users with fast, accurate and customized results.

It studies users' search patterns, history and keyword returns using AI, and customizes search results. This helps in providing details, trends, and matching websites to the user handle. Furthermore, the majority of AI-driven search engines are capable of understanding language and accuracy, providing highly favorable search results.

### 1. Natural Language Processing - NLP

- **Objectives:** NLP is used to accurately understand users' search queries and the content of web pages. Find information by Sinhala sentence patterns, words, and context.
- **Examples:**
  - **Google BERT:** An AI model used by Google to better understand the context of words in user queries.
  - **OpenAI GPT:** Similar to the human mind, information is created and used to deliver tailored results to users.

### 2. Semantic Search

- **Objectives:** Use AI mechanics to understand users' search codes and provide accurate results. **Examples:**

- **Google Knowledge Graph:** Matches search results using related information and object relationships.
- **Microsoft Bing AI:** AI technology is used to provide accurate results with sentence understanding of search queries.

### 3. Machine Learning

- **Objectives:** AI power is used to improve the range of search results by analyzing past search queries, user clicks, and other data. AI models learn from user behavior and analyze search results.
- **Examples:**
  - **Google Rank Brain:** Automatically organizes search results using Google as an AI model.
  - **Bing's Intelligent Search:** Organize search results by user activity and guide users to engage in project testing.

### 4. Personalization

- **Objectives:** AI personalizes search results based on user's query history, location and personal preferences.
- **Examples:**
  - **Google Personalized Search:** Customizes search results based on past search history, browsing habits and geographic location.
  - **Bing Personalization:** Organizes search results according to user behavior and preferences.

### 5. Voice Search and Speech Recognition

- **Objectives:** AI-enabled voice search allows users to search the web by voice, rather than just words.
- **Examples:**
  - **Google Assistant** and Siri: It uses AI to recognize users' voice queries and provide accurate results.

- **Amazon Alexa:** AI offers voice-assisted search.

## 6. Image Search and Computer Vision

- **Objectives:** AI-enabled visual search enables users to search for products and content based on images.
- **Examples:**
  - **Google Lens:** Allows users to search using visual images.
  - **Pinterest Visual Search:** Providing users with visual bases for search projects.

## 7. AI-Powered Search Ranking Algorithms

- **Objectives:** AI is used to rank web pages and provide high-quality user experiences.
- **Examples:**
  - **Google's PageRank and Rank Brain:** Ranking by keywords, content status, and user responses on search results.
  - **DuckDuckGo:** Provides search results while preserving user privacy.

## 8. Autocomplete

- **Objectives:** Users can make word suggestions while searching to speed up the search and fill in helpful queries.
- **Examples:**
  - **Google Autocomplete:** Suggests words by default based on users' search queries.
  - **Bing Search Suggestions:** Provides constant query suggestions based on searches.

AI technology improves and improves web search results, recognizes the context of user queries, personalizes search queries, and contributes to delivering the best content.