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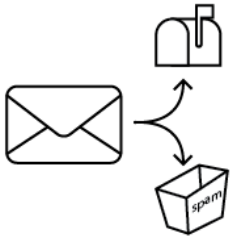

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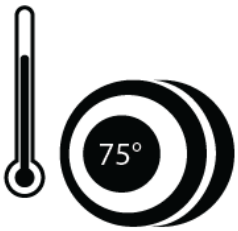

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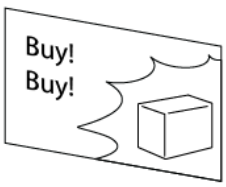

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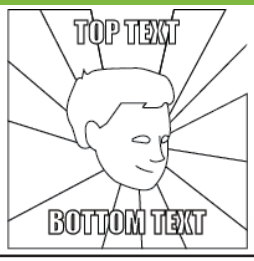


DATASET

ONLINE BANKING

How: Uses computer vision to recognize human handwriting on images of checks
Examples: Banking apps to scan checks for mobile deposit

SPAM FILTER

How: Learns to identify spam emails based on past user interactions and patterns
Examples: Gmail, Outlook, Yahoo email spam folders

SMART TOYS

How: Use computer vision to navigate, voice recognition and language processing to understand commands
Examples: Cozmo, My Friend Kayla

CHATBOTS

How: Use natural language processing to understand responses
Examples: Customer service chatbots online and on phone hotlines

SMART CAR

How: Self-driving cars use computer vision, sensors, and machine learning to navigate
Examples: Tesla, auto parallel park feature, blind spot detection

AI HEALTH MONITOR

How: Uses sensor data to detect abnormalities in health patterns, like heartbeat
Examples: Apple watch

SMART CAMERA

How: Uses computer vision and light sensors to detect people/motion
Examples: Nest security camera, smart baby monitor

SOCIAL MEDIA

How: Algorithms sort newsfeed items based on your viewing history
Examples: Twitter, Instagram, TikTok, Facebook

SMART SPEAKER

How: Uses voice recognition and language understanding to process commands
Examples: Google Home, Amazon Alexa, Siri

SENTIMENT ANALYSIS

How: Analyzes text/voice to determine sentiment
Examples: Many customer service systems

SMART THERMOSTAT

How: Learns your heating/cooling habits over time
Examples: Nest thermostat, Ecobee, Emerson Sensi

VIDEO GAME CHARACTER

How: Uses AI to navigate in world and make decisions
Examples: Skyrim dragon, Pokemon, Minecraft skeleton

FACIAL RECOGNITION

How: Recognizes facial features based on faces it has seen before
Examples: Surveillance, Snapchat filters, unlocking phone

RIDE SHARE

How: Fare price, trip time, and route calculated based on current conditions and past examples
Examples: Uber, Lyft

SEARCH ENGINE

How: Prioritizes results based on your history and history of others like you
Examples: Google, Bing, DuckDuckGo

TARGETED ADS

How: Shows you ads based on your viewing history
Examples: Ads on social media, websites, online news

SEARCH HISTORY

A list of phrases people have searched for, with the searchers' emails

MEMES

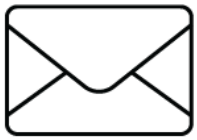
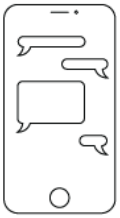
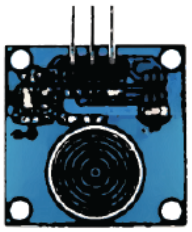
A collection of images of memes and a popularity score for each meme

RECOMMENDATION SYSTEMS

How: Predicts what you will like based on your history
Examples: Spotify, Apple Music, Netflix, Hulu, Amazon

SMART VACUUM

How: Uses sensors and updates map in memory to navigate
Examples: Roomba, Neato Botvac, Ecovacs Deebot

DATASET	DATASET	SENSOR	SENSOR
			
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			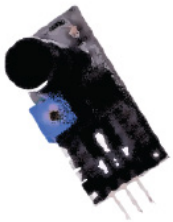
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		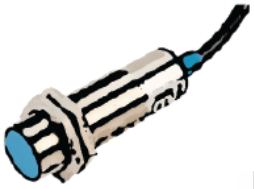	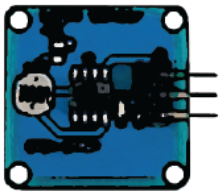
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		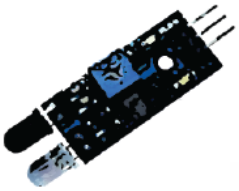	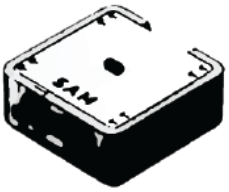
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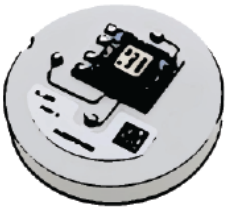
			

TOUCH SENSOR

What: Recognizes touch
How: Change in conductivity from air
Uses: Touchscreens, mousepads

CAMERA

What: Captures images and video of the world
How: Focuses light that reflects off of objects
Uses: Recording video, taking pictures

TEXTS

A dataset of texts with their content, sender, receiver, and date

EMAILS

A dataset of emails with their content, sender, and receiver, and date

SOUND SENSOR

What: Detects sound
How: Changes in air pressure
Uses: Security system, voice assistant

SMELL SENSOR

What: Senses smell
How: Chemical gas sensors
Uses: Detecting toxins, explosives

FACEBOOK POSTS

A dataset of Facebook posts with the poster's name, number of likes, and date

TWEETS

A dataset of tweets with the poster's username, number of likes and retweets, and date

PROXIMITY SENSOR

What: Detects presence of nearby objects
How: Electromagnetic field
Uses: Security systems

PRESSURE SENSOR

What: Pressure sensor
How: Sensing strain in a material
Uses: Keyboards, aircraft

WEATHER HISTORY

History of weather in a particular city over the past year, including temperature and precipitation

IMAGES

A dataset of images of a particular subject (e.g. dogs, tomatoes, plants, faces, etc.)

HEAT SENSOR

What: Detects temperature
How: Temperature differences cause voltage changes
Uses: Cooking, AC

SPEED SENSOR

What: Detects speed
How: Rotating magnet creates voltage
Uses: Car speedometer

SONGS

A dataset of audio files of songs and text files with the songs' lyrics

DICTIONARY

A list of words in the English language, including parts of speech and definitions

LIGHT SENSOR

What: Senses light
How: Changes in Cadmium-Sulfide, a substance sensitive to light
Uses: Lamps, brightness control, agriculture

INFRARED SENSOR

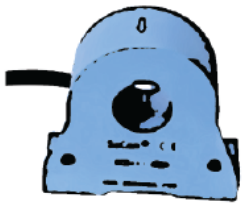
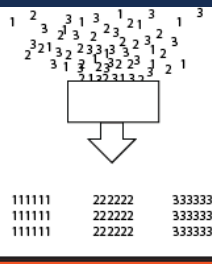
What: Detects infrared radiation
How: Emits radiation that is reflected back
Uses: Night vision, detect human bodies

BOOKS

A dataset of book titles, summaries, and cover images

ROUTES

A dataset of routes driven by Uber drivers, organized by driver ID number and including data such as length of route and amount of traffic

SENSOR	OUTPUT	OUTPUT	OUTPUT
			
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		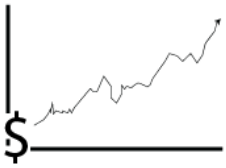	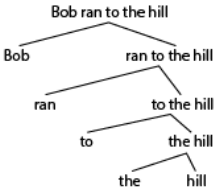
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	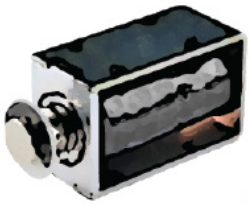		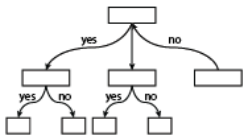
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	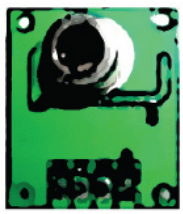		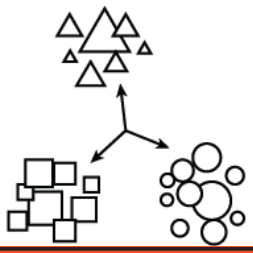
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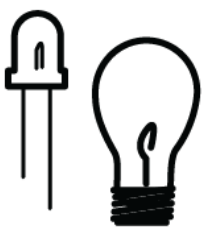			

PREDICTION

AI can output a prediction (e.g. about something a user might like) based on the input/algorithm

SORTING

AI could output a list of inputs sorted according to the algorithm's results

GRIPPER

What: Opens and closes two "fingers"
How: Compressed air
Uses: Grasping items

ELECTRIC CURRENT SENSOR

What: Detects changes in electric sensor
How: Magnetic field
Uses: Power meters, surge protectors

NLP

NLP algorithms analyze text to extract information such as parts-of-speech, sentiment, or key ideas

REGRESSION

A regression algorithm uses past data to predict the future—for example, using past home prices to predict the price of a new home on the market

SUCTION CUP

What: Attaches to smooth surfaces
How: Forcing air out, makes cup a vacuum
Uses: Picking up or climbing on items

STEPPER MOTOR

What: Rotates in specified steps/degrees
How: Electrical power
Uses: Precise rotational positioning of objects

DECISION TREES

Decision trees are like flow charts that help an algorithm move from observations about an item to a decision about the item's category or value

PLANNING

Planning algorithms try to look ahead into probable future conditions and develop a sequence of steps to navigate a route or solve a problem

SOLENOID

What: Produce linear motion over short distances
How: By creating a magnetic field
Uses: Latching systems, valves

ARTIFICIAL MUSCLE

What: Mimic a human muscle
How: Changing pressure
Uses: Machinery, medical devices

CLUSTERING

A clustering algorithm groups items in a dataset together based on similarity. Items that are similar are close together, items that are not are far apart.

CLASSIFIER

A classification algorithm uses a dataset to recognize future input—for example, using many pictures of cats to recognize a new cat image in the future

SPEAKER

What: Generates noise
How: Converts sound waves into mechanical movement that compresses air
Uses: Playing music

HYDRAULIC ACTUATOR

What: Produce linear motion
How: Liquid pressure
Uses: construction equipment

REINFORCEMENT

Reinforcement learning algorithms learn patterns from continuous interaction with and feedback from the environment.

CASE-BASED

Case-based algorithms save prior experiences as "cases" and learn lessons from them in the future, similar to how humans learn from experience.

VISUAL DISPLAY

A visual display such as a computer or TV screen can show different images or videos depending on the results

LIGHT BULB

A light bulb can light up or change colors when a particular result is found