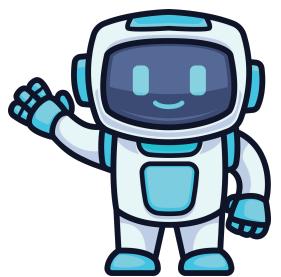
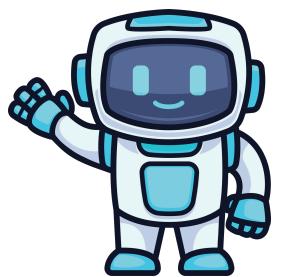


End-to-End AI Development: Learn, Build, and Deploy Intelligent Systems

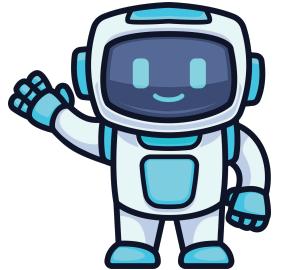
Day 1 : Introduction to Artificial Intelligence



Scan this and share with us ! What is the first thing that comes to your head when you hear the word “ AI ” !

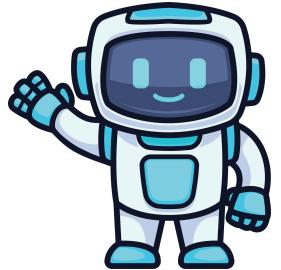
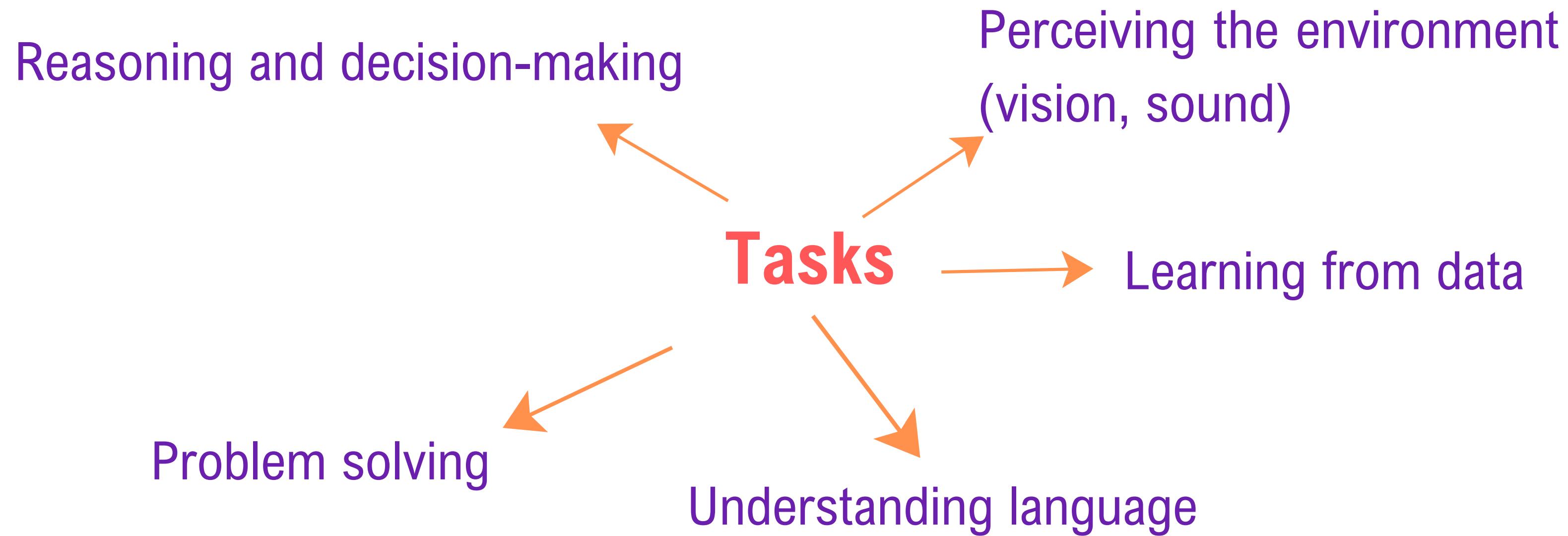


Part 1: Understanding Artificial Intelligence



What is Artificial Intelligence (AI)?

Artificial Intelligence (AI) is a field of computer science that focuses on creating systems capable of performing tasks that normally require human intelligence.

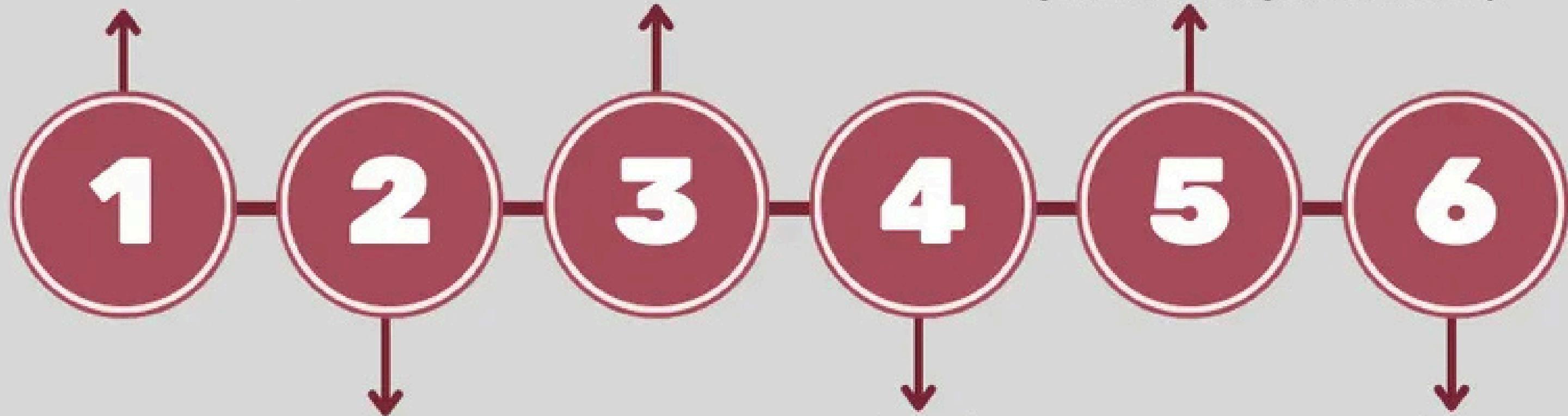


How Does AI Work?

Choosing a Model and Training

Data Collection

AI begins with gathering large amounts of data for training.



Data Preparation:

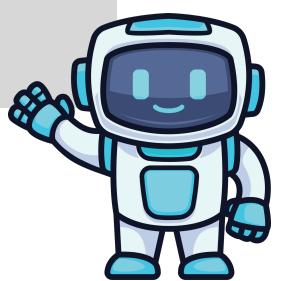
The collected data is then cleaned and organized to be used effectively.

Evaluation

After training, the model is tested with new data to assess its performance and accuracy.

Deployment

Once satisfactory, the AI model is deployed for real-world use.



Key Concepts in Artificial Intelligence

01

Machine Learning (ML)

Machine Learning is a subset of AI that enables systems to learn patterns from data and improve their performance over time without being explicitly programmed for each task.

Instead of writing rules manually, the system discovers rules automatically from examples.

02

Neural Networks

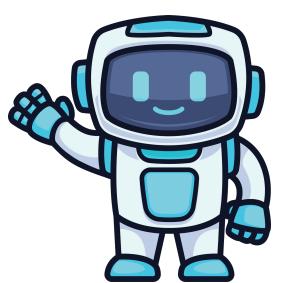
Neural Networks are computational models inspired by the structure of the human brain, composed of interconnected units called neurons.

03

Training vs. Inference

- Training : The phase where an AI model learns from data by adjusting its internal parameters to minimize errors.
- Inference : The phase where the trained model is used to make predictions or decisions on new, unseen data.

AI Concepts



Common Misconceptions About AI

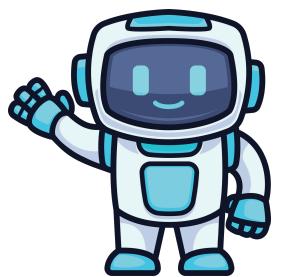
AI is human-like



AI thinks or feels like a human



AI performs pattern recognition and prediction;
it has no consciousness or emotions



Common Misconceptions About AI

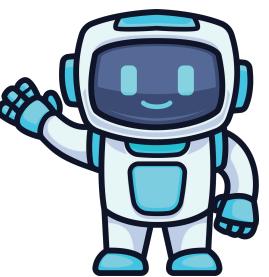
AI is infallible



AI is always correct



AI can make mistakes and may inherit biases from data



Common Misconceptions About AI

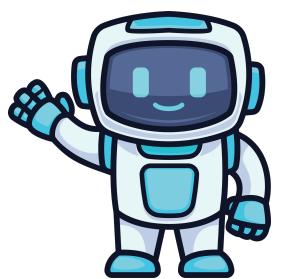
AI will replace all jobs



AI will take over every profession



AI augments human capabilities, automating repetitive tasks while humans handle creativity, reasoning, and complex decisions



Brief History of Artificial Intelligence

1956

The term “Artificial Intelligence” is officially coined at the [Dartmouth Conference](#), marking the birth of AI as a research field.

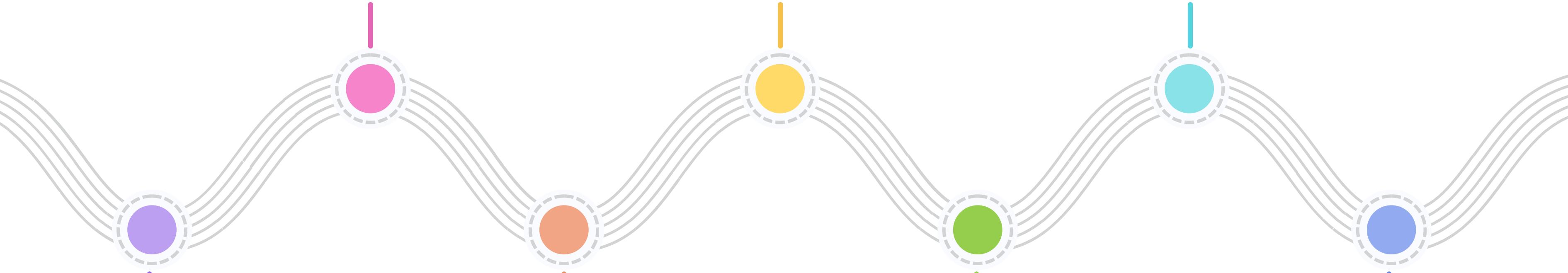
1980

Rise of Expert Systems, which use domain knowledge to mimic human decision-making in specific fields.

2000

The emergence of Big Data and increased computational power enables more complex and scalable AI models.

1950



Alan Turing introduces the [Turing Test](#), proposing a way to evaluate machine intelligence.

Development of early AI programs based on rules and symbolic reasoning, such as game-playing and logic systems.

Machine Learning becomes more prominent, allowing systems to learn from data rather than relying solely on hand-crafted rules.

The Deep Learning revolution, driven by neural networks, GPUs, and large datasets, leads to breakthroughs in vision, speech, and language, making AI widely accessible.



Types of AI Systems

Narrow AI (Weak AI)

Designed to perform one specific task efficiently. It does not understand or generalize beyond its domain.

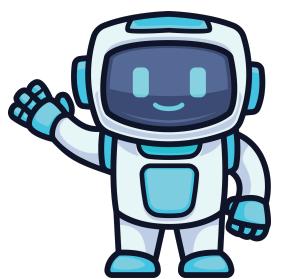
01

by **Capability**

02

General AI (Strong AI)

Refers to AI with human-like intelligence capable of reasoning, learning, and adapting across multiple domains.



Types of AI Systems

Rule-Based AI

Operates using explicit rules written by humans (if-then logic). Works well in controlled environments but lacks learning and adaptability.

01

by Approach

02

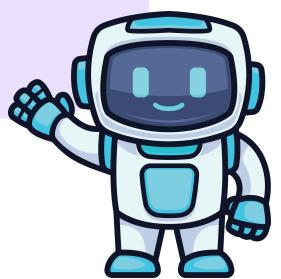
Machine Learning (ML)

Learns patterns and relationships directly from data using statistical models. Performance improves with more data and experience.

03

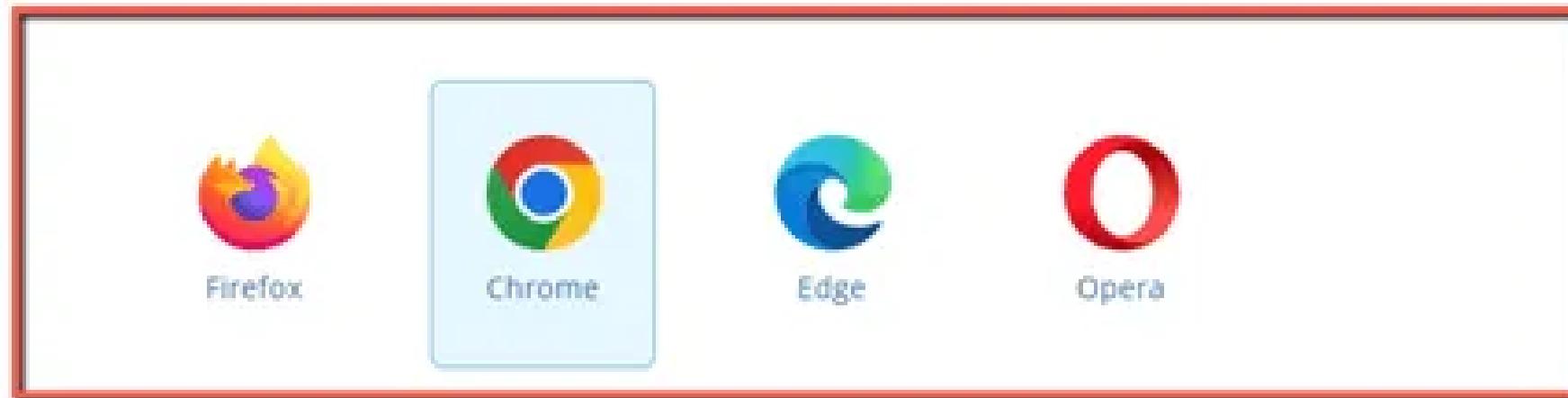
Deep Learning (DL)

A subset of machine learning that uses multi-layer neural networks to learn complex representations. Especially effective for large-scale and unstructured data.



Real-World Applications of Artificial Intelligence

AI is already deeply integrated into both everyday life and professional environments, often working in the background without users noticing.



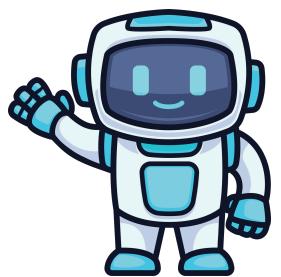
AI algorithms rank and personalize search results based on relevance, user behavior, and context.



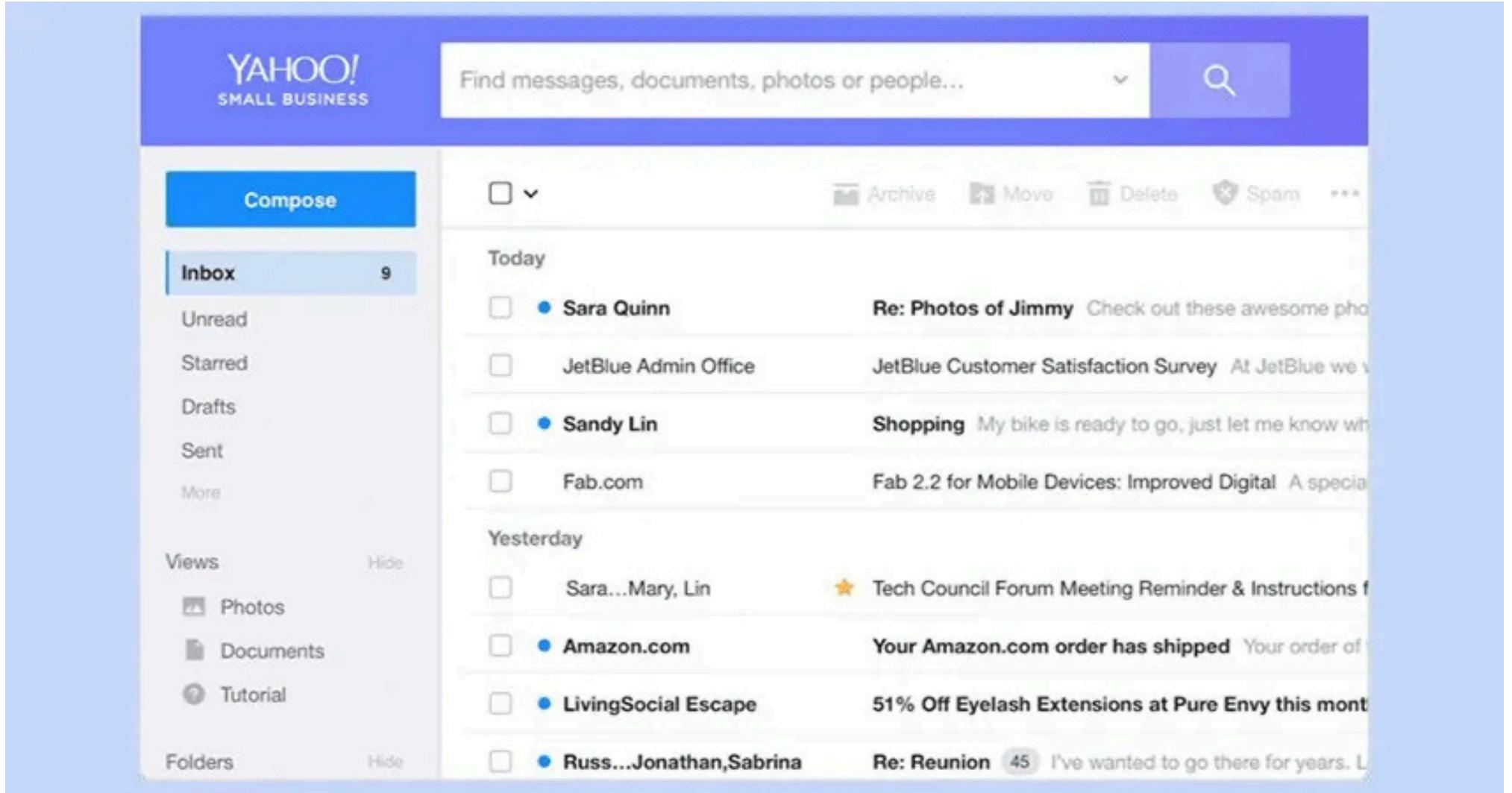
AI predicts traffic conditions and suggests optimal routes in real time.



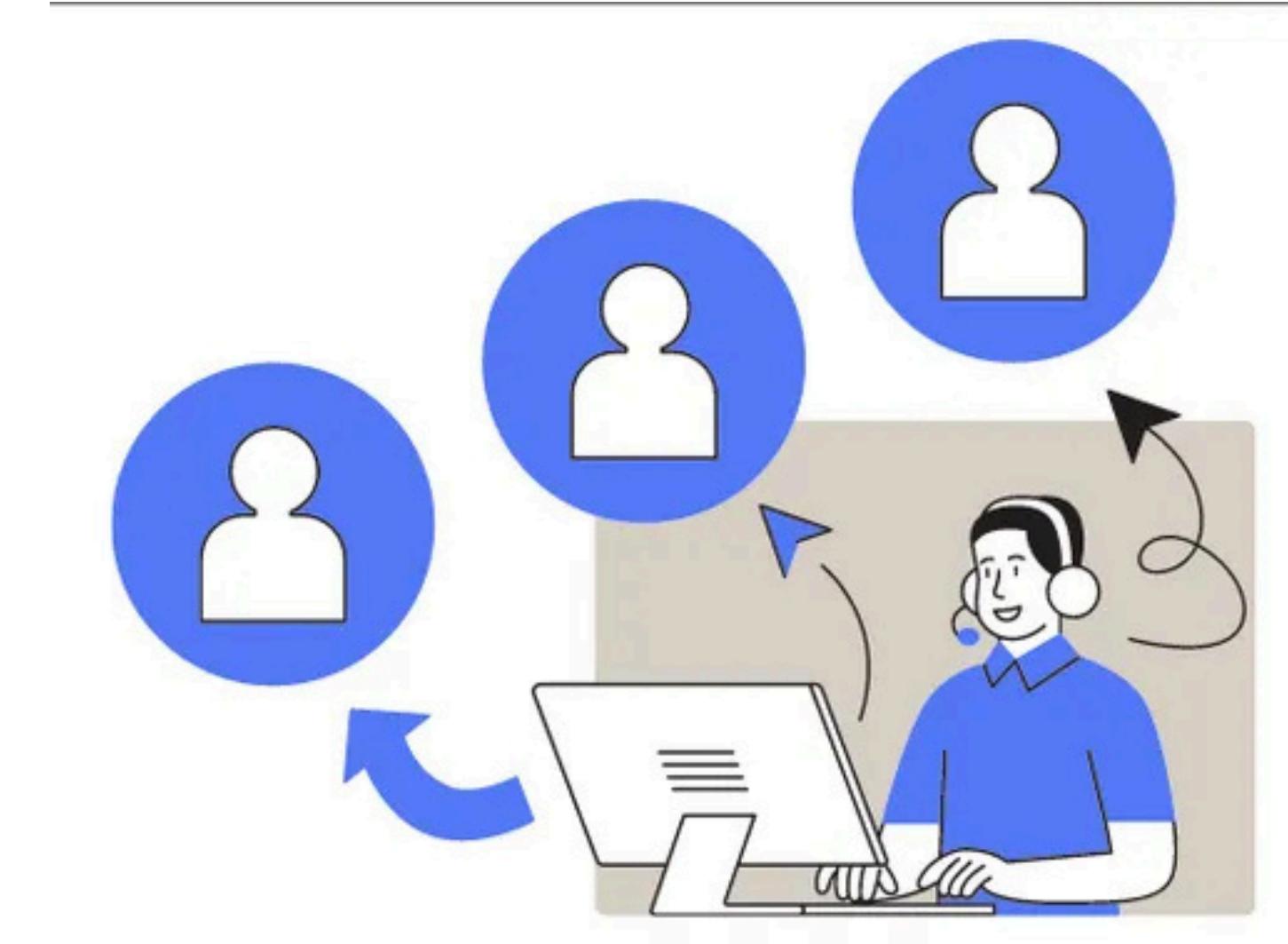
AI recommends content, suggests friends, and performs face tagging using pattern recognition in images.



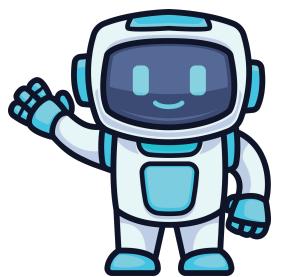
Real-World Applications of Artificial Intelligence



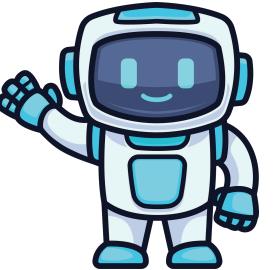
AI filters spam, detects phishing attempts, and generates smart reply suggestions.

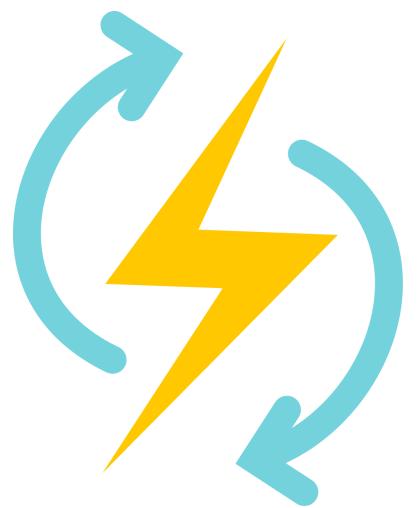


AI-powered chatbots and sentiment analysis tools automate support and improve user experience.

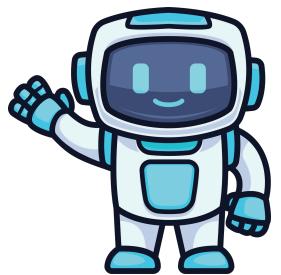


AI's real value lies in automation, optimization, and decision support, enhancing efficiency while supporting human expertise.

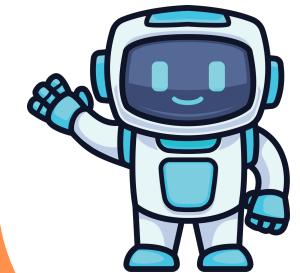




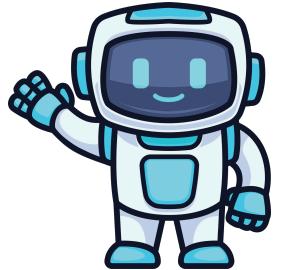
NOW ! In your own words, what is Artificial Intelligence?



Can you classify this example: a spam filter → Narrow AI or General AI?



Part 2: Hands-On AI Practice



Setting Up Your Environment - Option 1 : Work on Kaggle (Cloud)

The screenshot shows the Kaggle Cloud interface. On the left, a sidebar menu lists various options: Home, Competitions, Datasets, Models, Benchmarks, Game Arena, Code, Discussions, Learn, and More. Under 'More', there's a 'VIEWED' section with items like 'test-2', 'test-1', 'Fruits-360 dataset', 'iris kmeans clustering', and 'Iris dataset'. At the top right, there's a search bar, a user profile icon, and sections for 'LOGIN STREAK' (1 day), 'TIER PROGRESS' (0% to Expert), and 'PUBLIC ACTIVITY'. The main area features a 'Welcome, abdeldjalil hani!' message, a summary of activity (15 datasets created, 30 notebooks created, 0 competitions joined, 0 discussions posted, 0 courses completed), and a 'Next Steps' section with 'Jump back in' and 'More things to do' items.

Welcome, abdeldjalil hani!

Jump back in, or start something new.

LOGIN STREAK
1 Your longest is 4 days

TIER PROGRESS
0% to Expert

PUBLIC ACTIVITY

Datasets 15 total created

Notebooks 30 total created

Competitions 0 total joined

Discussions 0 total posted

Courses 0 total completed

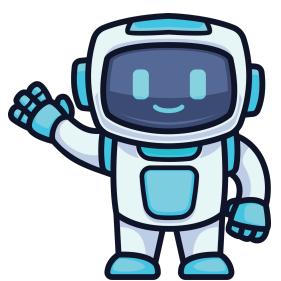
Next Steps

Jump back in

- AI Training Visualisation Commit complete an hour ago → Resume editing
- test-2 Usability Rating: 1.25 · Last Updated 14 days ago → Resume editing
- test-1 Usability Rating: 1.25 · Last Updated 14 days ago → Resume editing

More things to do

- Join a conversation Make your first comment! Visit the [forums](#) or explore discussions on [datasets](#). ×
- Cast your first upvote Explore notebooks and upvote one that you find helpful. ×
- Make a competition submission Follow our guide to make your first submission to the [Titanic](#) competition. ×

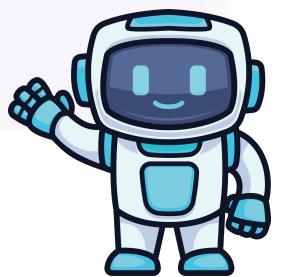


Setting Up Your Environment - Option 2 : Work on Jupyter Notebook (Locally)

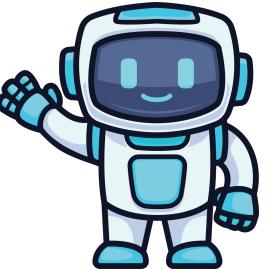
The screenshot shows the Anaconda website's distribution page. At the top, there is a navigation bar with links for ANACONDA, Products, Solutions, Resources, Company, Free Download, Sign In, and Get Demo. Below the navigation, the word "Distribution" is prominently displayed in large, bold letters. A text block encourages users to register for everything they need to get started on their workstation, including Cloud Notebooks, Navigator, AI Assistant, Learning and more. To the right of this text is a call-to-action box titled "Download Now" with a green "Get Started >" button. A red arrow points from the text "Easily search and install thousands of data science, machine learning, and AI packages" down towards the "Get Started" button. Below the registration text, there is a list of five bullet points detailing the benefits of the distribution:

- Easily search and install thousands of data science, machine learning, and AI packages
- Manage packages and environments from a desktop application or work from the command line
- Deploy across hardware and software platforms
- Distribution installation on Windows, MacOS, or Linux

For students and researchers, there is a link to create an account for free using your education domain. At the bottom of the page, there is a section titled "Manage Trusted Packages and Environments with Ease" with a subtext encouraging users to spend less time managing dependencies.



Overview of Kaggle Notebooks & Jupyter Notebooks



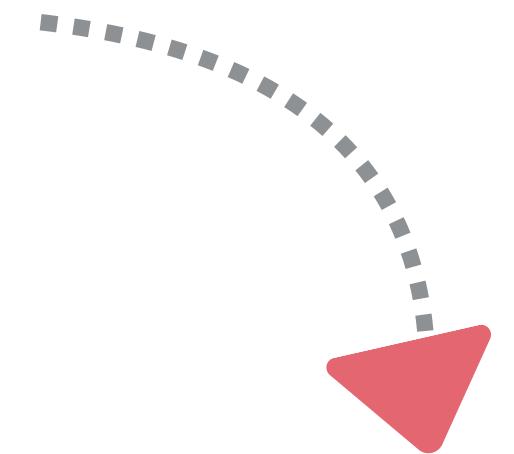
First AI Demo: Image Classification



Using Pre-trained Models

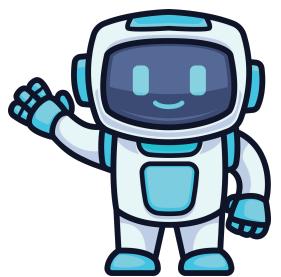
What are pre-trained models?

AI models already trained on
large datasets

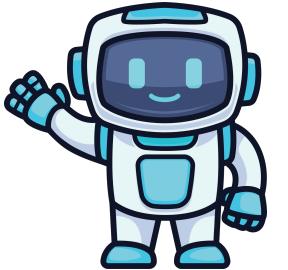


Why use them?

No need to train from scratch,
immediate results



First AI Demo: Image Classification



Thank You For your Attention



Abdeldjalil Hani



Abdeldjalil Hani



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