



# Demystifying AI Jargon: Your Essential Guide

Confused by tech talk? Scroll to decode the most  
puzzling AI terms in seconds!

By: Shaukatullah Safi





# What is an Algorithm?



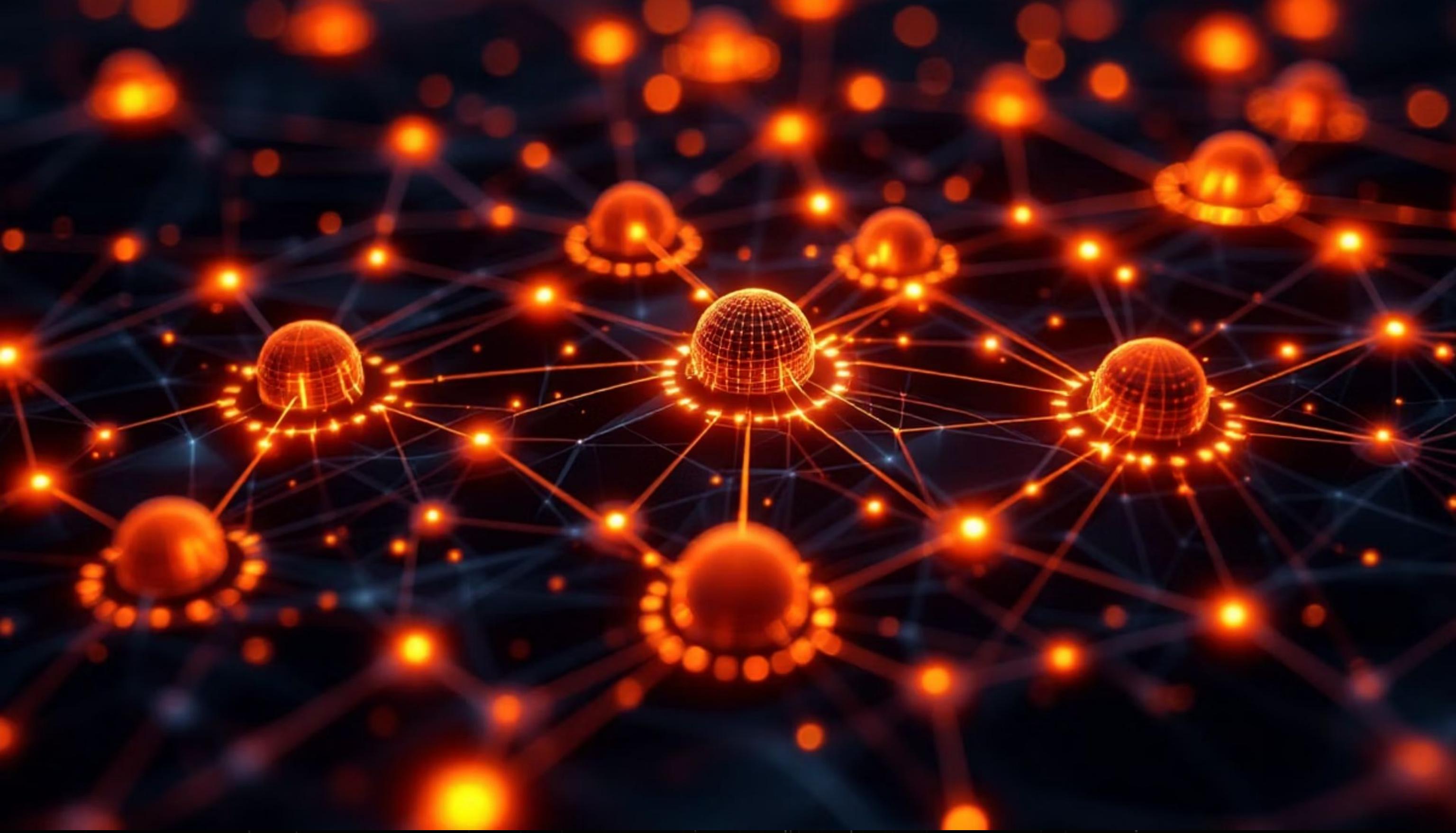
## Definition

A set of rules for a computer to solve problems

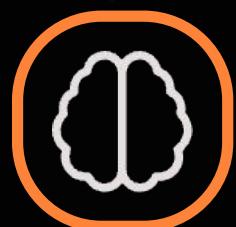


## Example

Algorithm analyses customer data for patterns



# Machine Learning Explained



## Definition

AI that learns from data without explicit programming



## Example

Recommending products based on past purchases



# Deep Learning Demystified



## Definition

ML with artificial neural networks mimicking the  
human brain structure



## Example

Image and speech recognition systems



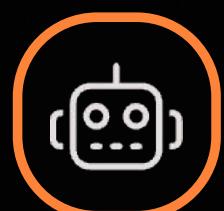


# Natural Language Processing



## Definition

AI's ability to understand and process human language



## Example

Chatbots and language translation apps





# Neural Networks Simplified

## Definition

Computing system inspired by biological neural networks

## Example

Used in image recognition and pattern detection





# Data Mining Decoded

## Definition

Discovering patterns in large data sets

## Example

Analysing customer behaviour to improve marketing



 **Tekgenie**

# Computer Vision Uncovered

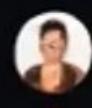
## Definition

AI that can "see" and interpret images

## Example

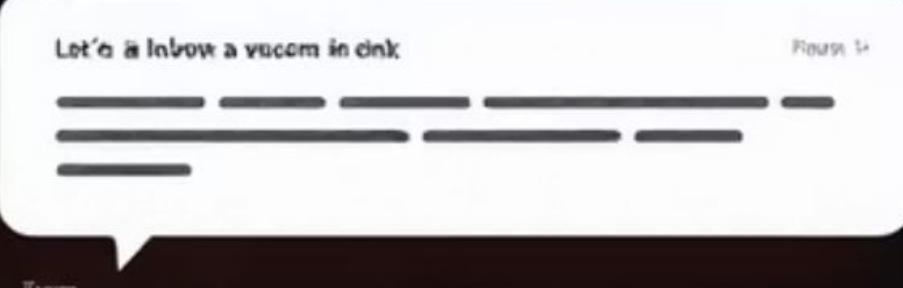
Self-driving cars and facial recognition



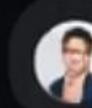


David

Customer support agent



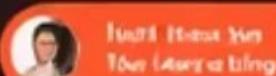
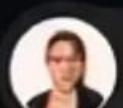
Team



Mike Smith

Customer support agent

DIMA

Hello there Yes  
Two things at onceDashboard  
Inbox

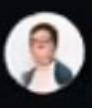
Lorraine Scott

Customer support agent

DIMA



New messages



David

Customer support agent



Elspeth

Let's do some collation?

Forums



David

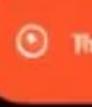
Customer support agent



Elspeth

Customer support agent

Dashboard



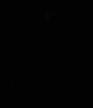
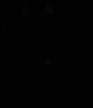
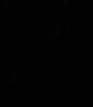
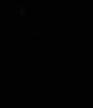
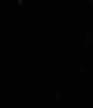
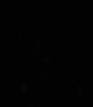
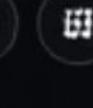
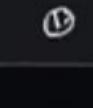
What's happening over there babies in a minute?

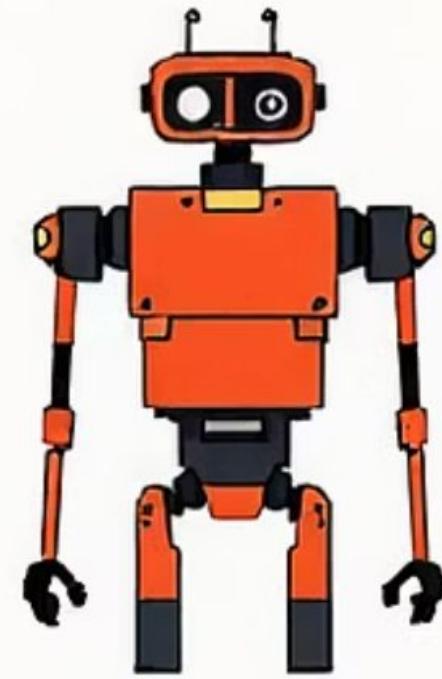


Elspeth

Customer support agent

Dashboard





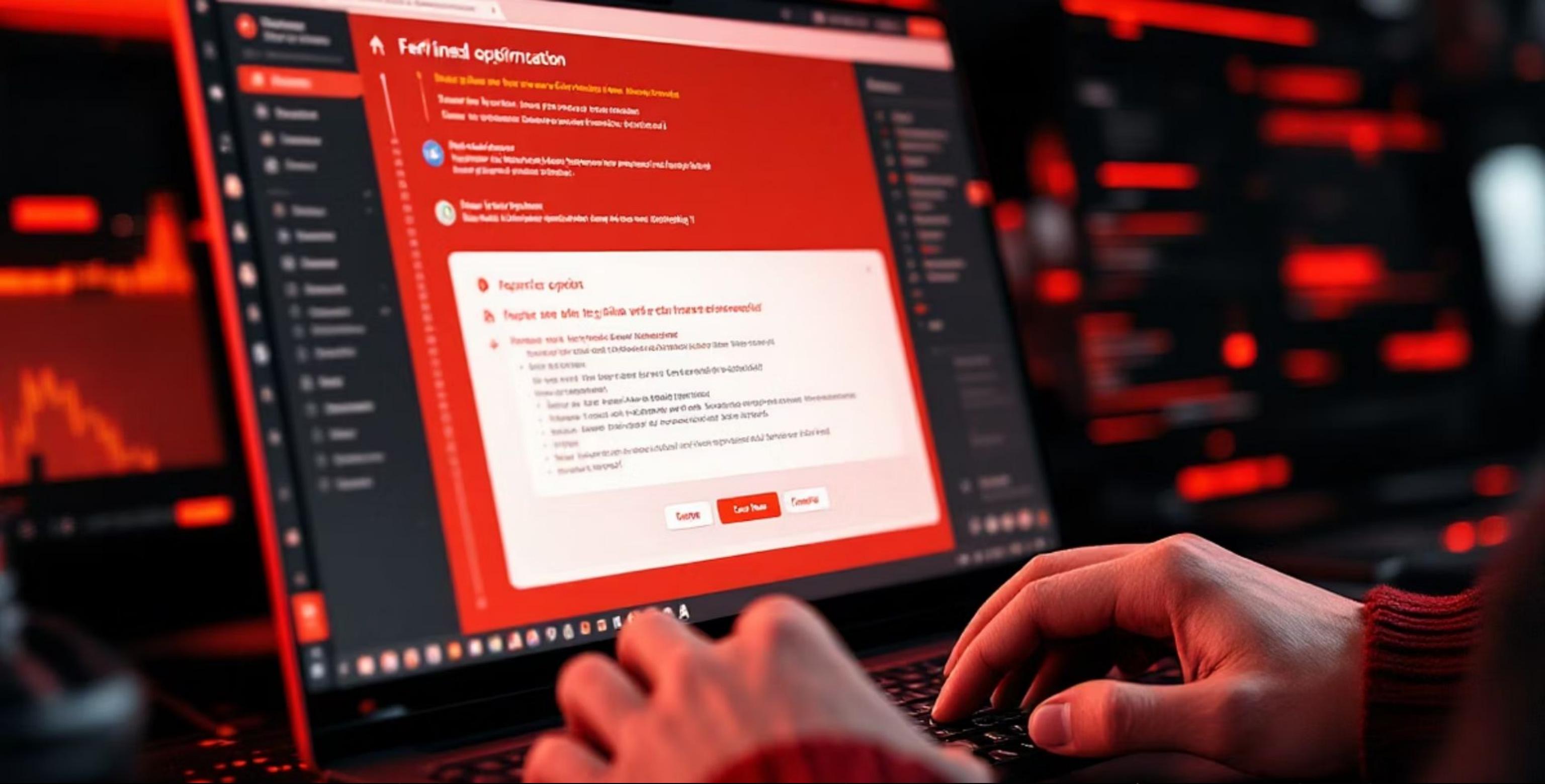
# What is Generative AI?

## Definition

AI systems that create new content from existing data, including text, images, music, and code.

## Real-World Example

DALL-E 2 turning your text description into a detailed, original image.



# Mastering Prompt Engineering

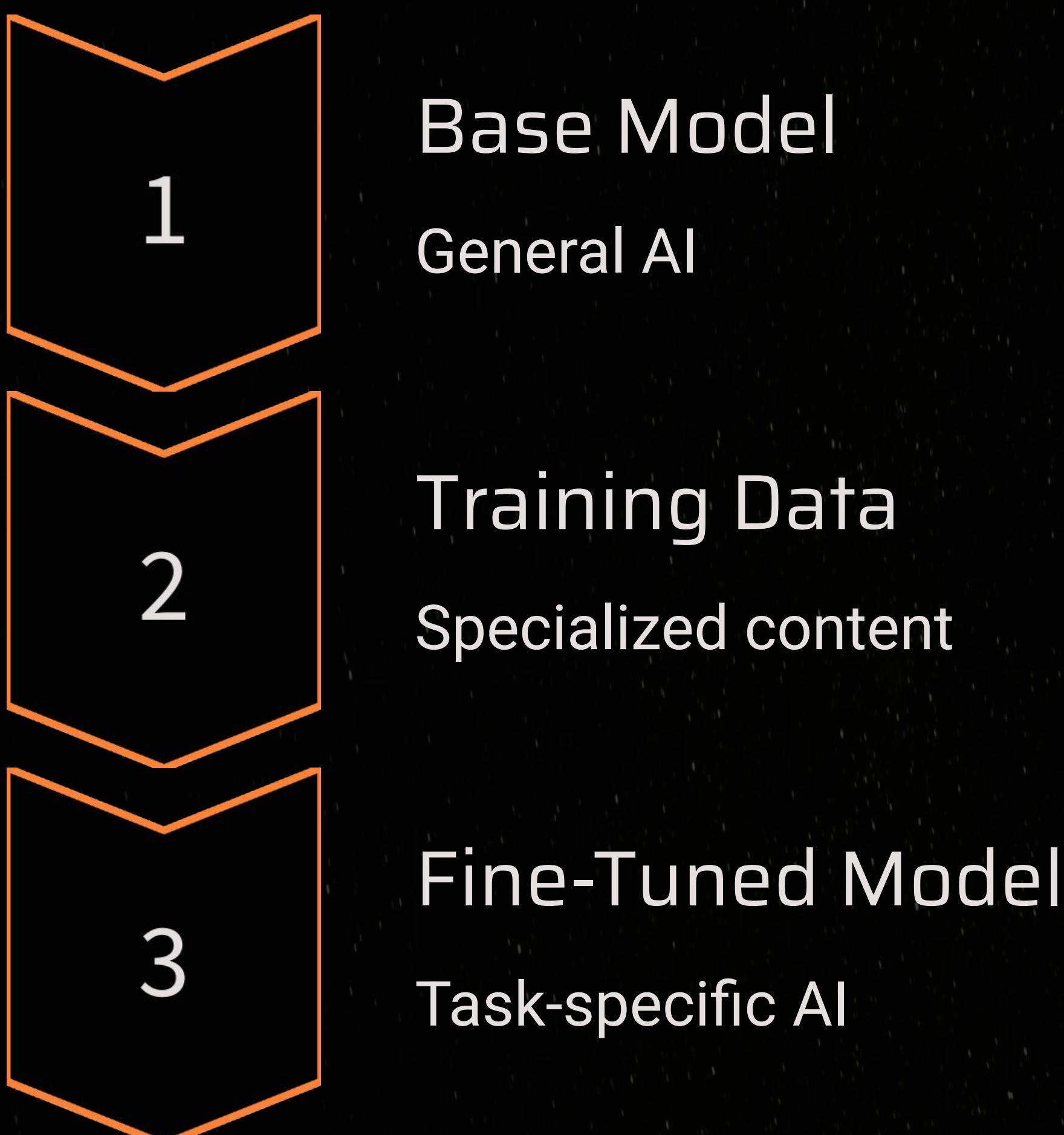
## Definition

The skill of crafting precise instructions for AI systems to produce desired outputs.

## Real-World Example

Refining search queries from "make logo" to "create minimalist tech logo with red and black colors".

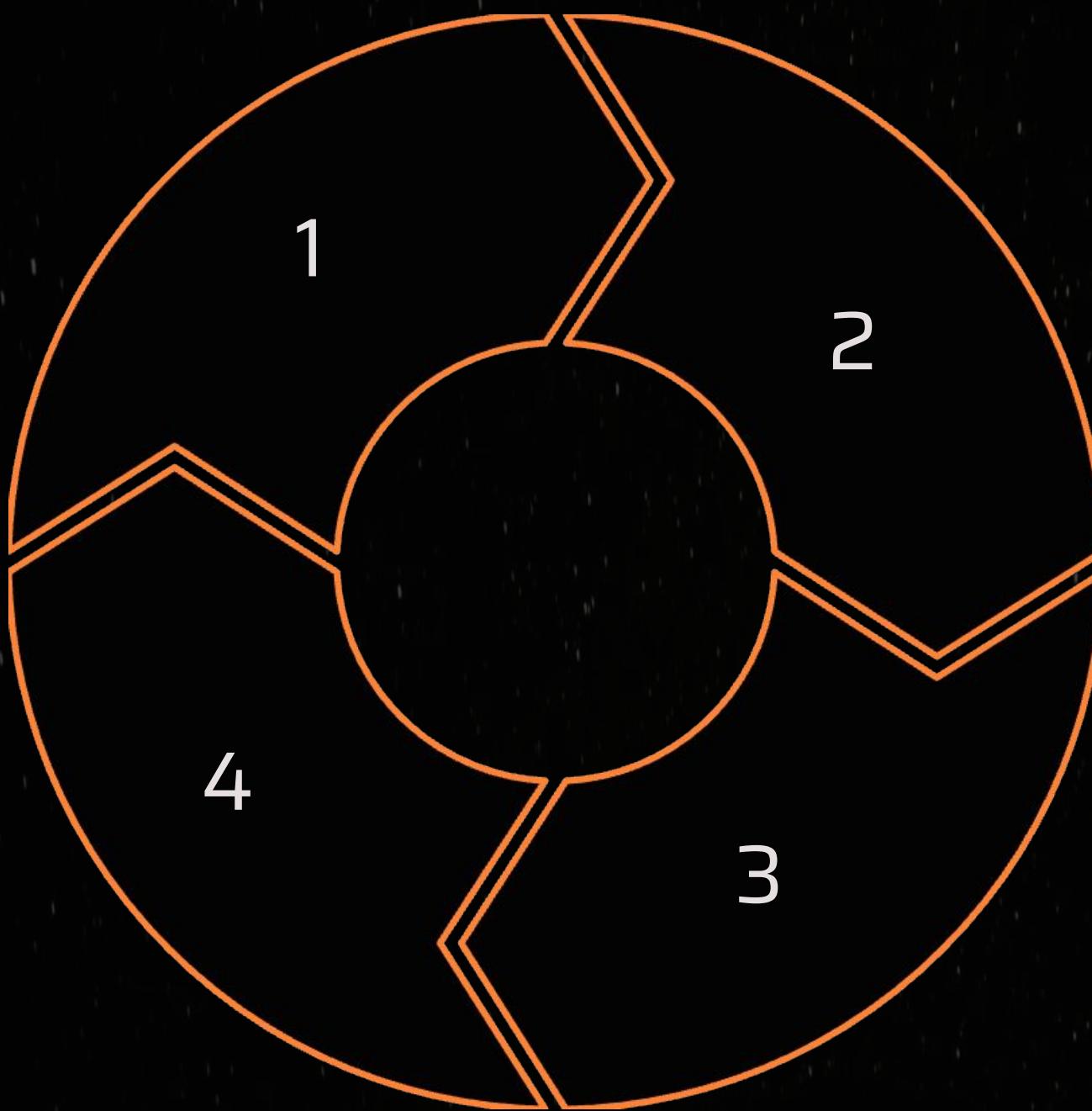
# Fine-Tuning: Customizing AI



Example: Taking a general language model and training it on medical journals to create a healthcare assistant.



# How Reinforcement Learning Works



## 1 Action

AI attempts a task

## 2 Feedback

Receives reward/penalty

## 3 Learning

Updates approach

## 4 Improvement

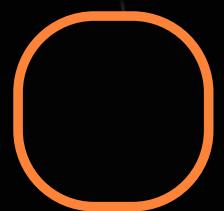
Performs better over time

Example: AI learns to play chess by receiving points for good moves and penalties for bad ones.



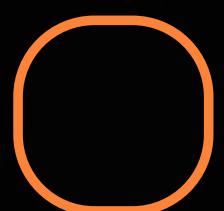


# AI Hallucinations: When AI Gets It Wrong



## Definition

When AI confidently presents incorrect or fabricated information as fact.



## Example

A chatbot confidently citing a non-existent research paper or inventing historical events.

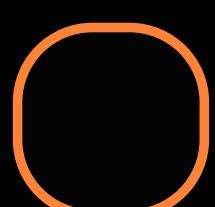


# Embeddings: AI's Secret Language



## Definition

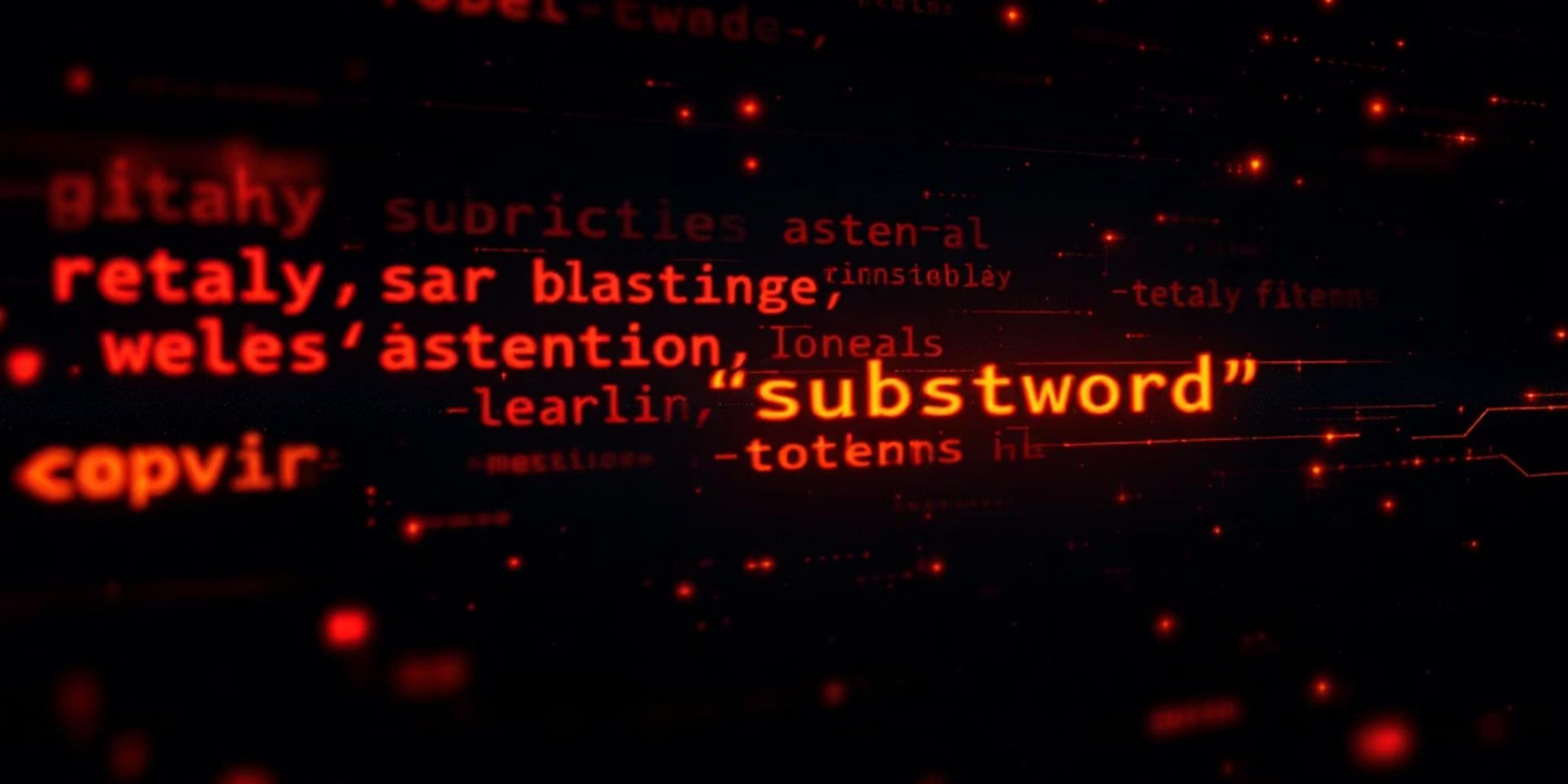
Numerical representations that capture relationships between concepts in multidimensional space.



## Example

Converting "king" and "queen" into vectors where their relationship mirrors male/female.





# Breaking Down

## Definition

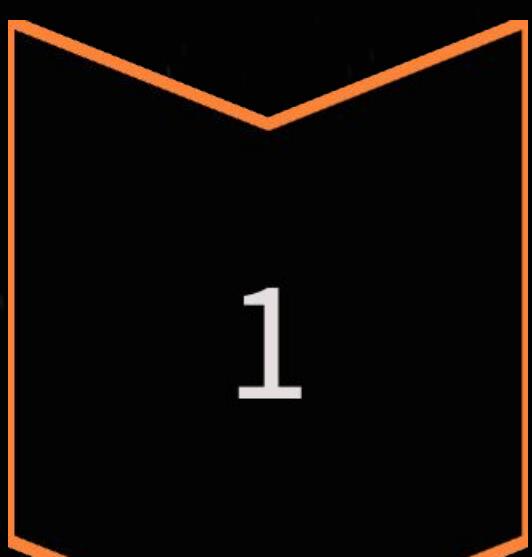
The process of splitting text into smaller units (tokens) that AI can process.

## Example

"TekGenie helps businesses" becomes ["Tek", "Genie", "helps", "business", "es"].



# Zero-Shot Learning: AI's Intuitive Leap



Traditional Learning

Requires examples of each class



Zero-Shot

Recognizes unseen categories

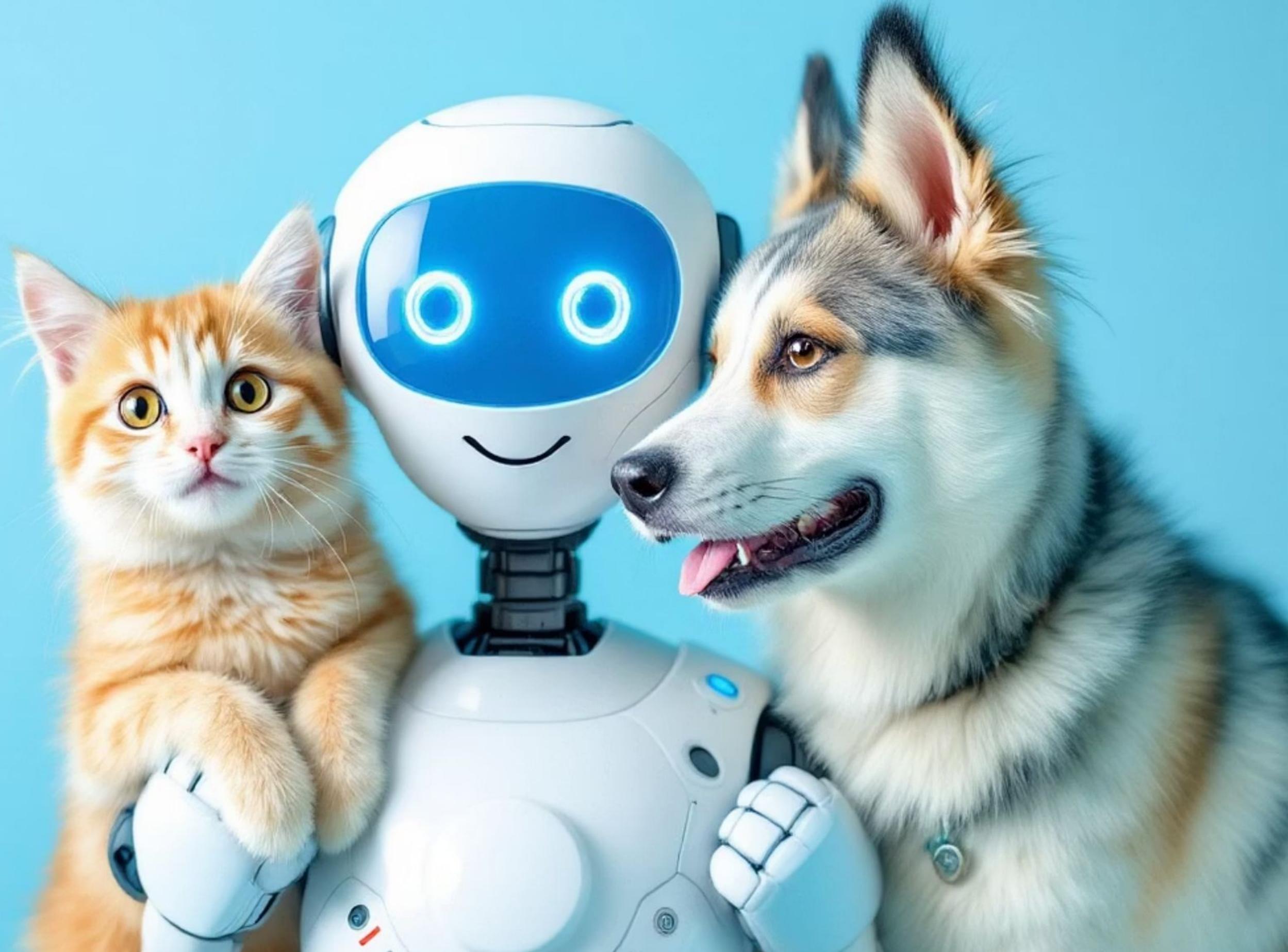


Application

Classifies without specific training

Example: An AI that's never seen a zebra can identify one by understanding "horse-like animal with black and white stripes".





# Transfer Learning: AI Reusing Knowledge

Transfer learning allows AI to leverage knowledge from one task to another new task. For example, an AI trained to identify cats adapts quickly to identify dogs, speeding development and cutting resource use.





# Overfitting: AI That's Too Specific

Overfitting happens when an AI memorises training data too closely, including noise. For instance, it may recognise only one specific cat breed, struggling when seeing new breeds or data outside training.



# Model Drift: AI Going Off Track

Model drift occurs when AI performance worsens as real-world data changes over time. Imagine a loan approval AI starting to wrongly reject valid applications.

**Regular checks and retraining fix this issue.**





# Latent Space: AI's Hidden World

Latent space is a complex, multi-dimensional area where AI represents data internally. It helps AI recognise subtle differences, like distinguishing dog breeds by clustering similar features closely together.





# Synthetic Data: AI's Fake Training Ground

Synthetic data is artificially generated info to train AI when real data is limited or sensitive. For example, creating images of damaged products helps train AI quality control systems without needing real defects.



# Explainable AI (XAI): AI You Can Understand

XAI reveals how an AI made a decision, building trust.

For example, it might show why a loan was rejected by highlighting factors like income or credit history for clear transparency.





# Federated Learning: AI Learning Together

Federated learning trains AI across multiple devices without sharing raw data. For instance, medical AI improves using patient data from hospitals while keeping data private and secure.





# Conversational AI: AI That Talks Back

Conversational AI simulates human dialogue, like customer service chatbots that answer questions and resolve issues, improving experiences and automating routine tasks efficiently.





# Multi-Modal AI: The Universal Translator

## What It Is

AI systems that can understand and process multiple types of data at once—like text, images, audio, and video.

## Real World Example

Self-driving cars that simultaneously process camera footage, radar signals, and GPS data to navigate safely.



# Data Labeling: Teaching AI to See



## What It Is

The process of adding identifying tags to data so AI knows what it's looking at.

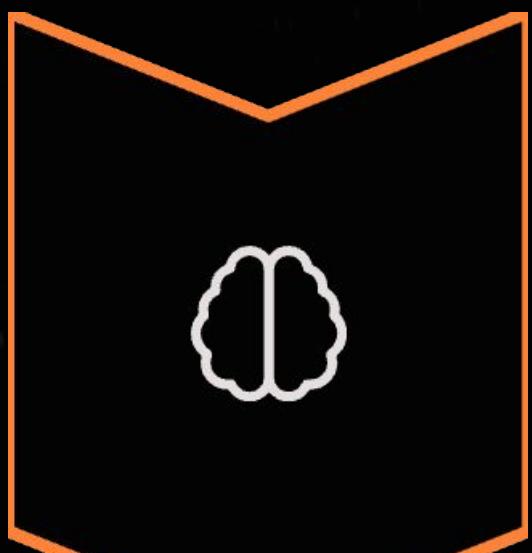


## Real World Example

Tagging thousands of cat photos so an AI can learn to recognize cats in new images.



# Inference: AI in Action



Training  
AI learns patterns



New Data  
Unknown information arrives

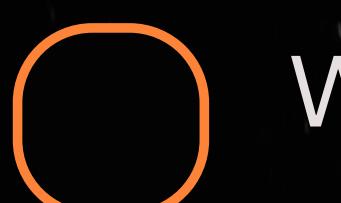


Inference  
AI makes predictions

Like a spam filter deciding whether a new email is junk based on what it's learned before.

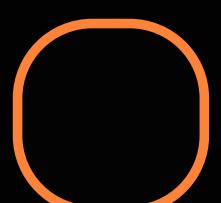


# Bias in AI: When Algorithms Play Favorites



## What It Is

When AI systems make unfair or prejudiced decisions because of flaws in their training data or design.



## Real World Example

Facial recognition systems that work better for lighter skin tones because they were trained mostly on those images.



# Training Pipeline: AI's Assembly Line

○ Data Collection

Gathering the raw information

○ Preprocessing

Cleaning and organizing the data

○ Model Training

Teaching the AI with patterns

○ Evaluation

Testing how well it works

Just like a factory production line, but for creating  
intelligence!





# Data Augmentation: Making More From Less

## What It Is

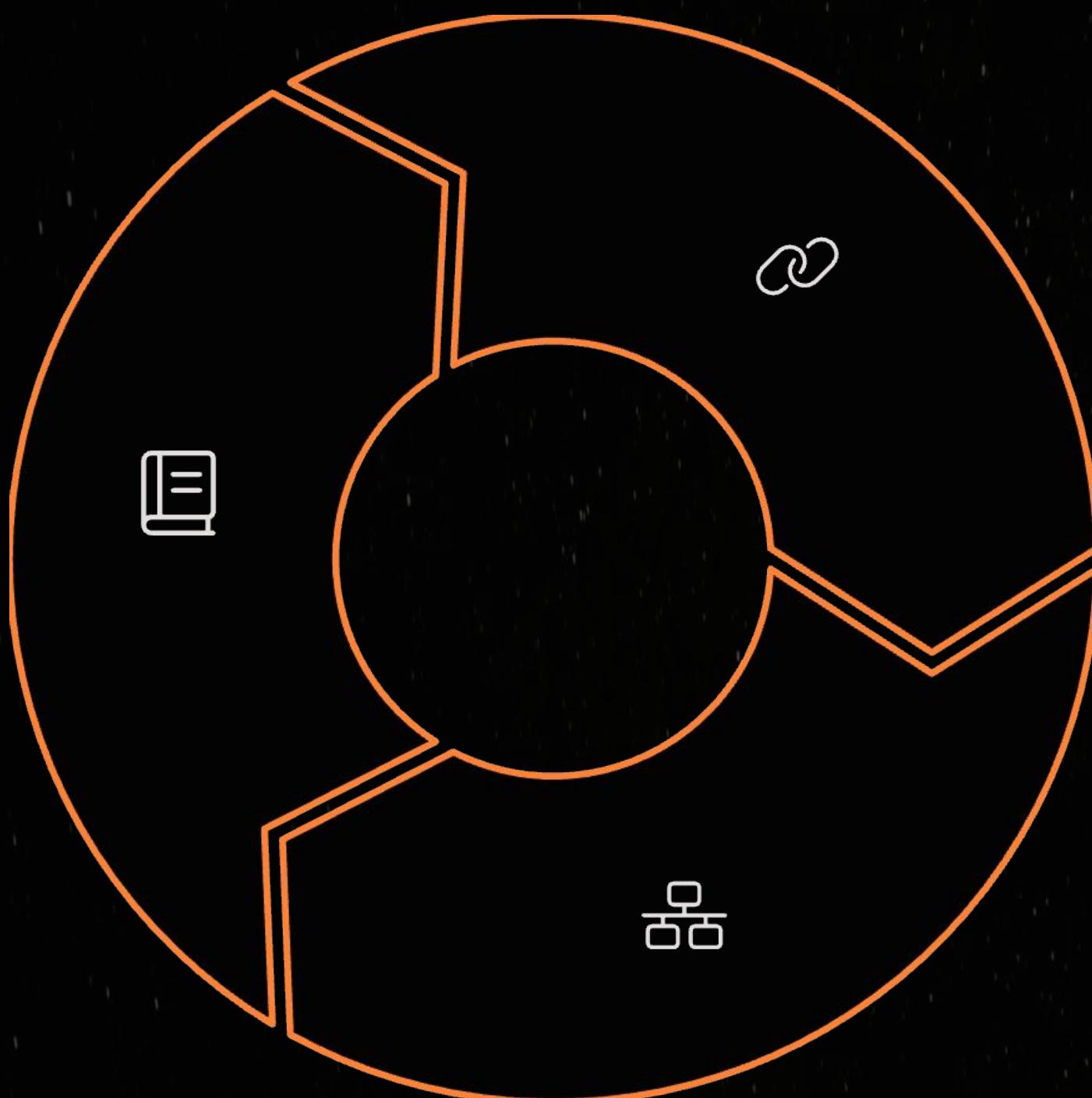
Creating variations of existing data to expand your training dataset without collecting new samples.

## Real World Example

Taking one photo of a dog and creating ten versions by flipping, rotating, or changing colors.



# Knowledge Graph: AI's Web of Facts



## Facts

Individual pieces of information



## Connections

Relationships between facts



## Network

The complete web of knowledge

Think of how Wikipedia articles link to each other, creating a massive interconnected network of knowledge.

# AutoML: AI Building AI

AutoML tools let anyone create AI models without coding - just like using a website builder instead of writing HTML.

From Google's AutoML to AWS SageMaker, these platforms are democratising AI development.

Share this jargon buster with your tech-curious friends who want to understand AI without the confusing terminology!





# Hyperparameter Tuning

## What It Is

The process of finding optimal settings for AI model performance.

## In Simple Terms

Adjusting various knobs until your AI performs at its best.

## Real-World Example

Like tuning a guitar string until you get the perfect pitch.





# Model Compression

## What It Is

Reducing AI model size without sacrificing performance.

## In Simple Terms

Making AI models smaller, faster, and more efficient.

## Real-World Example

Like compressing a large file to send via email.



# Foundation Model



## What It Is

Powerful AI pre-trained on vast amounts of data.



## In Simple Terms

A versatile starting point for many specialized AI tasks.



## Real-World Example

Like a chef mastering basic techniques before specializing.





# Out-of-Distribution (OOD)

## What It Is

Data completely unlike what the AI was trained on.

## In Simple Terms

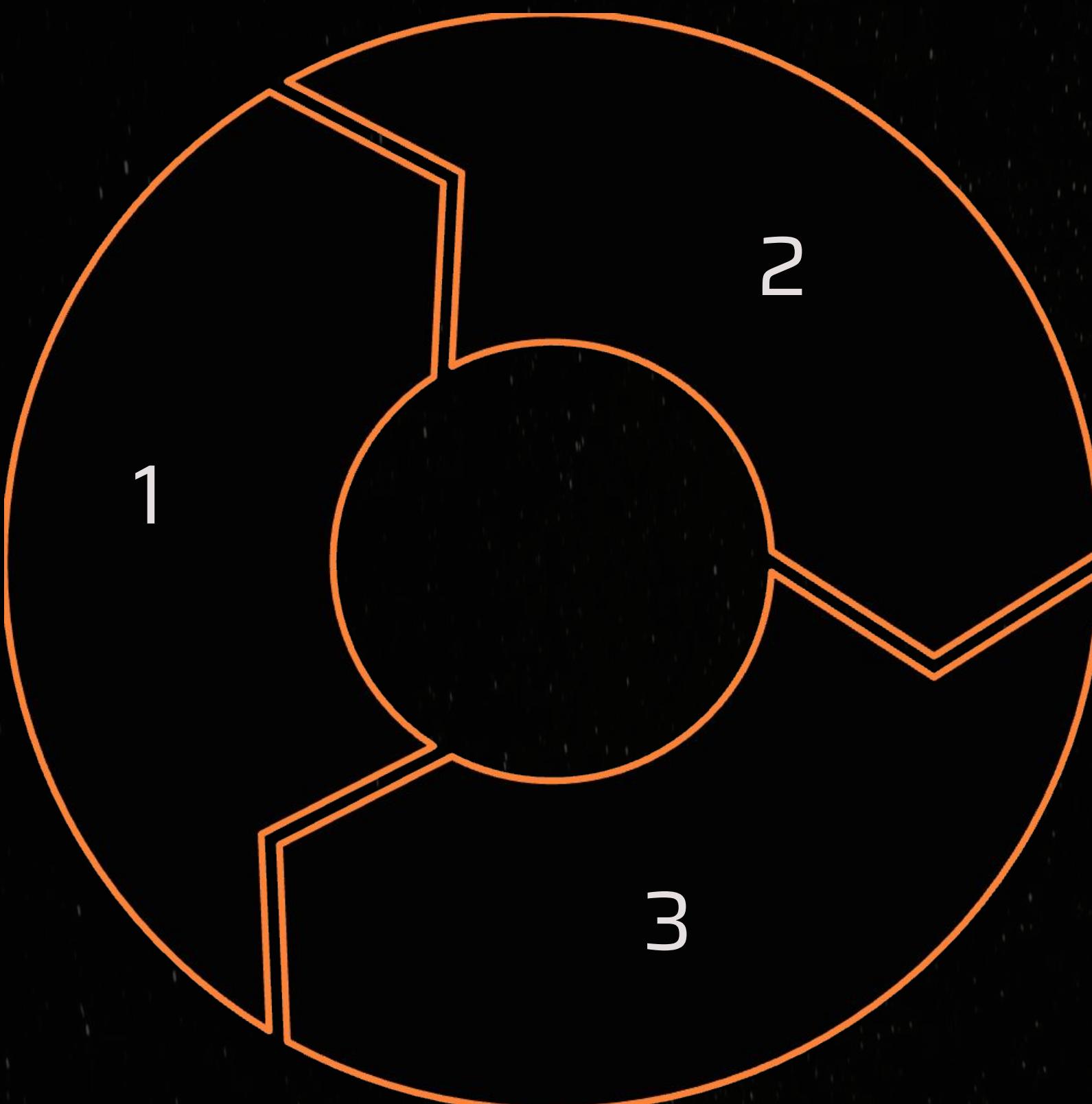
Unexpected scenarios an AI must handle without preparation.

## Real-World Example

A self-driving car encountering a snowstorm for the first time.



# Self-Supervised Learning



## 1 What It Is

AI learning from unlabeled data without human guidance.

## 2 In Simple Terms

AI teaching itself by finding patterns in raw data.

## 3 Real-World Example

Learning a language through immersion rather than classes.





**important**

## Attention Mechanism



### What It Is

Technique for focusing on important parts of input data.



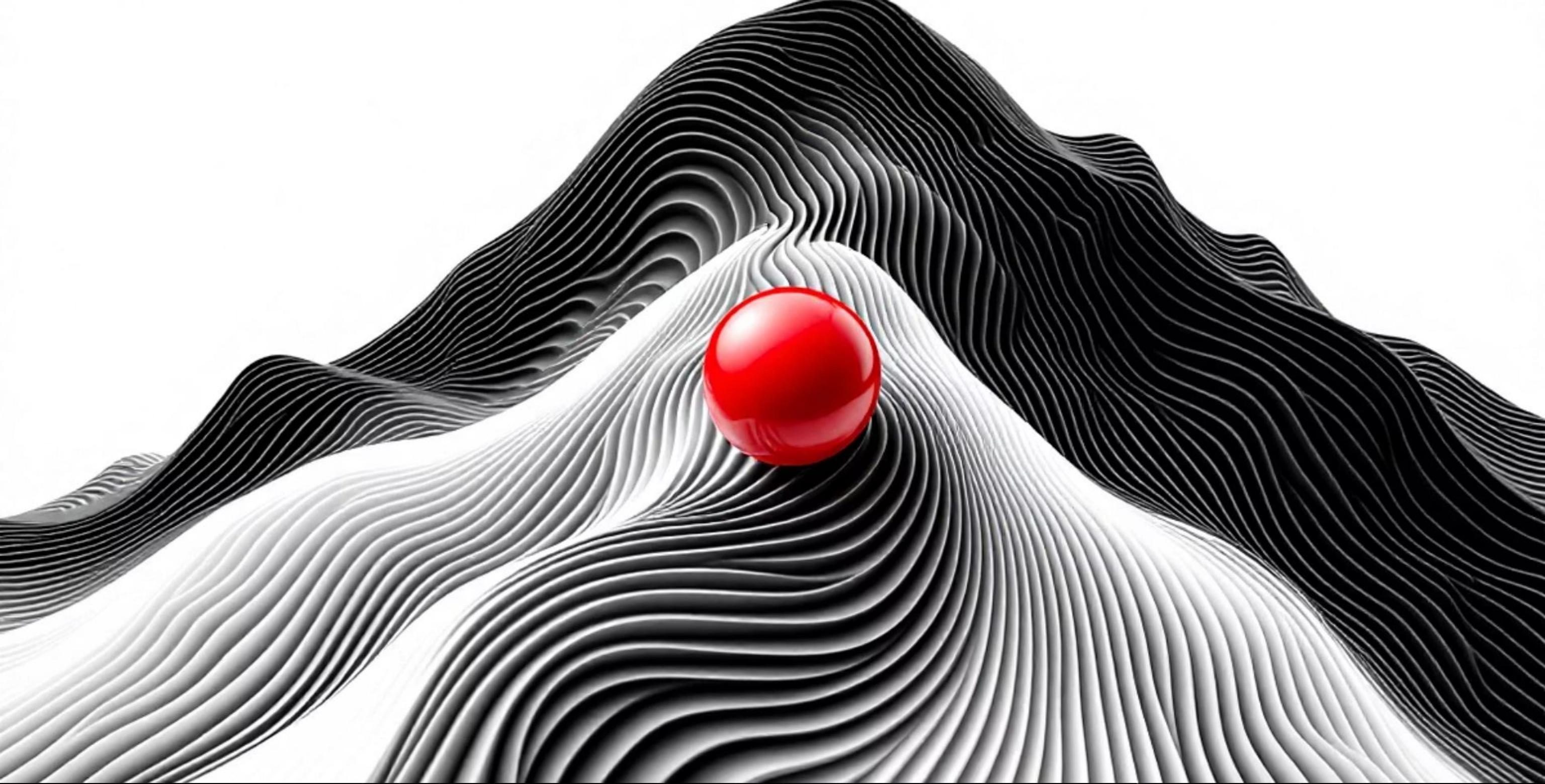
### In Simple Terms

AI prioritizing what matters most in a sea of information.



### Real-World Example

Highlighting key sentences while reading a complex book.



# Gradient Descent

## What It Is

Optimization algorithm for finding minimum error values.

## In Simple Terms

Step-by-step approach to minimize mistakes in AI predictions.

## Real-World Example

Like a ball rolling down a hill to find the lowest point.





# Responsible AI



## What It Is

Developing AI with ethics, safety, and fairness in mind.



## In Simple Terms

AI that is fair, accountable, and transparent to all users.



## Real-World Example

Ensuring AI hiring tools don't discriminate against candidates.





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