



AI Terminologies for Everyone

Core AI Concepts

Artificial Intelligence (AI)	Machines performing human-like intelligence
Machine Learning (ML)	AI that learns from data
Deep Learning	ML using multi-layer neural networks
Model	A trained system that makes predictions
Algorithm	Step-by-step rules to solve problems
Intelligence	Ability to learn, reason, and adapt
Automation	Tasks performed without human effort
Prediction	Forecasting future outcomes
Pattern Recognition	Identifying trends in data
Decision System	System that selects actions based on data

AI Systems & Deployment

Inference	Running model predictions
API	Interface to use AI services
Pipeline	End-to-end AI workflow
MLOps	Managing ML in production
Model Serving	Making models available
Latency	Response time
Scalability	Handling increased load
Monitoring	Tracking model behavior
Drift	Model performance decay
Retraining	Updating the model

Learning Types

Supervised Learning	Learning from labeled data
Unsupervised Learning	Learning from unlabeled data
Semi-Supervised Learning	Mix of labeled and unlabeled data
Reinforcement Learning	Learning via rewards and penalties
Online Learning	Learning continuously from new data
Batch Learning	Learning from fixed datasets
Transfer Learning	Reusing knowledge from another
Self-Learning	Learning without human guidance
Active Learning	Model asks for required data
Curriculum Learning	Learning from simple to complex tasks

NLP & Language Models

Natural Language Processing	AI understanding human
Token	Smallest text unit
Tokenization	Splitting text into tokens
Large Language Model (LLM)	AI trained on massive text
Prompt	Input given to AI
Prompt Engineering	Designing effective prompts
Context Window	Amount of text AI remembers
Embedding	Numeric representation of text
Semantic Search	Search by meaning
Text Generation	Creating new text

Data & Datasets

Data	Raw facts used by AI
Dataset	Collection of data
Training Set	Data used to train a model
Validation Set	Data used to tune a model
Test Set	Data used to evaluate a model
Labeled Data	Data with known outcomes
Unlabeled Data	Data without outcomes
Structured Data	Organized data (tables)
Unstructured Data	Text, images, audio
Data Preprocessing	Cleaning and preparing data

Generative AI

Generative AI	AI that creates content
Text-to-Text	Text input → text output
Text-to-Image	Text input → image output
Image Generation	Creating images via AI
Diffusion Model	Image generation technique
Autoregressive Model	Predicts next token
Creativity	Generating novel outputs
Hallucination	AI generates incorrect output but thinks it's right
Sampling	Selecting output probabilities
Temperature	Controls randomness of output

Model Internals

Neural Network	Brain-inspired model
Layer	Processing stage in a network
Input Layer	Receives data
Hidden Layer	Intermediate processing layer
Output Layer	Produces final result
Weight	Value controlling influence
Bias	Adjustment value in a model
Parameter	Learned internal value
Hyperparameter	Tuned configuration value
Activation Function	Adds non-linearity to a model

Agents & Advanced Concepts

AI Agent	AI that plans and acts
Tool Calling	AI using external tools
Autonomous Agent	Self-directed AI
Memory	Retained information
Planning	Deciding action steps
Reasoning	Logical problem solving
Multi-Agent System	Multiple agents working together
Feedback Loop	Output influencing input
Chain-of-Thought	Step-by-step reasoning
Decision Policy	Rules guiding actions

Model Training & Performance

Training	Teaching the model
Epoch	One full training cycle
Loss Function	Measures prediction error
Optimization	Improving model accuracy
Gradient Descent	Method to reduce errors
Overfitting	Model memorizes data
Underfitting	Model learns too little
Accuracy	Correct prediction rate
Precision	Correct positive predictions
Recall	Ability to find all positives

Ethics, Risk & Governance

AI Ethics	Responsible AI use
Bias	Skewed or unfair output
Fairness	Equal treatment across groups
Transparency	Visibility into AI behavior
Explainability	Understanding AI decisions
Accountability	Responsibility for AI outcomes
Privacy	Protection of personal data
Security	Safeguarding AI systems
Compliance	Meeting regulations
Human-in-the-Loop	Humans involved in AI decisions

