

AI Terminology Cheatsheet

Core AI Concepts

Term	Definition	Use Case Example
Artificial Intelligence (AI)	Computer systems able to perform tasks that typically require human intelligence	Virtual assistants like Siri, autonomous vehicles, recommendation systems
Machine Learning (ML)	AI approach where systems learn patterns from data without explicit programming	Email spam filters, product recommendations, fraud detection
Deep Learning	ML technique using neural networks with multiple layers to learn complex patterns	Image recognition, natural language processing, game playing AI
Neural Network	Computing systems inspired by human brain structure that learn from data	Speech recognition, medical diagnosis, financial forecasting
Training	Process of teaching an AI model using data to optimise its performance	Creating a sentiment analysis model using tagged social media posts
Inference	Using a trained model to make predictions on new data	Using a trained model to identify objects in new photos
Fine-tuning	Process of adapting a pre-trained model for a specific task	Adapting a general language model for legal document analysis
Overfitting	When a model learns training data too well, including its noise/anomalies	A model that performs perfectly on training data but poorly on new data
Bias	Systematic errors in AI systems resulting from unrepresentative training data	A facial recognition system that performs poorly on certain demographics

Generative AI & Language Models

Term	Definition	Use Case Example
Generative AI	AI systems that create new content (text, images, audio, video)	Text generation, image creation, music composition
Foundation Model	Large AI model trained on vast datasets that can be adapted for many tasks	GPT, Claude, DALL-E, Midjourney, Stable Diffusion
LLM (Large Language Model)	AI systems trained on massive text data to understand/generate human language	ChatGPT, Claude, writing assistants, customer service bots
Prompt	Input text that guides an AI system to generate specific outputs	"Write a marketing email for a new coffee shop"
Prompt Engineering	Crafting effective inputs to get desired outputs from AI systems	Creating detailed prompts with context for accurate AI responses
Token	Basic unit of text processing in language models (often parts of words)	The sentence "I love AI" might be processed as tokens: "I", "love", "A", "I"
Temperature	Parameter controlling randomness/creativity in AI outputs (higher = more diverse)	Low temperature for factual answers, high for creative writing
Hallucination	When AI generates false or misleading information presented as factual	An AI confidently providing an incorrect date for a historical event
Multimodal AI	AI systems that can process and generate multiple types of data (text, images, etc.)	Systems that can analyse images and generate text descriptions

Computer Vision & Image Generation

Term	Definition	Use Case Example
Computer Vision	AI field focused on enabling computers to interpret visual information	Facial recognition, object detection, medical image analysis
Image Generation	AI creating new images from text descriptions or other inputs	Creating product mockups, concept art, and marketing materials
Diffusion Models	Type of generative model that gradually transforms random noise into coherent images	Stable Diffusion, DALL-E, Midjourney
Style Transfer	Technique to apply the visual style of one image to the content of another	Transforming photos to look like famous paintings
Inpainting	Filling in missing or masked parts of an image	Removing unwanted objects from photos, restoring damaged images
Outpainting	Extending an image beyond its original boundaries	Expanding the canvas of an existing artwork or photo

AI Development & Deployment

Term	Definition	Use Case Example
Dataset	Collection of data used to train and evaluate AI models	ImageNet for image recognition, MNLI for natural language inference
Supervised Learning	Training with labelled data where the correct answers are provided	Teaching a model to identify spam emails using labeled examples
Unsupervised Learning	Training with unlabeled data to find patterns and relationships	Customer segmentation based on purchasing behaviors
Reinforcement Learning	Training models through reward/penalty systems based on actions	Teaching AI to play chess by rewarding winning moves
API (Application Programming Interface)	Interface allowing applications to access AI model capabilities	Integrating ChatGPT into a customer service platform
MLOps	Practices for deploying and maintaining ML systems in production	Automating model retraining, monitoring, and deployment
Edge AI	Running AI models on local devices rather than in the cloud	Face recognition on smartphones, voice assistants in smart speakers

Ethical & Safety Terms

Term	Definition	Use Case Example
AI Ethics	Study of moral issues related to AI development and use	Establishing guidelines for fair AI hiring systems
Responsible AI	Approach to developing AI that prioritizes fairness, safety, and transparency	Creating diverse training datasets to reduce bias
Explainability/Interpretability	How understandable an AI's decision-making process is to humans	Using models that can explain why a loan application was rejected
AI Alignment	Ensuring AI systems act in accordance with human values and intentions	Designing content filters that prevent harmful outputs
Data Privacy	Protection of personal information used in AI systems	Anonymizing personal health data used to train medical AI
Synthetic Data	Artificially generated data that mimics real data but protects privacy	Creating simulated patient records for healthcare AI training