

■ Transformers Library - Key Components Cheat Sheet

Component	Purpose
AutoTokenizer	Converts raw text into tokens & token IDs; handles padding, truncation, and special tokens.
AutoModel	Loads the base model architecture (e.g., BERT) without a task-specific head; useful for embeddings.
AutoModelFor...	Loads a model with a task-specific head (e.g., classification, QA, translation, generation).
pipeline	High-level abstraction for running common tasks (e.g., sentiment-analysis, summarization).
AutoConfig	Loads or customizes model configuration (architecture parameters, label mappings, dropout).
Trainer	Simplifies training/fine-tuning; handles logging, checkpointing, evaluation, and distributed training.
TrainingArguments	Stores all hyperparameters and settings for Trainer (batch size, epochs, learning rate).
Processor	For multimodal models; combines tokenizer + feature extractor (e.g., CLIPProcessor for text+image).
Feature Extractor	Preprocesses non-text data (images, audio) into model-ready tensors.
Generation Utilities	Methods like .generate() for text generation with decoding strategies (greedy, beam search).
Datasets (■ Datasets)	Integration for loading, preprocessing, and batching data for training/inference.