Analytics Vidhya

# Document Splitters and Chunkers

Instructor

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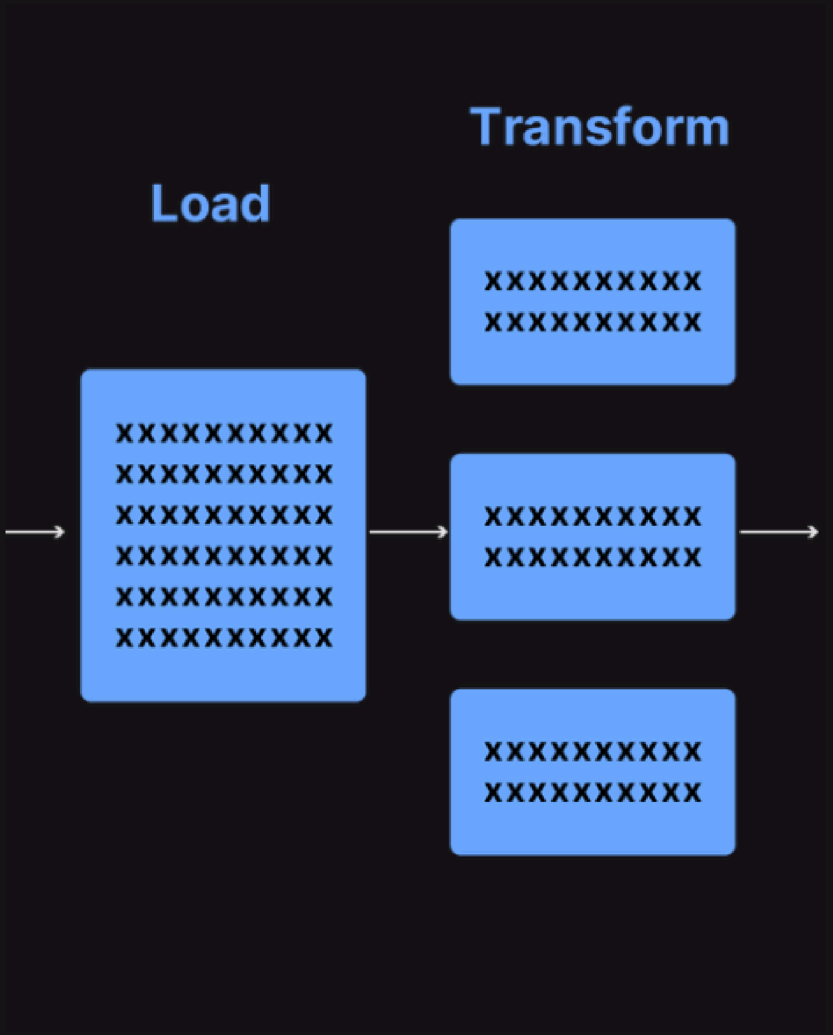
# Outline

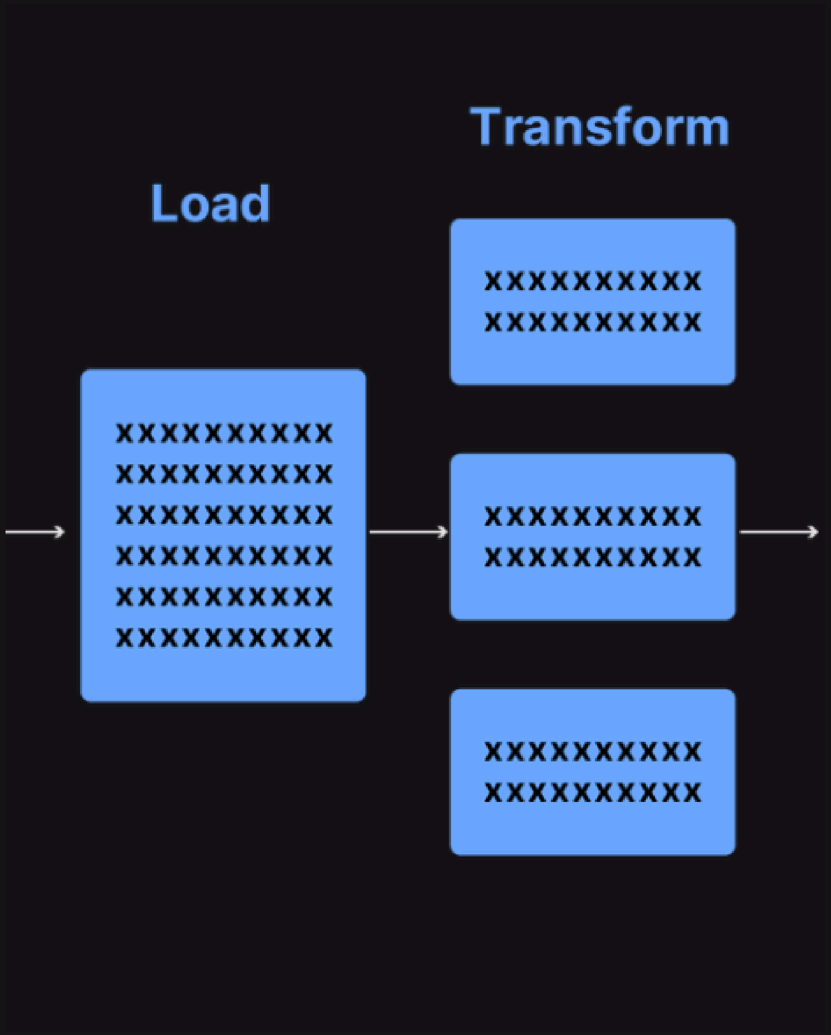
- Document Splitters and Chunkers
- How does a Splitter work?
- Popular Built-in Document Splitters in LangChain

# Document Splitters and Chunkers



- LangChain supports various document splitting and chunking mechanisms for transforming documents
- Splitting documents into smaller chunks or paragraphs enables them to fit into your LLM’s context window
- Documents can be split based on various methods such as:
  - sections
  - character count
  - token counts

# How does a Splitter work?



- At a high level, text splitters work as follows:
  - Split the text into small, semantically meaningful chunks
  - Combine these small chunks into a larger chunk until you reach a certain size based on character count or token count
  - Once you reach that size, make that chunk its own piece of text and then start creating a new chunk of text with or without chunk overlaps
- Key aspects of splitting:
  - Splitting strategy - Character, Tokens, Semantic, Sectional etc.
  - Chunk size measurement - Character or Token counts

# Popular Built-in Document Splitters in LangChain

| Splitter Type | Description |
|---|---|
| RecursiveCharacterTextSplitter | Recursively splits text into larger chunks based on several defined characters. Tries to keep related pieces of text next to each other. LangChain's recommended way to start splitting text |
| CharacterTextSplitter | Splits text based on a user defined character. One of the simpler text splitters |
| tiktoken | Splits text based on tokens using trained LLM tokenizers like GPT-4 |
| spaCy | Splits text using the tokenizer from the popular NLP library - spaCy |
| SentenceTransformers | Splits text based on tokens using trained open LLM tokenizers available from the popular sentence-transformers library |
| unstructured.io | The unstructured library allows various splitting and chunking strategies including splitting text based on key sections and titles |

# Thank You