1. **Dimensionality reduction**
   1. Process of reducing the number of features (dimensions) in a dataset while retaining as much relevant information as possible.
      1. data easier to analyze, visualize, and process efficiently.
   2. Curse of dimensionality
   3. Computational efficiency
   4. Noise reduction
   5. Better visualization
2. **Word2Vec**
   1. is a neural network-based model that learns word embeddings by predicting a word’s context (CBOW) or predicting a word from its context (Skip-gram), capturing semantic relationships in a vector space.
3. **Skip Thought Vectors**
   1. Unsupervised sentence embedding model -> predict the surrounding sentences in a text, capturing contextual meaning like how Word2Vec predicts words.
4. **FastText**
   1. Extension of Word2Vec that represents words as subword n-grams
5. FAISS (**Facebook AI Similarity Search**) is an **efficient library for fast nearest neighbor search in high-dimensional spaces**. It is designed to **search, index, and retrieve** similar vectors (e.g., word embeddings, image features, document representations) at **scale**.