**HTM (Hierarchical Temporal Memory) Classifiers:** It is inspired by the structure and function of the neocortex in the brain. It is designed to learn patterns, make predictions, and recognize anomalies in data set. It is based on Unsupervised Learning.

Encoders, Spatial Pooler, Temporal Memory and Anomaly detection and Prediction are major component of HTM

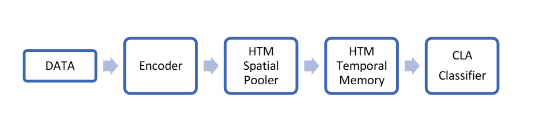


Figure 2: Components of HTM

**Core Concepts of HTM**

**Biological Inspiration**: HTM is modelled after how the neocortex processes information. It seeks to mimic brain functions like pattern recognition, memory storage, and sequence prediction.

**Sparse Distributed Representations (SDRs):**

SDRs are the core data structure in HTM, representing information as sparse binary vectors.

Only a small percentage of the bits in an SDR are active (1), which makes the representation robust, efficient, and noise-resistant.

SDRs enable HTM systems to process and store high-dimensional information.

Temporal Sequences: HTM emphasizes learning temporal sequences, which means understanding the order and timing of patterns. This is crucial for predicting future events based on past data.

**Hierarchical Organization**:

HTM systems are hierarchical, meaning they process information at multiple levels of abstraction.

Lower levels detect simple patterns, while higher levels combine these patterns to identify more complex relationships.