

In terms of learning patterns and representations (**pattern recognition**), the model learns patterns and structures within the textual and visual data during training. This acquired knowledge is stored as a memory that can be used to generate coherent and contextually relevant video content based on textual input.

For sequential context, it applies a **temporal memory**: Text-to-video models often understand the sequential nature of information. They remember the order of events and the temporal relationships between elements in the input text to generate videos that unfold in a logical and coherent manner. Although with dream descriptions the ‘logical and coherent’ tends to become undermined.

Semantic Memory: The model builds a semantic memory of the relationships between words, phrases, and visual elements. This allows it to create videos that reflect a deeper understanding of the meaning and context encoded in the input text (in our case, this is input text is your dream description).

Contextual Memory: The model memorizes contextual information from the training data, enabling it to adapt its video generation based on the specific context provided in the input text. This helps in creating videos that align with the intended narrative.

Cross-Modal Memory: Generative AI models often learn to associate textual and visual information. The memory of these cross-modal associations allows the model to translate textual concepts into corresponding visual elements in a way that is consistent with its training data.

Transfer Memory: The model may apply knowledge gained from training on a *diverse* dataset, allowing it to transfer this learned memory to generate videos for a wide range of textual inputs. This transfer of knowledge enhances the model's adaptability to various contexts.

Adaptive Memory: Text-to-video models can be fine-tuned on specific datasets to enhance their memory of domain-specific information. This adaptability allows the model to generate videos that are more aligned with the characteristics of the target domain (in our case that conceptual domain is; *what do our dreams look like?*)

Error Memory: During the training process, the model learns from its mistakes and refines its understanding. This learning from errors serves as a memory that helps the model improve its video generation capabilities over time.