***Software Engineering***

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*Migration of video learning project*

*Abstract*: This paper represents an improving machining learning algorithm Hierarchical Temporal Memory (HTM) which is using Spatial pooler for learning Video data. The SP model shows how neurons learn by feedforward connections and form effective classification of the input frame. It converts binary input pattern into space distributed representation (SDR) by using Cortical Learning rules and homeostatic plasticity control for frame pattern prediction. The result of the learning is tested by giving the trained model an arbitrary image, the model then tries to recreate a video with proceeding frame after the input frame.

Keywords—homeostatic plasticity controller, formatting, division into frames, prediction, training & testing

# **Introduction**

The HTM (Hierarchical Temporal Memory) spatial pooler involves different computational principles of the cortex. It depends on competitive Hebbian learning, homeostatic excitability control, topology of connections in sensory cortices and structural plasticity. The HTM Spatial pooler is developed in such a way to achieve a set of computational properties which includes 1. Preserving topology of the input space by mapping similar inputs to similar outputs 2. Continuously adapting to changing statistics of the input stream 3. Forming fixed sparsity representations 4. Being robust to noise and 5. Being fault tolerant that supports computations with SDRs (Sparse Distributed Representations). The output of the SP which is the integral component of HTM can be easily recognized by downstream neurons and contribute to improved performance in the end-to-end HTM system.

This type of works forecasting that Machine Learning (ML) or statistical modelling emphasis here is to enable the reader to understand on some of ML or statistical techniques actively used in past and till the present moment.

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*a**b* 

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* The subscript for the permeability of vacuum **0, and other common scientific constants, is zero with subscript formatting, not a lowercase letter “o”.
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| Table Head | Table Column Head | | |
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