

Εκφραστική υλοποίηση των αλγορίθμων HTM ως βάση για περαιτέρω ανάλυση

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1 Overview

1. Why HTM?
2. Algorithms in flux, need a solid platform for experimentation
3. Julia & linear algebra (but hebbian learning not well expressed as linear algebra)
4. Why Julia?
5. *A guiding question!* (Multivariate prediction?)

2 HTM Details

- Understanding HTM is a significant part of this work

3 Implementation

- Base: previous implementations htm.matlab, nupic
- SP details (expressivity, performance)
- TM details

4 Results

- A Julia package
- Upstream bug fixes (1)

5 Open questions

1. **Temporal noise tolerance:** Temporal pooling
2. TP happens at sensorimotor object recognition
3. no need for location coding in the 1D context of a time series
4. no mechanism for continuous learning (defining object boundaries)
 - surprise? (see column bursting)