Adaptive resonance theory: ART

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Terminology

- Short-term memory (STM)
- Long-term memory (LTM)
- Attentional subsystem
- Orienting subsystem

Mechanism

- Orchestrate the search for template matches
- Determine what constitutes a template mismatch

Sequence of events

- The F_2 node that responds most strongly to the input I is active while all others are inactive.

- The F_1 gain control allows the input to be transmitted to F_2 under the 2/3 rule. The orienting subsystem is not active.

- If a match occurs then resonance takes place, otherwise F_2 is reset and new template is read out.

The ART family

- ART1
- ART2
- ARTMAP
- ART3

Applications

- Boeing – classification of parts (ART)

- Classification of black-and-white printer characters (ARTMAP)

- Modelling of brain function