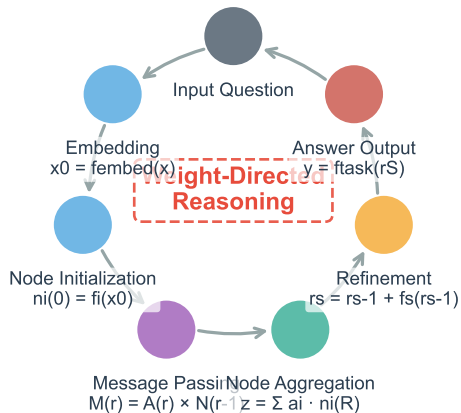
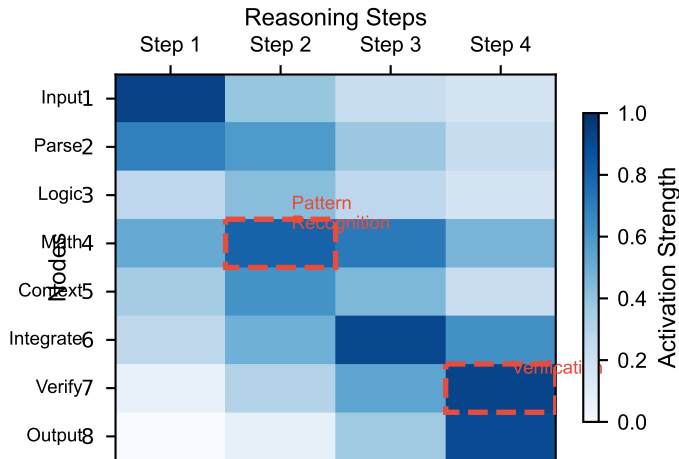


Weight-of-Thought Reasoning Process: Step-by-Step Analysis

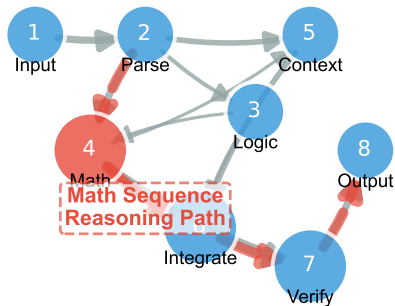
(a) Weight-Directed Reasoning Process



(b) Node Activation Patterns



(c) Message Passing Dynamics



(d) Computational Trace for Sequence Problem

Input Sequence: [2, 4, 8, 16, 32, ?]

Step 1 (Parse): Numerical sequence identified

Step 2 (Math): Pattern analysis:

$$4/2 = 2, 8/4 = 2, 16/8 = 2, 32/16 = 2$$

→ Geometric sequence with ratio $r = 2$

Step 3 (Integration): Apply pattern:

$$a_n = a_{n-1} \cdot r^{(n-1)} = 2 \cdot 2^{(5-1)} = 2 \cdot 16 = 32$$

$$a_{(n+1)} = a_n \cdot r = 32 \cdot 2 = 64$$

Step 4 (Verification): Cross-check ratio pattern:

$$2 \times 2 = 4 \checkmark$$

$$4 \times 2 = 8 \checkmark$$

$$8 \times 2 = 16 \checkmark$$

$$16 \times 2 = 32 \checkmark$$

$$32 \times 2 = 64 \checkmark$$

Output: Next number is 64