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Rev A. 3.1

Variables (matrices, vectors, agency)				
ID	Size	Type	Module	Purpose
A	3x4	matrix		
B	4x4	matrix		
C	3x4	matrix		
D	3x4	matrix		
E	3x3	matrix		
F	3x4	matrix		
G	3x4	matrix		
H	N/A	human mind	human knowledge	
I	(27x3) ⁿ	matrix		
J	3x4	matrix		
K	4x3	matrix		
L	(27x3) ^r	matrix	agency knowledge validation	
M	27x3	matrix	not assigned	
N	(27x3) ^s	matrix	agency responsible output	
Ω	(27x3) ^t	matrix	not assigned.	
P				
Q	3x3	matrix		
R	3x3	matrix		
S	3x1	vector		
T	4x3	matrix		
U	9x3	matrix		
V			vectors f1-X to datalake	
W	9x3	matrix	agency lessons learnt.	
X	4x4	matrix		✓ ∈ datalake.
Y	4x4	matrix		
Z	4x4	matrix		
Y _{100B}	LLM	Language Model	governing AI parameters	
β	Knowledge graph	KG	Bi	knowledge base AI
τ	Hypergraph	HG	T _{ii}	task-oriented AI

6 Procedural Knowledge Generation by Semantic Matrix Operations in a Reinforcement Learning by Human Feedback. Artificial Agency Framework:
The Chirality Frame work⁹⁹

Identity

Operation

Function

Hyper space.

$$1,1 A \rightarrow A$$

$$1,2 (B)_t \rightarrow J$$

$$1,3 A \cdot B = C$$

$$1,4 f[X]_0^2 \rightarrow \text{datasheet}$$

object space

$$2,1 B \rightarrow B$$

$$2,2 \{C\}^2 \rightarrow Y$$

$$2,3 A + (B)_t + \{C\}^2 = D$$

$$2,4 f[F]_0^3 \rightarrow \text{procedure}$$

subject space

$$3,1 A + J + Y = F$$

$$3,2 \{D\}^3 \rightarrow F$$

$$3,3 K \cdot J = X$$

$$3,4 f[I]_0^3 \rightarrow \text{how-to guide}$$

solution space

$$4,1 (X_{4x4}, X_{256}) \in \mathcal{X}$$

$$4,2 [F]_T \rightarrow K$$

$$4,3 G \cdot T = E$$

$$4,4 f[W]_0^4 \rightarrow \text{lessons learnt}$$

evaluation space

$$5,1 X_{4x4}, X_{256} \in V$$

$$5,2 \{X\}^3 \rightarrow Z$$

$$5,3 R \times Q = M$$

$$5,4 f[X]_0^4 \rightarrow \text{data science.}$$

RLHF space.

$$6,1 S \times Q = U$$

$$6,2 (Z)_t \rightarrow G ; X_{4x4}$$

$$6,3 X^{(n)}_{\text{row } 4}$$

$$6,4 f[\mathcal{I} - L]_0^m \rightarrow \text{solution iteration}$$

solution path space

$$7,1 I - L = E$$

$$7,2 [J]_T \rightarrow T$$

$$7,3 I - L = E$$

Identity

Operation.

Function.

Hyper space.

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ID	size	type	module	Purpose
E	(27x3) ¹	blue		error function.
X		blue		problem solving & learning

$$f[Y]^2 \in V$$

$$L \rightarrow \Omega$$

$$f[F]^3 \in V$$

$$\{E\}^3 \rightarrow Q$$

$$f[I]^3 \in V$$

$$(F)_t \rightarrow R ; S$$

$$f[W]^4 \in V$$

$$\{M\}^3 \rightarrow I$$

$$(A, B, L, \Omega) \in H$$

$$\sum_u \{u\}^4 \rightarrow W$$

$$((), \{ \}_+, \{ \}_-, \epsilon, f[\cdot]_c, (\gamma, \beta, \tau, \Omega) \rightarrow X$$

$$((4, 1, 2, 3), \{ \}_+, \{ \}_-, \epsilon, f[\cdot]_c, (\gamma, \beta, \tau, \Omega) \rightarrow X$$

$$(L, I, \epsilon, \Omega) \in V$$

$$(X_{4 \times 4})_t \rightarrow X_{256}$$

$$(X_{10 \times 4})^{4 \times 4 \times 4 \times 4 \times 4 = 256}_{\text{element}(4, 1)}$$

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Identity

Operation

Function

Hyperspace

ID: Size type module

Purpose

$\gamma \in \chi$

$\beta \in \chi$

$\tau \in \chi$

$\Omega \rightarrow \Omega$

15,

LCH

16,

17,

$\tau \in \chi$

18,

$\beta \in \chi$

$\gamma \in \chi$

2

3

4

Rev A.3.1

OPERATIONS

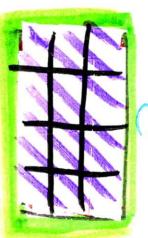
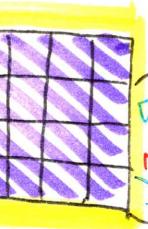
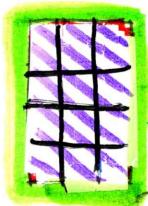
DECISIONS

$$(1,3) \quad A \cdot B = C = Y$$

$$(B \cdot 2, 1)$$

$$(2, 2) \quad \{C\}^2 \rightarrow Y$$

$$C$$



$$(2, 3) \quad A + J + Y = D = F$$

$$D$$

$$D$$

$$D$$

$$(3, 3) \quad K \cdot J = X = Z$$

$$X$$

$$X$$

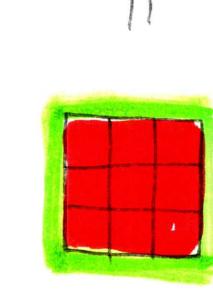
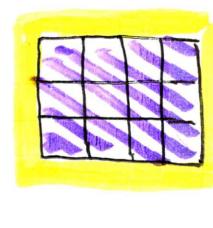
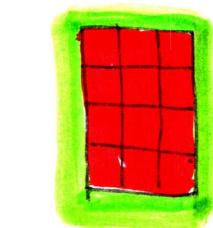
$$X$$

$$(4, 3) \quad G \cdot T = E = Q$$

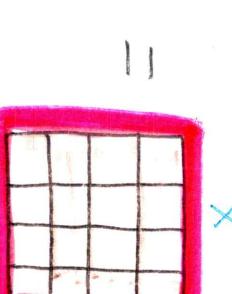
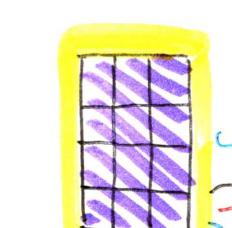
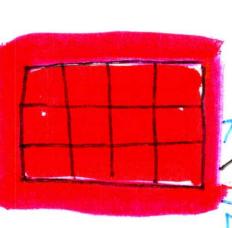
$$G \cdot (6, 2)$$

$$(9, 2) \quad \{E\}^3 \rightarrow Q$$

$$E$$



$$=$$



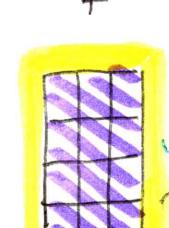
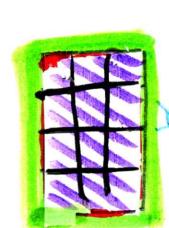
$$=$$

$$(K \cdot J) \cdot T = X = Z$$

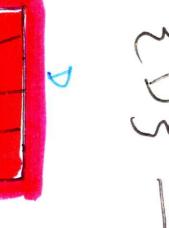
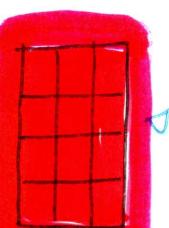
$$T \cdot (7, 2)$$

$$T$$

$$=$$



$$=$$

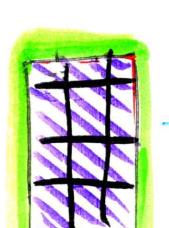


$$=$$

$$D$$

$$D$$

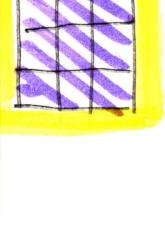
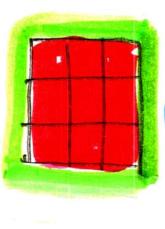
$$D$$



$$=$$

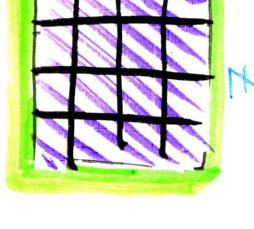
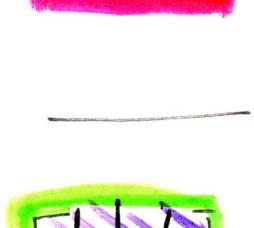
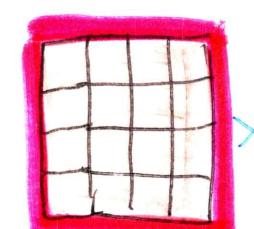
$$F$$

$$F$$



$$=$$

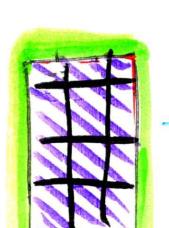
$$Q$$



$$=$$

$$Z$$

$$Z$$



$$=$$

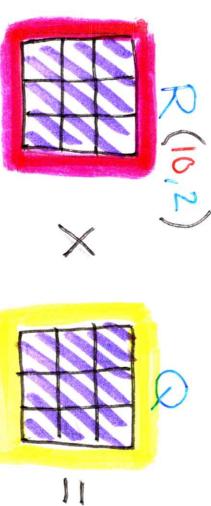
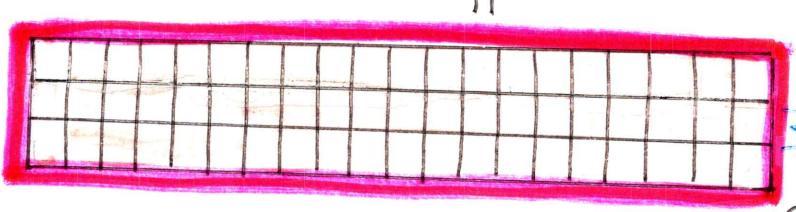
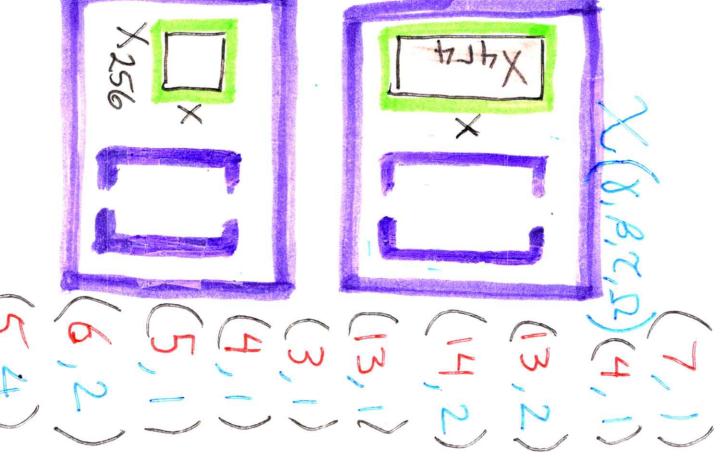
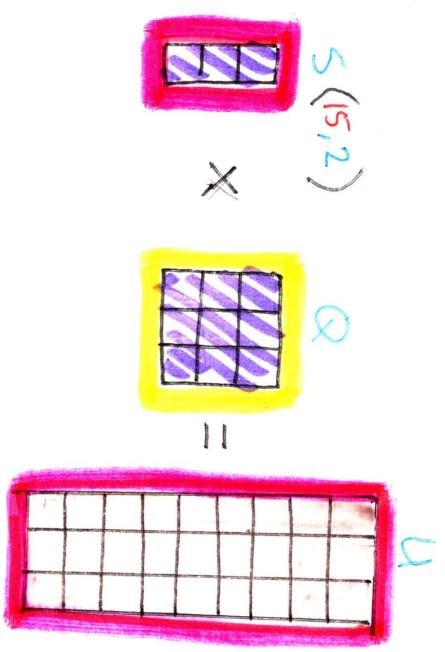
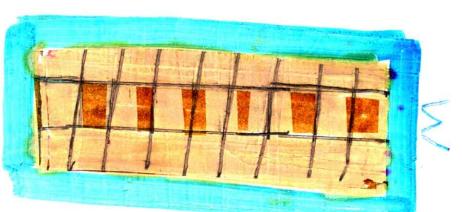
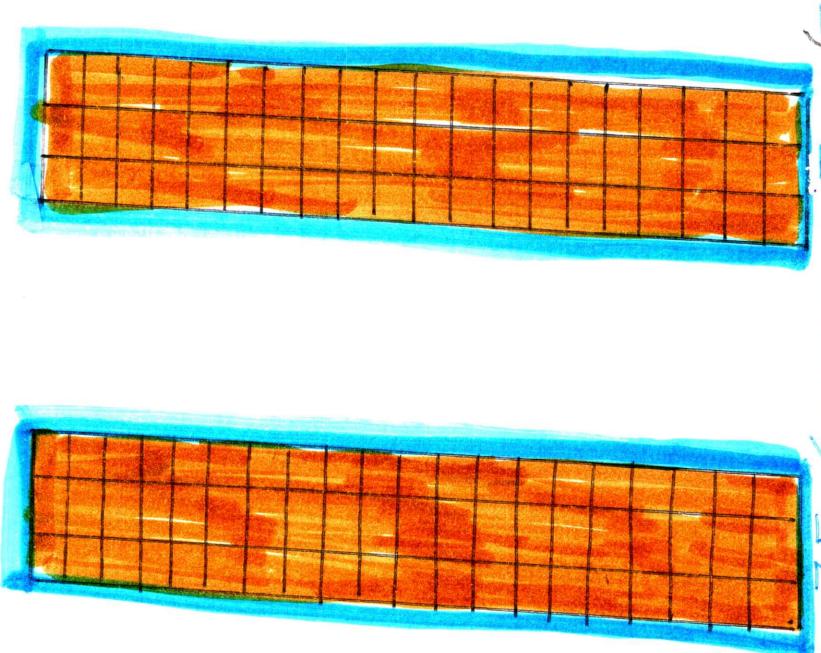
$$Y$$

$$Y$$

Rev A.3.1

OPERATIONS

DECISIONS

 $(5, 3) R \times Q = M = I$  $(7, 3) I - L = E$  $(6, 3) S \times Q = U = W$  $\{u\}^4 \rightarrow W$  $(8, 2) L \rightarrow D$ 

ID Size type module Purpose

ID	Size	Type	Module	Purpose
1	10x10	Matrix	Input	Accepts input data
2	10x10	Matrix	Processor	Performs matrix operations
3	10x10	Matrix	Processor	Performs matrix operations
4	10x10	Matrix	Processor	Performs matrix operations
5	10x10	Matrix	Processor	Performs matrix operations
6	10x10	Matrix	Processor	Performs matrix operations
7	10x10	Matrix	Processor	Performs matrix operations
8	10x10	Matrix	Processor	Performs matrix operations
9	10x10	Matrix	Processor	Performs matrix operations
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