Batch Experiment Report

Date: 2026-02-28 15:52:43 **Batch Directory:** `vision_temp_1.0`

1. Experimental Setup

Parameter	Value
Models	Text: `openai/gpt-4o-mini` Vision: `google/gemini-2.0-flash-001`
Temperatures	Text: `0.1` Vision: `0.7`
Iterations	30
Embedding Model	`google/siglip-so400m-patch14-384`

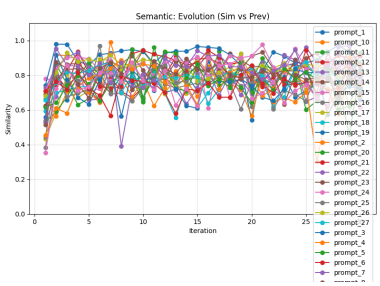
2. Batch Analysis

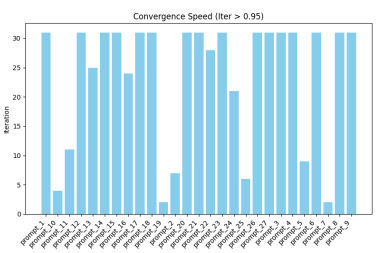
Aggregate Statistics

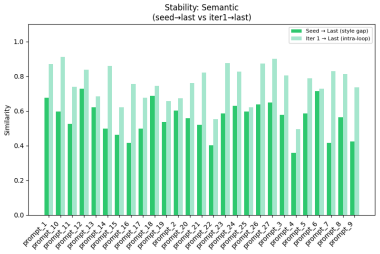
Metric	Mean	Min	Max
Semantic Stability — Seed→Last (style gap)	0.558	0.359	0.728
Semantic Stability — Iter 1→Last (intra-loop)	0.758	0.494	0.912
Visual Stability — First Image→Last	0.951	0.630	1.000
Visual Stability — Iter 2→Last (intra-loop)	0.953	0.630	1.000
Semantic Convergence (Step)	24.5	3	32
Visual Convergence (Step)	2.0	2	3
MMD Code Similarity (mean step-by-step)	0.875	0.451	1.000
Total Cost	$0.2555 (Avg: $0.0095/run)	-	-

Visualizations

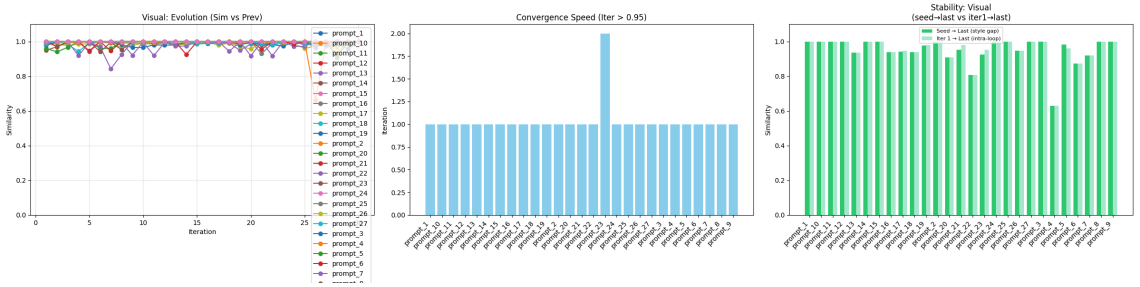
Semantic Analysis



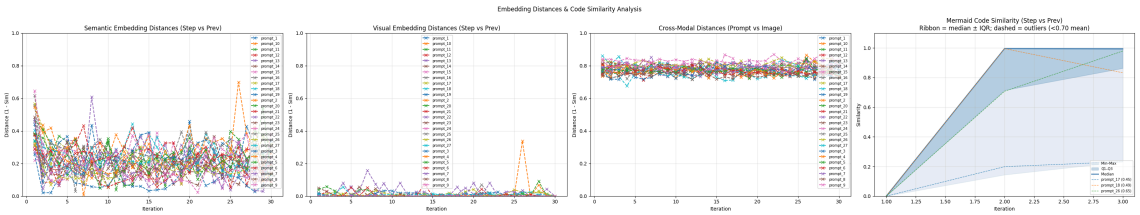




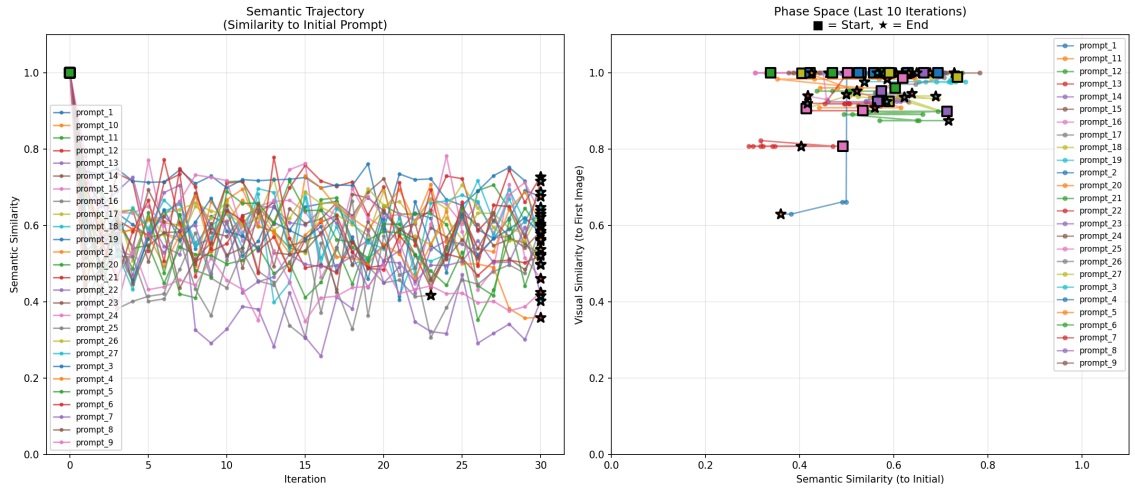
Visual Analysis



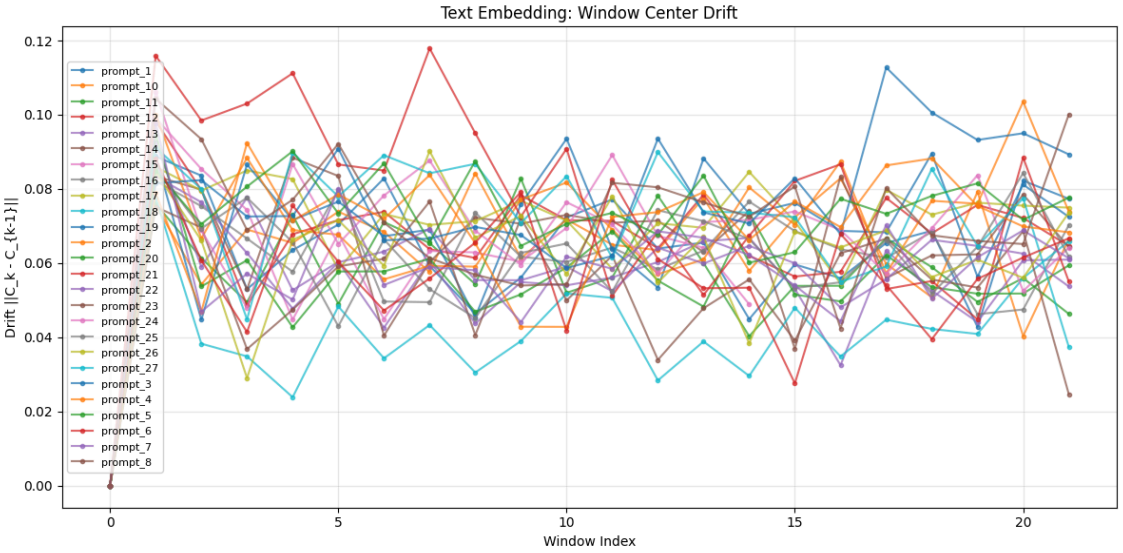
Embedding Distances

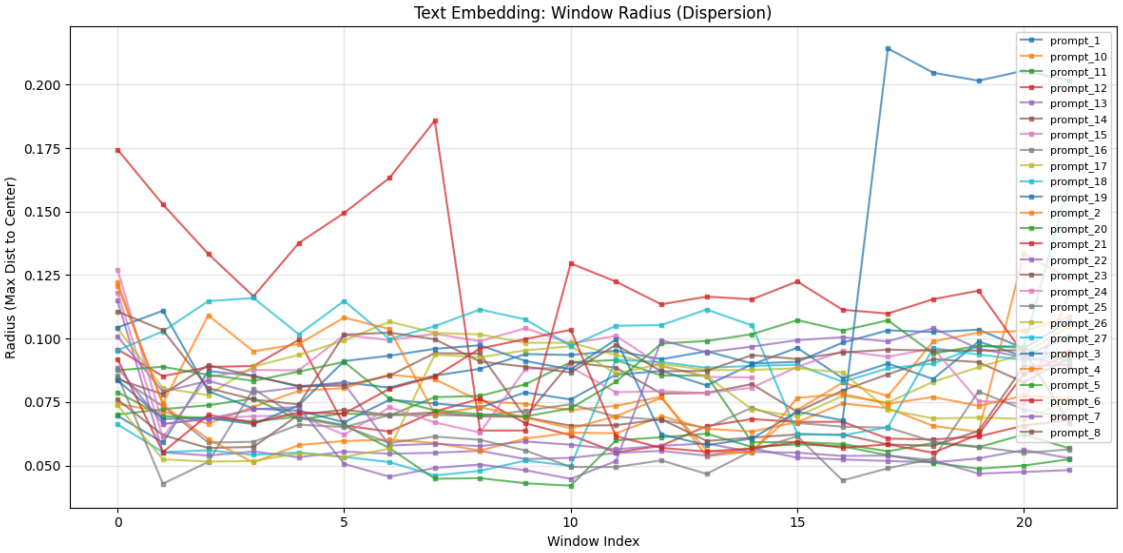


Trajectory Analysis

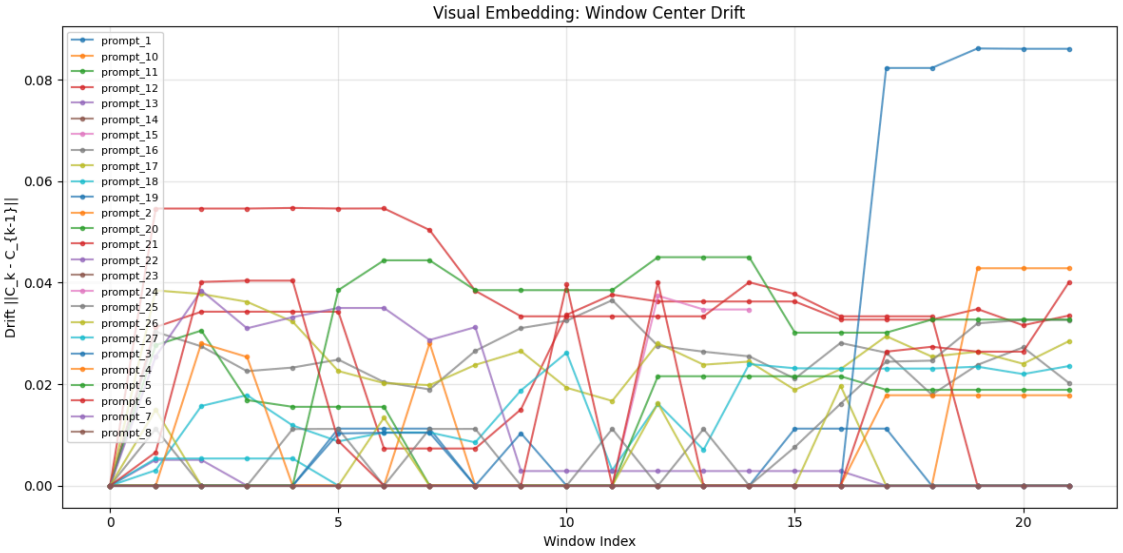


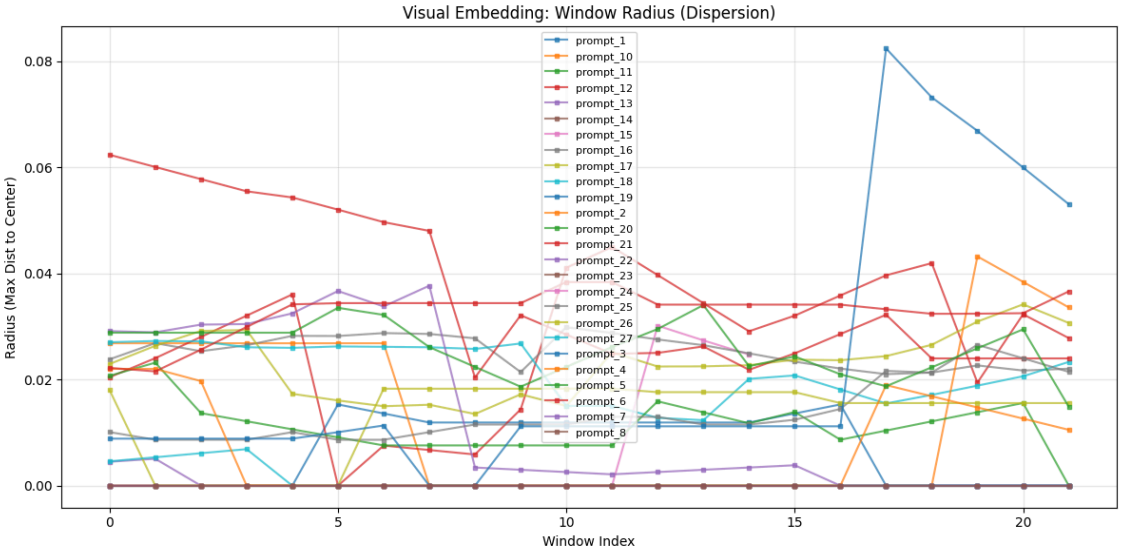
Window Analysis - Text Embeddings



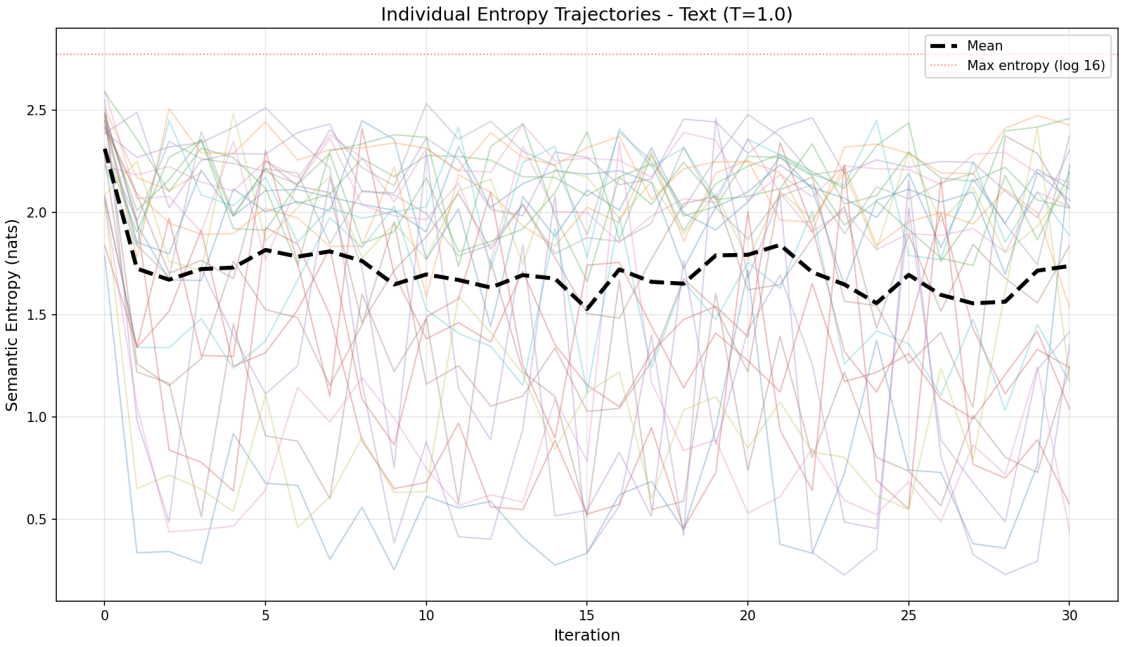


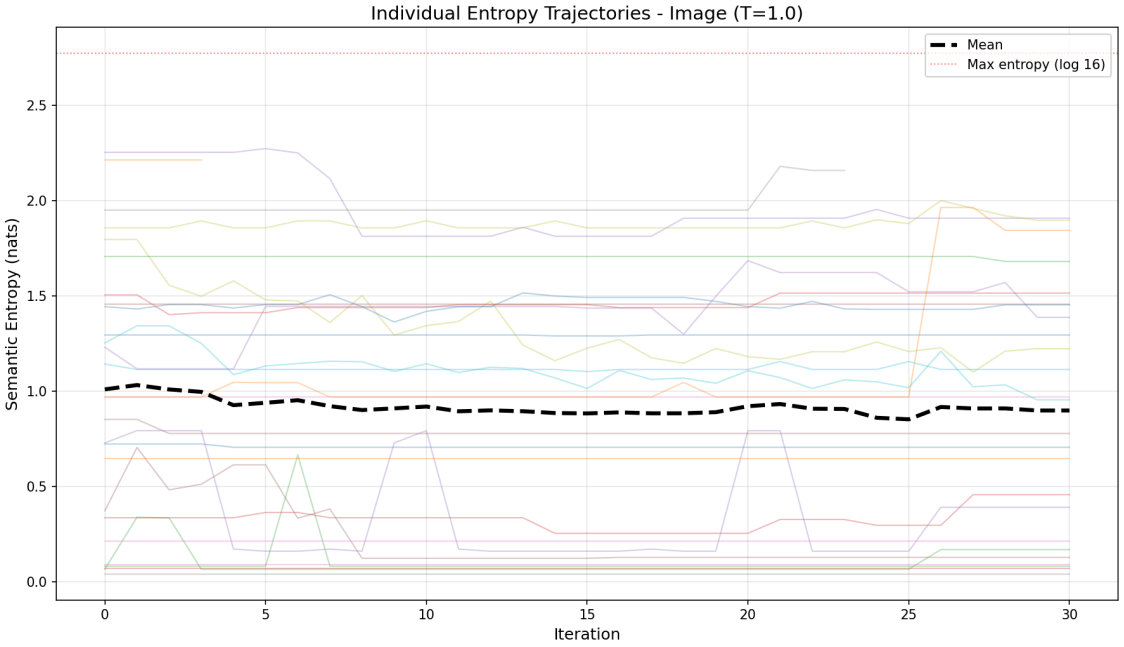
Window Analysis - Visual Embeddings





Semantic Entropy Trajectories





3. Individual Experiments

Run	Initial Prompt	Sem Stab.	Vis Stab.	Cost
prompt_1	A simple user authentication flow. User inputs credentials, ...	0.676	1.000	$0.0049

prompt_10	A CI/CD pipeline with rollback. Commit -> Test. Fail? Notify...	0.598	1.000	$0.0121
prompt_11	An event sourcing loop. User Action -> Event Bus -> Consumer...	0.524	1.000	$0.0077
prompt_12	A garbage collection mark-and-sweep. Scanner traces roots, m...	0.728	1.000	$0.0102
prompt_13	A home thermostat. Sensor reads Temp. If Low, Heater On. Tem...	0.622	0.937	$0.0092
prompt_14	The hydrological water cycle. Ocean water Evaporates into Cl...	0.497	0.999	$0.0082
prompt_15	An engine combustion cycle. Intake valve opens, Piston moves...	0.462	1.000	$0.0109
prompt_16	The Hero's Journey. Ordinary World -> Call to Adventure -> O...	0.417	0.940	$0.0293
prompt_17	The Scientific Method. Observe -> Hypothesize -> Experiment ...	0.499	0.943	$0.0224
prompt_18	The Design Thinking process. Empathize -> Define -> Ideate -...	0.688	0.939	$0.0120
prompt_19	E-commerce Microservices. API Gateway routes to Product Serv...	0.537	0.977	$0.0106
prompt_2	A password reset flow. User requests reset, System sends Ema...	0.604	1.000	$0.0076
prompt_20	A Kubernetes Cluster Architecture. Control Plane manages Nod...	0.560	0.908	$0.0078
prompt_21	A React Component Tree. App Component holds Header, Main, Fo...	0.521	0.953	$0.0105
prompt_22	The Solar System. Sun at center. Inner Planets (Mercury, Ven...	0.402	0.808	$0.0055
prompt_23	A Biological Trophic Pyramid. Producers (Plants) at base. Pr...	0.585	0.925	$0.0136
prompt_24	Human Nervous System. Central NS (Brain, Spine). Peripheral ...	0.630	1.000	$0.0128
prompt_25	A Biological Taxonomy. Domain Eukarya -> Kingdom Animalia ->...	0.598	1.000	$0.0048
prompt_26	A Corporate Org Chart. CEO leads VP Eng, VP Sales, VP HR. VP...	0.638	0.947	$0.0109
prompt_27	A Decision Tree for Loan Approval. Credit Score > 700? Yes -...	0.648	1.000	$0.0059

prompt_3	An email subscription process. User submits email, System ad...	0.578	0.999	$0.0042
prompt_4	A gravity-fed water filtration system. Rainwater to Gutter, ...	0.359	0.630	$0.0080
prompt_5	A manufacturing assembly line. Raw material enters Conveyor,...	0.585	0.983	$0.0070
prompt_6	A traffic light sequence. Green light stays for 60s, turns Y...	0.716	0.875	$0.0058
prompt_7	A logical syllogism chain. Premise A implies B. B implies C....	0.416	0.920	$0.0050
prompt_8	A historical timeline of 3 events. Event A causes Event B. E...	0.564	1.000	$0.0042
prompt_9	An algebraic derivation. Start with Equation 1, substitute V...	0.425	1.000	$0.0045

4. Detailed Experiment Log

prompt_1

Initial Prompt:

> *A simple user authentication flow. User inputs credentials, System validates hash, returns Token or Error.*

- **Cost:** $0.0049
- **Data:** trajectory.json, metrics.json

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prompt_10

Initial Prompt:

> *A CI/CD pipeline with rollback. Commit -> Test. Fail? Notify Dev (Loop). Pass? Deploy. Monitor Health. bad? Rollback (Loop).*

- **Cost:** $0.0121
- **Data:** trajectory.json, metrics.json

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prompt_11

Initial Prompt:

> *An event sourcing loop. User Action -> Event Bus -> Consumer updates View DB. View reflects new state to User.*

- **Cost:** $0.0077
- **Data:** trajectory.json, metrics.json

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prompt_12

Initial Prompt:

> *A garbage collection mark-and-sweep. Scanner traces roots, marks reachable, sweeps unreachable, frees memory, waits for next cycle.*

- **Cost:** $0.0102
- **Data:** trajectory.json, metrics.json

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prompt_13

Initial Prompt:

> *A home thermostat. Sensor reads Temp. If Low, Heater On. Temp Rises. If High, Heater Off. Temp Falls.*

- **Cost:** $0.0092
- **Data:** trajectory.json, metrics.json

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prompt_14

Initial Prompt:

> *The hydrological water cycle. Ocean water Evaporates into Clouds. Clouds Condense into Rain. Rain flows into Rivers. Rivers return to Ocean.*

- **Cost:** $0.0082
- **Data:** trajectory.json, metrics.json

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prompt_15

Initial Prompt:

> *An engine combustion cycle. Intake valve opens, Piston moves down. Valve closes, Piston compresses. Spark plug fires (Combustion). Piston driven down. Exhaust valve opens.*

- **Cost:** $0.0109
- **Data:** trajectory.json, metrics.json

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prompt_16

Initial Prompt:

> *The Hero's Journey. Ordinary World -> Call to Adventure -> Ordeal -> Reward -> Return to Ordinary World (Changed).*

- **Cost:** $0.0293
- **Data:** trajectory.json, metrics.json

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prompt_17

Initial Prompt:

> *The Scientific Method. Observe -> Hypothesize -> Experiment -> Analyze. Data supports? Theory. Data rejects? New Hypothesis (Loop).*

- **Cost:** $0.0224

- **Data:** trajectory.json, metrics.json

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prompt_18

Initial Prompt:

> *The Design Thinking process. Empathize -> Define -> Ideate -> Prototype -> Test. Test fails? Ideate again (Loop).*

- **Cost:** $0.0120
- **Data:** trajectory.json, metrics.json

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prompt_19

Initial Prompt:

> *E-commerce Microservices. API Gateway routes to Product Service (Product DB), Order Service (Order DB), User Service (User DB).*

- **Cost:** $0.0106
- **Data:** trajectory.json, metrics.json

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prompt_2

Initial Prompt:

> *A password reset flow. User requests reset, System sends Email, User clicks Link, enters New Password.*

- **Cost:** $0.0076
- **Data:** trajectory.json, metrics.json

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prompt_20

Initial Prompt:

> *A Kubernetes Cluster Architecture. Control Plane manages Nodes. Nodes contain Pods. Pods contain Containers.*

- **Cost:** $0.0078
- **Data:** trajectory.json, metrics.json

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prompt_21

Initial Prompt:

> *A React Component Tree. App Component holds Header, Main, Footer. Main holds Sidebar and Content Area. Content Area holds Article List.*

- **Cost:** $0.0105
- **Data:** trajectory.json, metrics.json

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prompt_22

Initial Prompt:

> *The Solar System. Sun at center. Inner Planets (Mercury, Venus, Earth) orbit Sun. Earth has Moon. Outer Planets (Jupiter, Saturn) orbit Sun. Jupiter has many Moons.*

- **Cost:** $0.0055
- **Data:** trajectory.json, metrics.json

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prompt_23

Initial Prompt:

> *A Biological Trophic Pyramid. Producers (Plants) at base. Primary Consumers (Herbivores) eat Producers. Secondary Consumers (Carnivores) eat Primary. Decomposers recycle all.*

- **Cost:** $0.0136
- **Data:** trajectory.json, metrics.json

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prompt_24

Initial Prompt:

> *Human Nervous System. Central NS (Brain, Spine). Peripheral NS splits into Somatic and Autonomic. Autonomic splits into Sympathetic and Parasympathetic.*

- **Cost:** $0.0128
- **Data:** trajectory.json, metrics.json

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prompt_25

Initial Prompt:

> *A Biological Taxonomy. Domain Eukarya -> Kingdom Animalia -> Phylum Chordata -> Class Mammalia.*

- **Cost:** $0.0048
- **Data:** trajectory.json, metrics.json

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prompt_26

Initial Prompt:

> *A Corporate Org Chart. CEO leads VP Eng, VP Sales, VP HR. VP Eng leads Backend, Frontend, QA Teams.*

- **Cost:** $0.0109
- **Data:** trajectory.json, metrics.json

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prompt_27

Initial Prompt:

> *A Decision Tree for Loan Approval. Credit Score > 700? Yes -> Income > 50k? Yes -> Approve. No -> Deny.*

- **Cost:** $0.0059
- **Data:** trajectory.json, metrics.json

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prompt_3

Initial Prompt:

> *An email subscription process. User submits email, System adds to DB, System sends Welcome Email.*

- **Cost:** $0.0042
- **Data:** trajectory.json, metrics.json

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prompt_4

Initial Prompt:

> *A gravity-fed water filtration system. Rainwater to Gutter, Gutter to Pipe, Pipe to Filter, Filter to Tank.*

- **Cost:** $0.0080
- **Data:** trajectory.json, metrics.json

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prompt_5

Initial Prompt:

> *A manufacturing assembly line. Raw material enters Conveyor, Stamping Machine shapes it, Painting Station colors it, Packaging wraps it.*

- **Cost:** $0.0070
- **Data:** trajectory.json, metrics.json

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prompt_6

Initial Prompt:

> *A traffic light sequence. Green light stays for 60s, turns Yellow for 5s, turns Red for 60s.*

- **Cost:** $0.0058
- **Data:** trajectory.json, metrics.json

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prompt_7

Initial Prompt:

> *A logical syllogism chain. Premise A implies B. B implies C. Therefore A implies C.*

- **Cost:** $0.0050
- **Data:** trajectory.json, metrics.json

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prompt_8

Initial Prompt:

> *A historical timeline of 3 events. Event A causes Event B. Event B triggers Reaction C.*

- **Cost:** $0.0042
- **Data:** trajectory.json, metrics.json

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prompt_9

Initial Prompt:

> *An algebraic derivation. Start with Equation 1, substitute Variable X, simplify to Result Y.*

- **Cost:** $0.0045
- **Data:** trajectory.json, metrics.json
