Talk

From Script to Schema: Mapping Stories with AI Knowledge Graphs

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London 2025

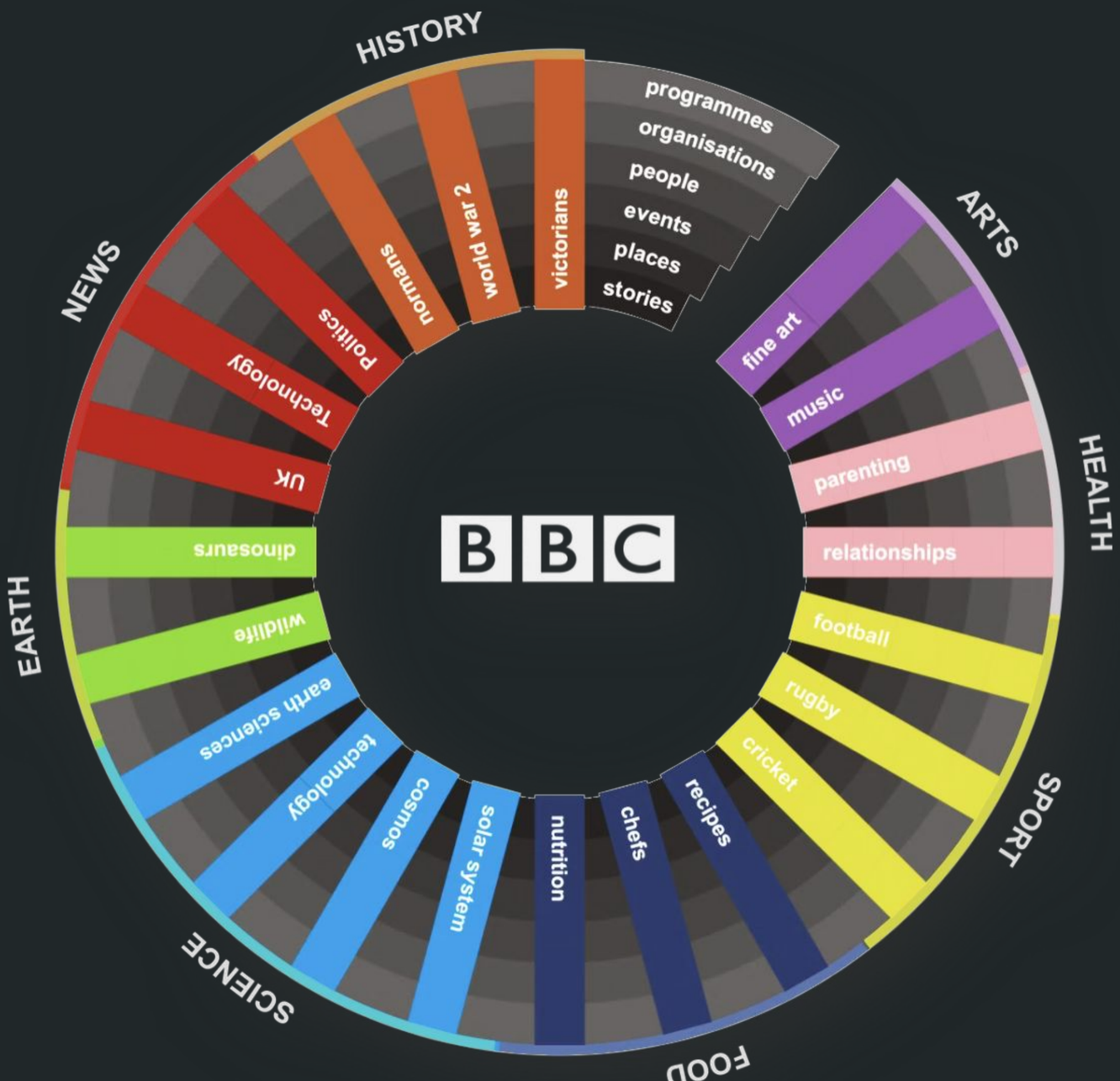
CHALLENGES OF CHANGE

WORLD IA DAY 2025
LOCAL CONNECTIONS. GLOBAL IMPACT.

from script to schema

MAPPING STORIES WITH AI KNOWLEDGE GRAPHS

Mike Atherton


HISTORY
victorians
world war 2
normans
politics
NEWS
Technology
UK
dinosaurs
EARTH
wildlife
earth sciences
technology
cosmos
solar system
SCIENCE
nutrition
chefs
recipes
FOOD
cricket
rugby
football
SPORT
relationships
parenting
music
fine art
ARTS
HEALTH
programmes
organisations
people
events
places
stories
BBC

BBC The Doctor Who Mythology Engine

Prototype by BBC R&D Prototyping

Home | Stories | Characters | Places | Things

Event

Interrogation

From the Story: Genesis of the Daleks

Event in brief

When Date Unknown

Synopsis

In the Kaled **bunker** on **Skaro**, **Davros** demands that the **Doctor** reveal to him the details of all **Dalek** defeats in the future. If the Doctor refuses, Davros will torture **Sarah** and **Harry**.

Refers to

The Dalek Invasion of Earth
The Doctor reveals the Dalek plan to extract the Earth's core

Referred to by

Explore the Story Timeline

BBC Mythology Engine, 2010

BBC Mythology Engine, 2010

HELLO MY NAME IS MIKE

#vibecoder

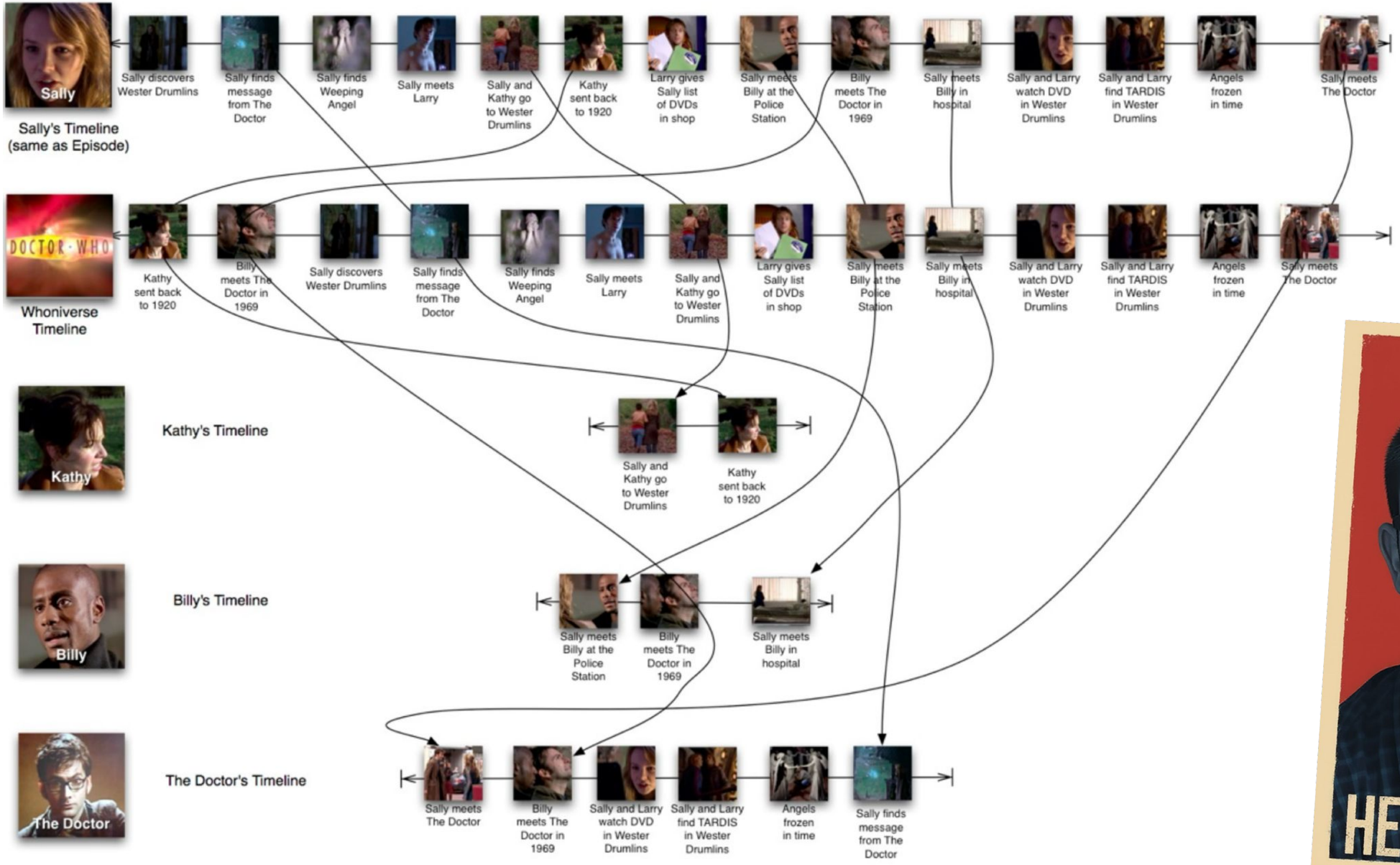
DESIGNING
CONNECTED
CONTENT

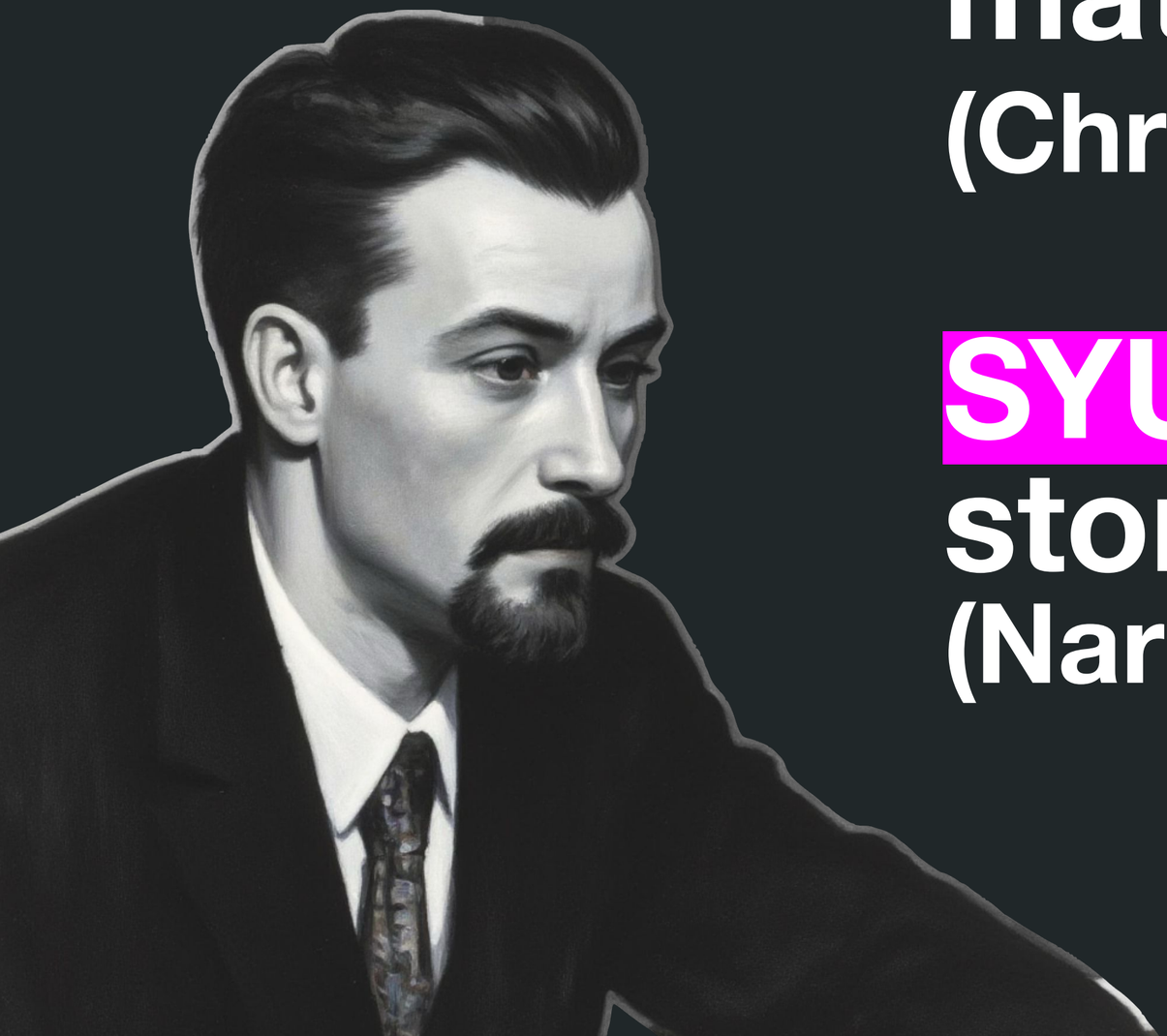
デジタルプロダクトの
長期的な成長を支える
構造化コンテンツ

previously…

World IA Day London, 2016

Character Timelines

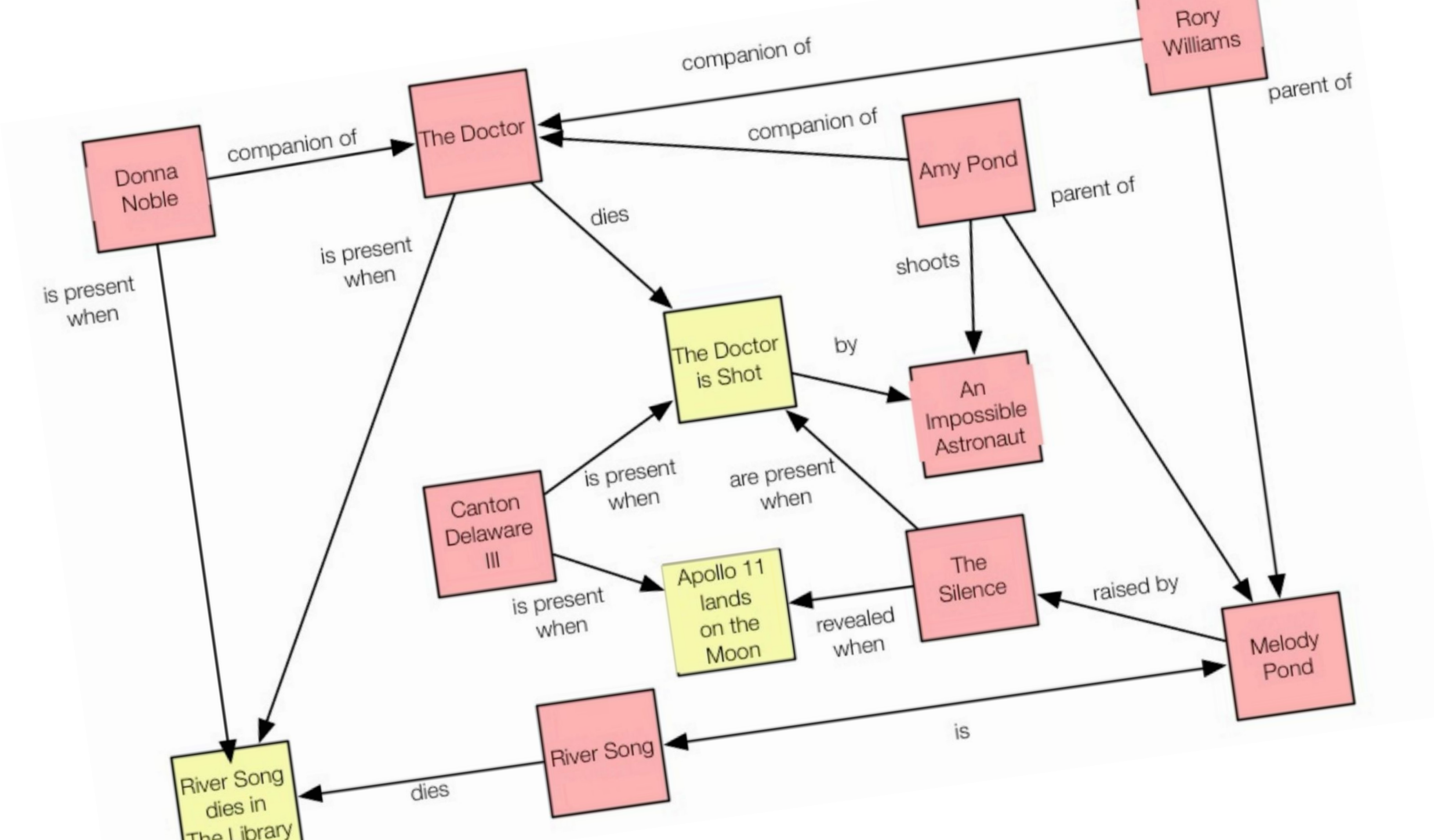




FABULA* “The raw material of a story.”
(Chronological order)

SYUZHET* “How the story is organized.”
(Narrative order)

Vladimir Propp


Donna Noble
companion of
The Doctor
companion of
Rory Williams
parent of
companion of
Amy Pond
parent of
is present when
is present when
dies
shoots
The Doctor is Shot
by
An Impossible Astronaut
Canton Delaware III
is present when
are present when
is present when
Apollo 11 lands on the Moon
revealed when
The Silence
raised by
Melody Pond
River Song dies in The Library
dies
River Song
is

//challenges

- SEMI-BESPOKE MODELING
- CONTENT IN THE WRONG SHAPE
- MASSIVE CONTENT CREATION EFFORT
- DATA MODEL BECOMES A BIG BET

generative pretrained
transformers

Synthetic Data Generation Business Research Report 2024: Global Market to Reach $3.7 Billion by 2030 from $323 Million in 2023, Driven by Rising Demand for Data Privacy and Anonymization Solutions - ResearchAndMarkets.com

January 13, 2025 11:37 AM Eastern Standard Time

DUBLIN--(BUSINESS WIRE)--The "Synthetic Data Generation - Global Strategic Business Report" has been added to **ResearchAndMarkets.com's** offering.

"Synthetic Data Generation - Global Strategic Business Report"

Post this

The global market for Synthetic Data Generation was estimated at US$323.9 Million in 2023 and is projected to reach US$3.7 Billion by 2030, growing at a CAGR of 41.8% from 2023 to 2030. This comprehensive report provides an in-depth analysis of market trends, drivers, and forecasts, helping you make informed business decisions.

This technology plays a crucial role in training and validating AI models, particularly in scenarios where real-world data is scarce, sensitive, or difficult to obtain. By providing a controlled and scalable data source, synthetic data generation allows researchers and developers to train more robust and accurate AI models, leading to better performance in real-world applications. As AI and machine learning continue to advance, synthetic data generation is becoming increasingly important for enabling innovation and overcoming the limitations of traditional data collection methods.

let's build

FABULA* A connected web of story moments, from the viewpoint of everyone involved.

//approach

SPLIT EPISODE INTO SCENES

PASS SCENE THROUGH LLM FOR REASONED DATA EXTRACTION

RESOLVE ENTITIES ACROSS ALL SCENES

OUTPUT AS STRUCTURED JSON

PYTHON // o3-MINI // BAML

INT. WHITE HOUSE MURAL ROOM – LATER

RUSSIAN AMBASSADOR VIKTOR PETROV stands with perfect diplomatic posture. C.J. and LEO observe from near the doorway, both noting Bartlet's tells – the subtle jaw clench, hands clasped behind his back.

AMBASSADOR PETROV
This is, as we see it, an internal Serbian law enforcement matter.

Any NATO intervention would constitute a serious violation of sovereign territory.

PRESIDENT BARTLET
Mr. Ambassador, would you care to explain how the kidnapping of American aid workers constitutes an internal matter?

C.J.'s BlackBerry buzzes. She closes her eyes briefly, steeling herself.

C.J.
Sir, CNN is running with Amanda Dalton's identity.

INT. STEAM PIPE TRUNK DISTRIBUTION VENUE –

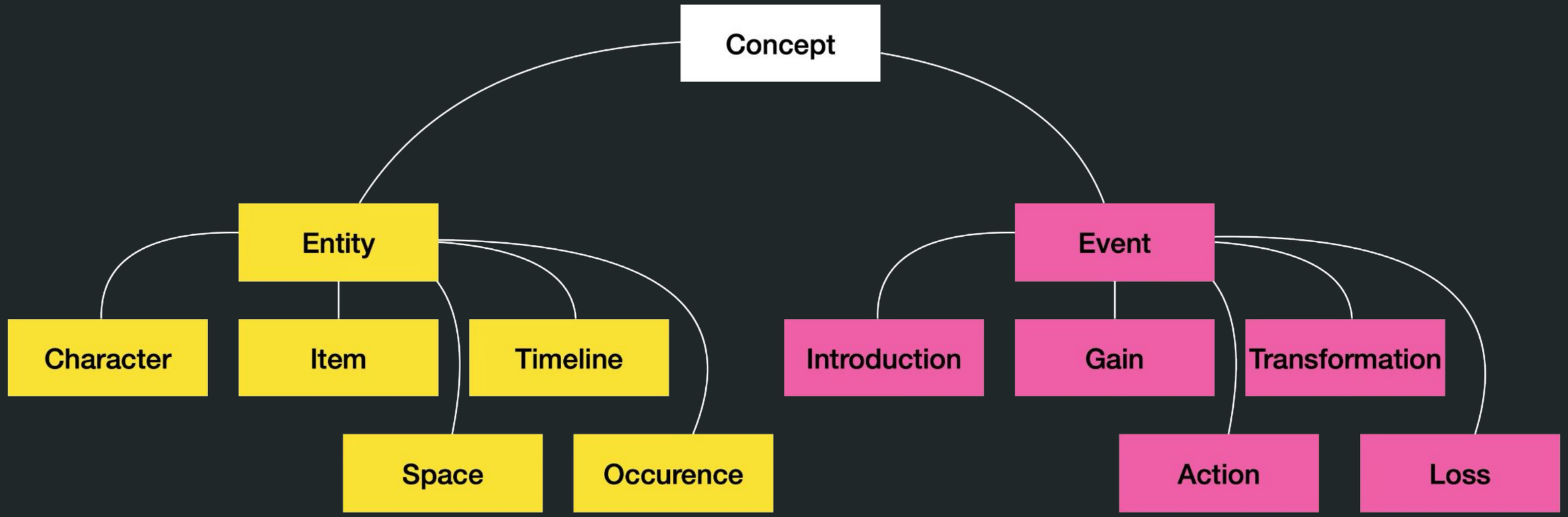

```
"uuid": "scene_3",
"title": "Diplomatic Tensions in the Mural Room",

"description": "In the Mural Room, tension fills the air as the Russian Ambassador, Viktor Petrov, articulates Moscow's stance, arguing that any NATO intervention would breach Serbian sovereignty. President Bartlet challenges this position, questioning the nature of the kidnapping of American aid workers. Meanwhile, C.J. and Leo, quietly observing from the doorway, note the subtle physical cues from Bartlet, such as his clenched jaw and tightly clasped hands. A buzzing BlackBerry alerts C.J. to CNN breaking the news of Amanda Dalton's identity, forewarning of an impending media storm.",
"scene_number": 3,
"location": “location_mural_room”,
"next_scene": "scene_4"


"uuid": "location_mural_room",
"name": "Mural Room",
"description": "A room in the West Wing used as an impromptu command center where high-stakes diplomatic dialogues take place. The space is noted for its strategic seating and positioning near doorways, allowing observers like C.J. and Leo to note every subtle cue in leaders' behavior.",
"type": "Room"


"uuid": "agent_cj_cregg",
"agent_id": "cj_cregg",
"name": "C.J. Cregg",
"title": "Press Secretary",
"aliases": ["C.J."],
"description": "C.J. Cregg is the White House Press Secretary known for her resilience and astute handling of high-pressure communication challenges. She remains composed under breaking news and imminent crises.",
"traits": [“Resilient”, "Quick-witted", "Observant"],
"affiliated_org": “org_white_house”,
"sphere_of_influence": “Communications"


"uuid": "object_blackberry_phone",
"name": "Blackberry Phone",
"description": "A mobile communication device used by C.J. Cregg. The phone buzzes with urgent news alerts, drawing attention to the unfolding crisis.",
"purpose": "To deliver breaking news updates, such as the revelation of Amanda Dalton's identity on CNN, that directly impact the decisions and emotions of the characters.",
"significance": "The device represents the immediacy of information in modern political crises and underlines the tension as the narrative shifts between personal dilemmas and high-level diplomatic confrontations.",
"original_owner": "agent_cj_cregg"
```

SCHEMA DESIGN

//principles

- UNIVERSAL :slightly_smiling_face
- SUPPORT CONTINUING STORIES
- ENRICH METADATA WITH REASONED ANALYSIS
- SUPPORT NARRATIVE RECONSTRUCTION
- SUPPORT FABULA/SYUZHET DIVERGENCE
- SUPPORT ADDITIONAL OR EXPANDED ONTOLOGIES

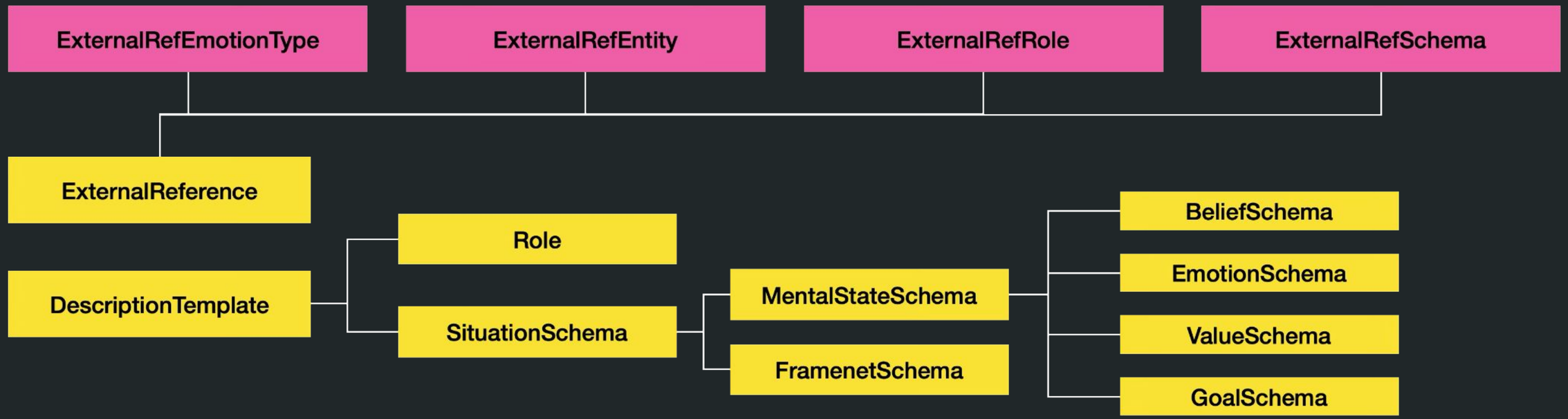
//ontology inspiration



Ontomedia

```
<dc:creator>Michael O. Jewell</dc:creator>
<dc:creator>K Faith Lawrence</dc:creator>
<dc:creator>Mischa M Tuffield</dc:creator>
```

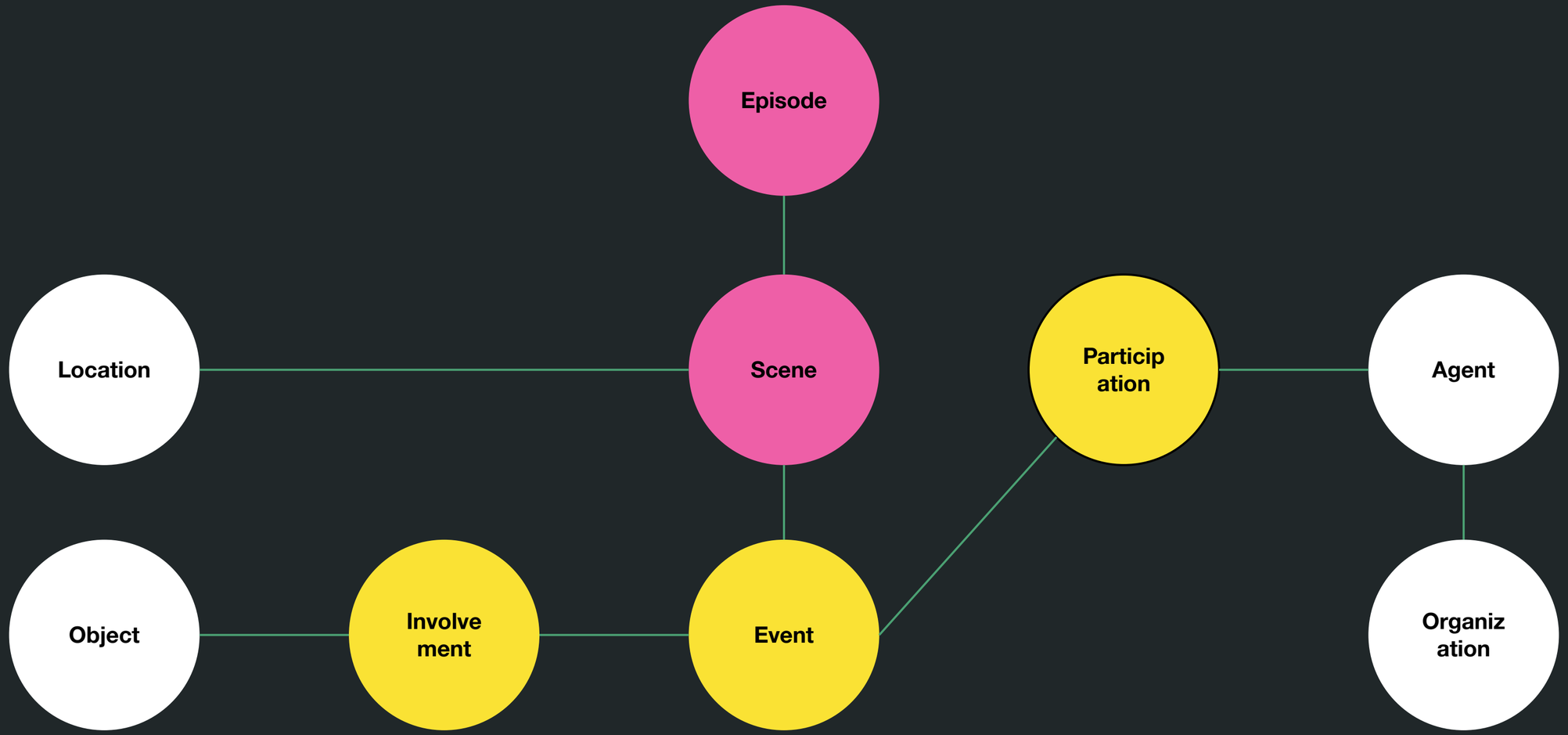
//ontology inspiration



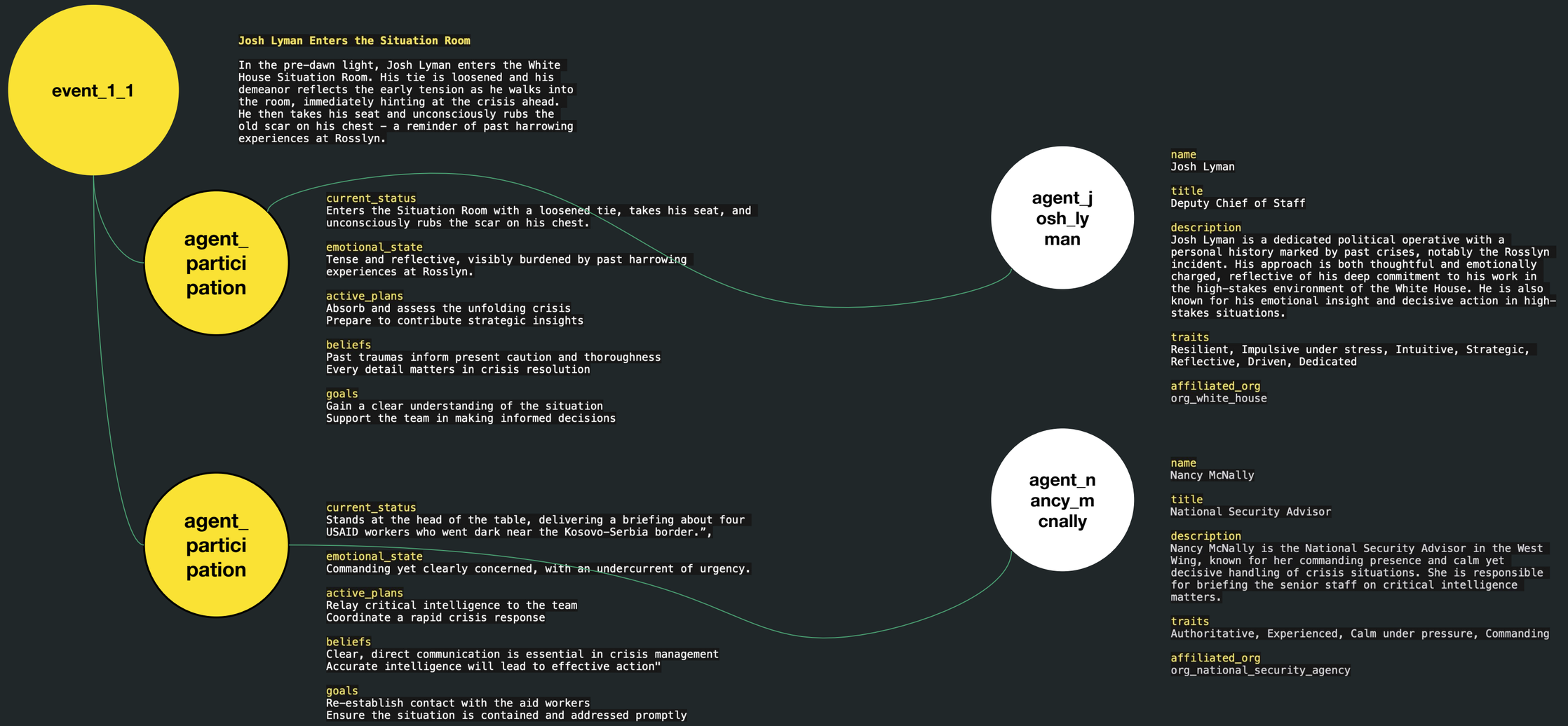
Drammar

<dc:creator>Vincenzo Lombardo</dc:creator>
<dc:creator>Rossana Damiano</dc:creator>
<dc:creator>Antonio Pizzo</dc:creator>

//fabula schema_v1



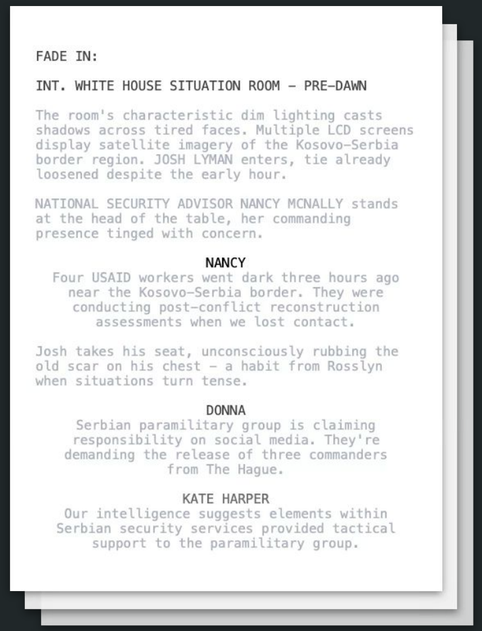
//fabula schema_v1



PROCESSING PIPELINE

//pre-processing

TURN DOCUMENT INTO MACHINE-READABLE CHUNKS



FADE IN:

INT. WHITE HOUSE SITUATION ROOM – PRE-DAWN

The room's characteristic dim lighting casts shadows across tired faces. Multiple LCD screens display satellite imagery of the Kosovo-Serbia border region. JOSH LYMAN enters, tie already loosened despite the early hour.

NATIONAL SECURITY ADVISOR NANCY MCNALLY stands at the head of the table, her commanding presence tinged with concern.

NANCY
Four USAID workers went dark three hours ago near the Kosovo-Serbia border. They were conducting post-conflict reconstruction assessments when we lost contact.

Josh takes his seat, unconsciously rubbing the old scar on his chest – a habit from Rosslyn when situations turn tense.

DONNA
Serbian paramilitary group is claiming responsibility on social media. They're demanding the release of three commanders from The Hague.

KATE HARPER
Our intelligence suggests elements within Serbian security services provided tactical support to the paramilitary group.


```
"Scene": "Situation Room",
"Dialogue": [

"Stage Direction": "Pre-dawn in the White House Situation Room. The room's characteristic dim lighting casts shadows across tired faces as multiple LCD screens display satellite imagery of the Kosovo-Serbia border region. Josh Lyman enters, his tie already loosened despite the early hour. National Security Advisor Nancy McNally stands at the head of the table, her usual commanding presence tinged with obvious concern."


"Character": "NANCY MCNALLY",
"Line": "Four USAID workers went dark three hours ago near the Kosovo-Serbia border. They were conducting post-conflict reconstruction assessments when we lost contact."
```

//convert script to json

measure_man_script.txt U

utils > measure_man_script.txt

```
1  The Measure Of A Man
2  Stardate: 42523.7
3  Original Airdate: 13 Feb, 1989
4
5  Captain's log, stardate 42523.7. We are en route to newly established Starbase one seven three for port call. Crew
   rotation is scheduled, and we will be off-loading experiment modules.
6  [Data's quarters]
7
8  (Pulaski, La Forge, Data (wearing a dealer's shade) O'Brien and Riker are sitting down for an evening's entertainment)
9  O'BRIEN: Hold it, that's my chair. My luck is always lousy unless I start on the dealer's right.
10 DATA: That would seem to be superstition.
11 O'BRIEN: Bitter experience has taught me it's a fundamental truth.
12 RIKER: Okay, the game is five card stud, nothing wild. Ante up.
13 DATA: This game is exceedingly simple. With only fifty two cards, twenty one of which I will see, and four other players,
   there are a limited number of winning combinations.
14 LAFORGE: There's more to this than just the cards, Data.
15 DATA: Of course. The bets will indicate of the relative strength of each hand.
16 O'BRIEN: Time to pluck a pigeon.
17 (Kate starts the betting)
18 PULASKI: Five.
19 LAFORGE: I'm in.
20 DATA: I too.
21 RIKER: Call.
22 (The first lot of face up cards are dealt)
23 RIKER: A seven, and a six, and the ace.
24 DATA: I bet ten.
25 O'BRIEN: See that.
26 RIKER: Call.
27 PULASKI: Fold.
28 LAFORGE: Yeah, me too. I'm out.
29 (Another deal. Riker is showing the ten, Jack and five of hearts. Data has two Queens and an Ace)
30 DATA: I bet five.
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL bash - utils

```
fabula-7915348:~/fabula{main}$ source /home/user/fabula/.venv/bin/activate
(.venv) fabula-7915348:~/fabula{main}$ cd utils
(.venv) fabula-7915348:~/fabula/utils{main}$ python3 script2json2.py http://www.chakoteya.net/NextGen/135.htm measure_man_transcript.json --pretty
```

//add
story
context

measure_man_script.txt U | measure_man_transcript.json U

utils > measure_man_transcript.json > ...

```
{
  "Story": "The Measure Of A Man",
  "Airdate": "1989-02-13",
  "Episodes": [
    {
      "Episode": "Part One",
      "Scenes": [
        {
          "Scene": "Data's quarters",
          "Dialogue": [
            {
              "Stage Direction": "Pulaski, La Forge, Data (wearing a dealer's shade"
            },
            {
              "Character": "O'BRIEN",
              "Line": "Hold it, that's my chair. My luck is always lousy unless I start on the dealer's
            },
            {
              "Character": "DATA",
              "Line": "That would seem to be superstition."
            },
            {
              "Character": "O'BRIEN",
              "Line": "Bitter experience has taught me it's a fundamental truth."
            },
            {
              "Character": "RIKER",
              "Line": "Okay, the game is five card stud, nothing wild. Ante up."
            },
            {
              "Character": "DATA",
              "Line": "This game is exceedingly simple. With only fifty two cards, twenty one of which I
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL bash - utils

```
fabula-7915348:~/fabula{main}$ source /home/user/fabula/.venv/bin/activate
(.venv) fabula-7915348:~/fabula{main}$ cd utils
(.venv) fabula-7915348:~/fabula/utils{main}$ python3 script2json2.py http://www.chakoteya.net/NextGen/135.htm measure_man_transcri
pt.json --pretty
```

//ontology to response template

CLASSES DEFINE NODES AND RELATIONSHIPS TO GUARANTEE* THE LLM RESPONSES FIT OUR SCHEMA

PYTHON // o3-MINI // BAML

```
class Scene {
    title string
    description string
    scene_number int
    events string[]
    location string
    }

class Event {
    title string
    uuid string
    description string
    sequence_within_scene int
    key_dialogue string[]
    agent_participations string[]
    object_involvements string[]
    }

class Location {
    uuid string
    name string
    description string
    type string
    }

class AgentParticipation {
    uuid string
    agent string
    event string
    current_status string
    emotional_state string
    active_plans string[]
    beliefs string[]
    goals string[]
    }

class ObjectInvolvement {
    uuid string
    object string
    event string
    description_of_involvement string
    object_status_before_event string
    object_status_after_event string
    }

class Agent {
    uuid string
    agent_id string
    name string
    title string?
    aliases string[]|null
    description string
    traits string[]
    affiliated_org string|null
    sphere_of_influence string?
    }

class Organization {
    uuid string
    name string
    description string
    sphere_of_influence string
    members string[]
    }

class Object {
    uuid string
    name string
    description string
    purpose string
    significance string
    original_owner string|null
    }
```

```
function ExtractSceneMetadata(scene_text: string,
story_synopsis: string?, scene_number: int, locations:
Location[]) -> SceneMetadata {
    client CustomGemini
    prompt #"
        {{ Narrative_analyst_persona ()}}

        **Objective**: Extract metadata for the current
scene.

        **Instructions**:
        1. **Title**: Generate a concise, descriptive title.
        2. **Description**: Summarize the setting,
characters, actions, and emotional tone.
        3. **Scene Number**: Extract if explicitly
mentioned; otherwise, leave null.
        4. **Location**: Select the UUID of the primary
location from the provided `locations` list. If not
explicit, infer from `story_context`.
        5. **Next Scene**:  Identify any references to the
next scene and assign its `scene_uuid`. If none, leave null.
        6. **UUID**: This will be assigned in post
processing.
```

//run through scenes to grab all our data

measure_man_script.txt U | measure_man_transcript.json U | episode_processing.log | main.py U

myth_dev > episode_processing.log

8852

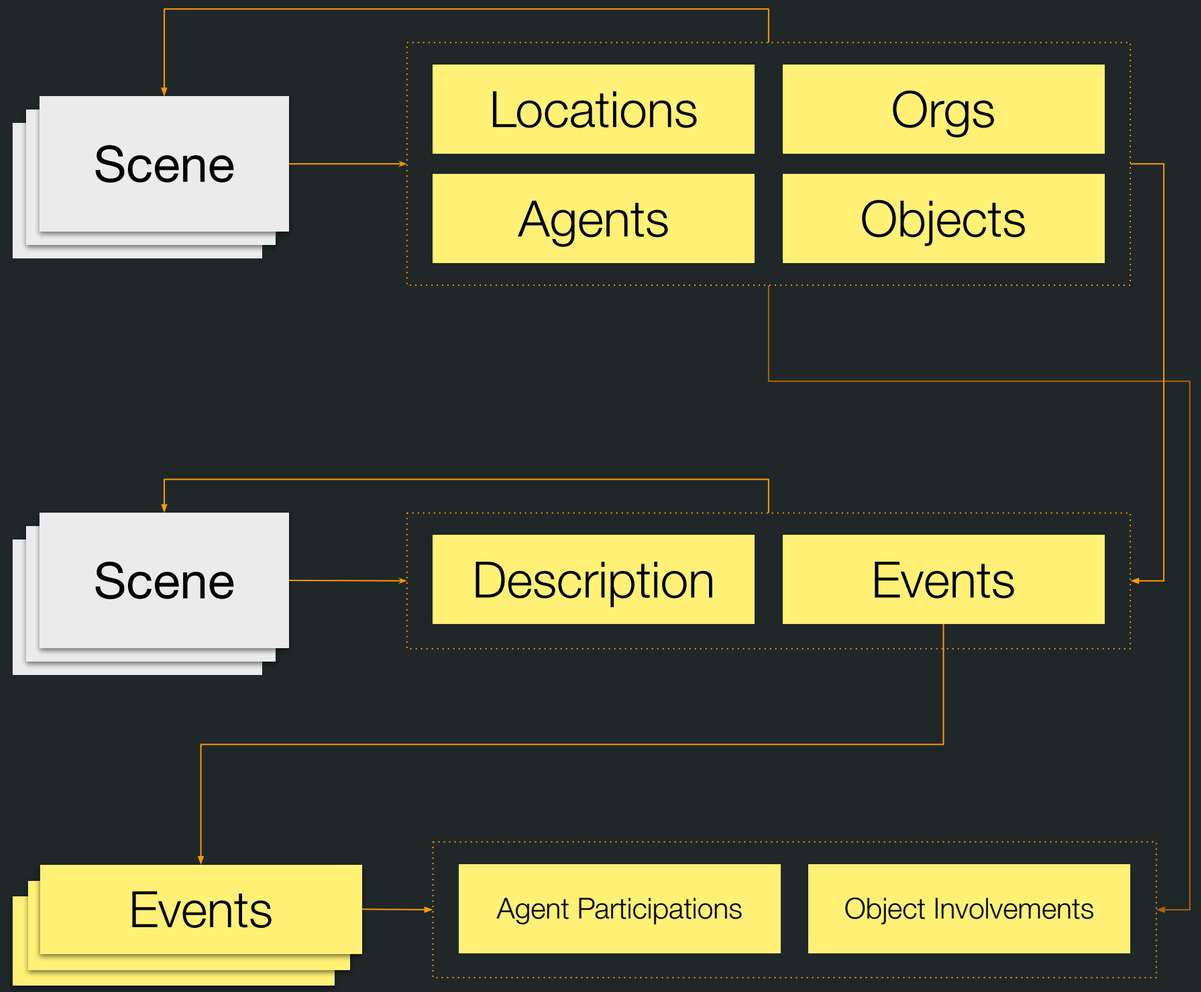
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

bash - myth_dev

```
(.venv) fabula-7915348:~/fabula/myth_dev{main}$ python3 main.py --fully-combined --batch-resolution
```

//layered extractions

EXTRACT STABLE ENTITY REGISTRY THEN PASS AS CONTEXT TO INFORM SECONDARY PASSES



//entity resolution and linking

LLMs CAN RESOLVE ENTITIES CREATIVELY (BUT UNPREDICTABLY).

VALIDATION STILL NEEDED ON OUTPUT.


```
            {
                "uuid": "agent_josiah_bartlet",
                "agent_id": "josiah_bartlet",
                "name": "Josiah Bartlet",
                "title": "President of the United States",
                "aliases": "Jed",
                "description": "Bartlet is a commanding presence marked by a calm exterior and a
deeply thoughtful approach to leadership. Carrying the weight of national destiny on his shoulders,
he exhibits a restrained yet intense determination when making decisions during crises. His
measured gestures and subtle physical cues reveal an inner turbulence, yet his resolve never
wavers, positioning him as a steady force in the tumultuous realm of executive leadership.",
                "traits": [
                    "Commanding",
                    "Resolute",
                    "Thoughtful",
                    "Under Pressure"
                ],
                "affiliated_org": "org-whitehouse",
                "sphere_of_influence": "Executive Leadership",
                "source_uuids": [
                    "agent_josiah_bartlet"
                ]
            },
```


CUT TO: INT. SCHOOL OFFICE, NEW HAMPSHIRE, EARLY 1960S – DAY

Young Jed Bartlet, with his back turned, flips his suit jacket on over his head. Mrs. Landingham is in her office, typing Bartlet pulls a folder from a file cabin an adjacent office, then walks back into office.

YOUNG JED
It wasn't a non-denominational servic

MRS. LANDINGHAM
Of course it was.

CUT TO: INT. NATIONAL CATHEDRAL – PRESENT DAY

Bartlet stands alone glaring at the altar. Most of the guests have left the church. He ascends the stairs to the Inner Sanctuary.

BARTLET
[pleading] That's not enough to buy me out of the doghouse? Haec credam a deo pio? A deo iusto? A deo scito?

//now we have it all in super useful json

measure_man_script.txt U | measure_man_transcript.json U | measure_man_story_graph.json U | episode_processing

myth_dev > measure_man_story_graph.json > ...


```
{
    "story_title": "The Measure Of A Man",
    "airdate": "1989-02-13",
    "episodes": [
        {
            "episode_title": "Part One",
            "scenes": [
                {
                    "scene_uuid": "scene_1",
                    "original_scene_data": {
                        "Scene": "Data's quarters",
                        "Dialogue": [
                            {
                                "Stage Direction": "Pulaski, La Forge, Data (wearing a dealer's shade"
                            },
                            {
                                "Character": "O'BRIEN",
                                "Line": "Hold it, that's my chair. My luck is always lousy unless I
                                start on the dealer's right."
                            },
                            {
                                "Character": "DATA",
                                "Line": "That would seem to be superstition."
                            },
                            {
                                "Character": "O'BRIEN",
                                "Line": "Bitter experience has taught me it's a fundamental truth."
                            },
```


PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL bash - myth_dev

```
    }
(.venv) fabula-7915348:~/fabula/myth_dev{main}$
```

//recap

EVERY STORY BEAT

FROM EVERYONE'S PERSPECTIVE

CHARACTER INTERACTIONS

MOVEMENT ACROSS LOCATIONS

EMOTIONS AND PLANS OVER TIME

COMPLETE INVENTORY OF

- CHARACTERS
- LOCATIONS
- ORGANIZATIONS
- OBJECTS

FOR ANY STORY*

AS FULLY-MODELED CONTENT TYPES

LINKED BY UNIQUE** IDENTIFIERS

AVAILABLE AS FRIENDLY JSON

InSight feature
Apple, 2024

With AI, we can ‘re-render’
content to fit a new schema.

//convert json to cypher for neo4j graph base

measure_man_script.txt U | measure_man_transcript.json U | measure_man_story_graph.json U | episode_processing

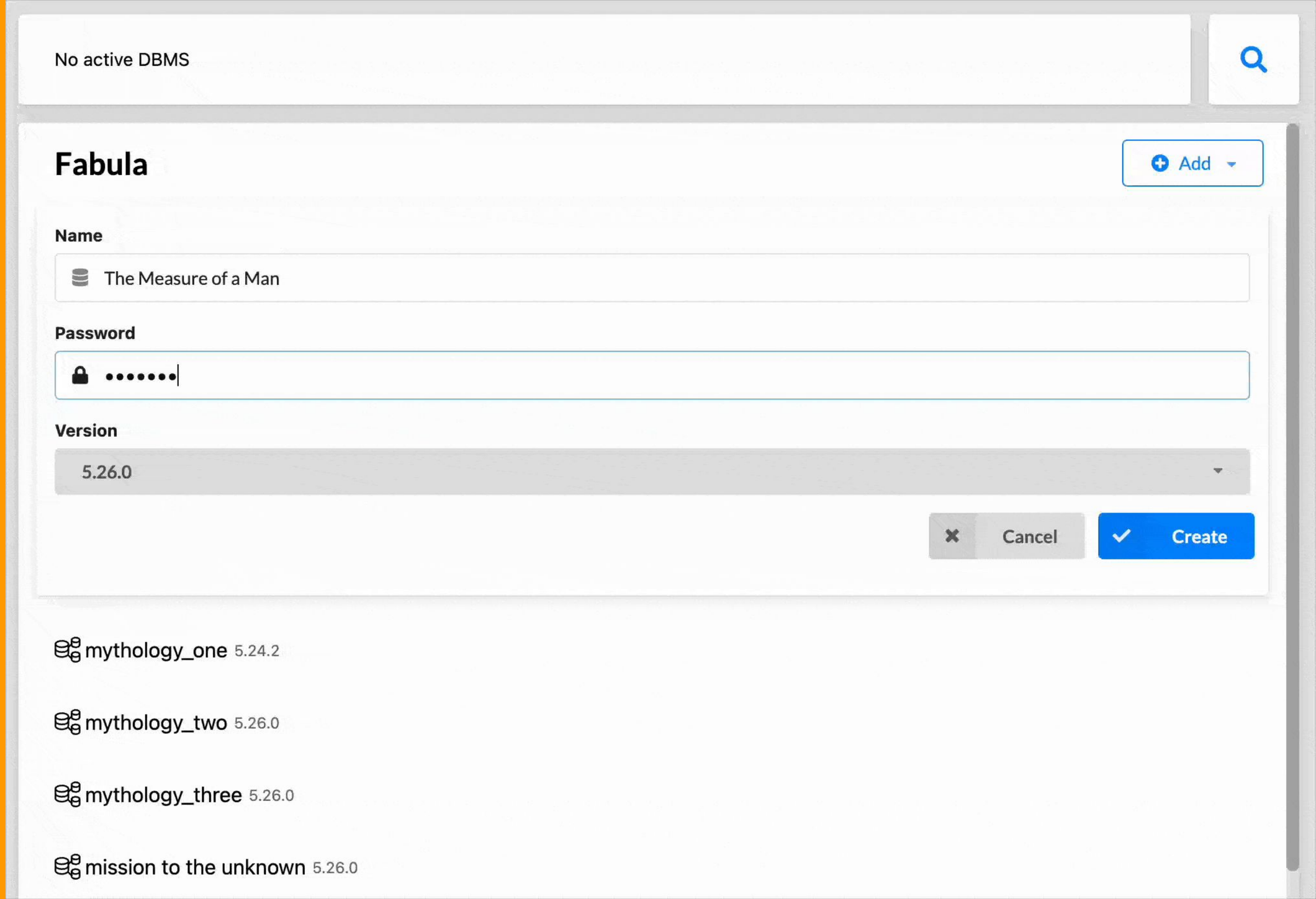
myth_dev > measure_man_story_graph.json > ...

```
7165        "entity_registry": {
7441            "locations": [
7487                {
7495                },
7496                {
7497                    "uuid": "location_observation_lounge",
7498                    "name": "Observation Lounge",
7499                    "description": "The Observation Lounge on the USS Enterprise is a spacious,
                    comfortable area with large windows offering panoramic views of space. In the depicted
                    scene, the lounge is deserted and dimly lit, setting an intimate and reflective
                    atmosphere, especially as Riker contemplates his emotions following a tense hearing.",
7500                    "type": "Lounge",
7501                    "source_uuids": [
7502                        "location_observation_lounge"
7503                    ]
7504                },
7505                {
7506                    "uuid": "location_ten_forward",
7507                    "name": "Ten Forward",
7508                    "description": "Ten Forward is a lounge on the USS Enterprise designed as a spacious
                    and comfortable area for the crew to relax and socialize. In the corresponding scene,
                    the lounge is deserted and dimly lit, creating an intimate backdrop for Picard and
                    Guinan's reflective conversation, accentuated by a panoramic view of space.",
7509                    "type": "Lounge",
7510                    "source_uuids": [
7511                        "location_ten_forward"
7512                    ]
7513                },
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL bash - myth_dev

```
(.venv) fabula-7915348:~/fabula/myth_dev{main}$ python3 json_cypher.p
```

//all your base are belong to us



BENCHMARKING

//performance check

11.81M COMPLETION TOKENS

3500 CYPHER STATEMENTS

2 HOURS PROCESSING TIME

TOTAL API COST $1.45

```
===== FABULA KNOWLEDGE GRAPH STATISTICS =====

Entity Counts:
--------------
Agents: 42
Organizations: 9
Locations: 39
Objects: 136
Scenes: 87
Events: 264
Agent Participations: 610
Object Involvements: 185
```

```
{
"title": "The Doctor Refuses to Betray the Future",
"uuid": "event_18_4",
"description": "Davros directly demands the Doctor reveal the secrets of Dalek failures, pressing for specific details about their defeats. The Doctor, recognizing the grave danger of handing over such crucial information, firmly refuses to betray the future, even under Davros's intense pressure. This refusal sets up a direct confrontation and raises the stakes of the interrogation.",
"sequence_within_scene": 4,
"key_dialogue": [
"DAVROS: Yes, but tell me, how do the Daleks fail?",
"DOCTOR: No, Davros, that is a question that the future must keep secret.",
"DAVROS: What mistakes do they make? You will tell me!",
"DOCTOR: No.",
"DAVROS: You will tell me!",
"DOCTOR: No, I will not!"
],
"agent_participations": [
"agentparticipation_agent_doctor_event_18_4",
"agentparticipation_agent_davros_event_18_4"
],
"object_involvements": [],
"next_event": "event_18_5"
},
```


“Genesis of the Daleks”
6-part serial, 1975

//observability

LLM Client Customo3Mini using model o3-mini

model	reasoning_effort	max_completion_tokens
"o3-mini"	"low"	100000

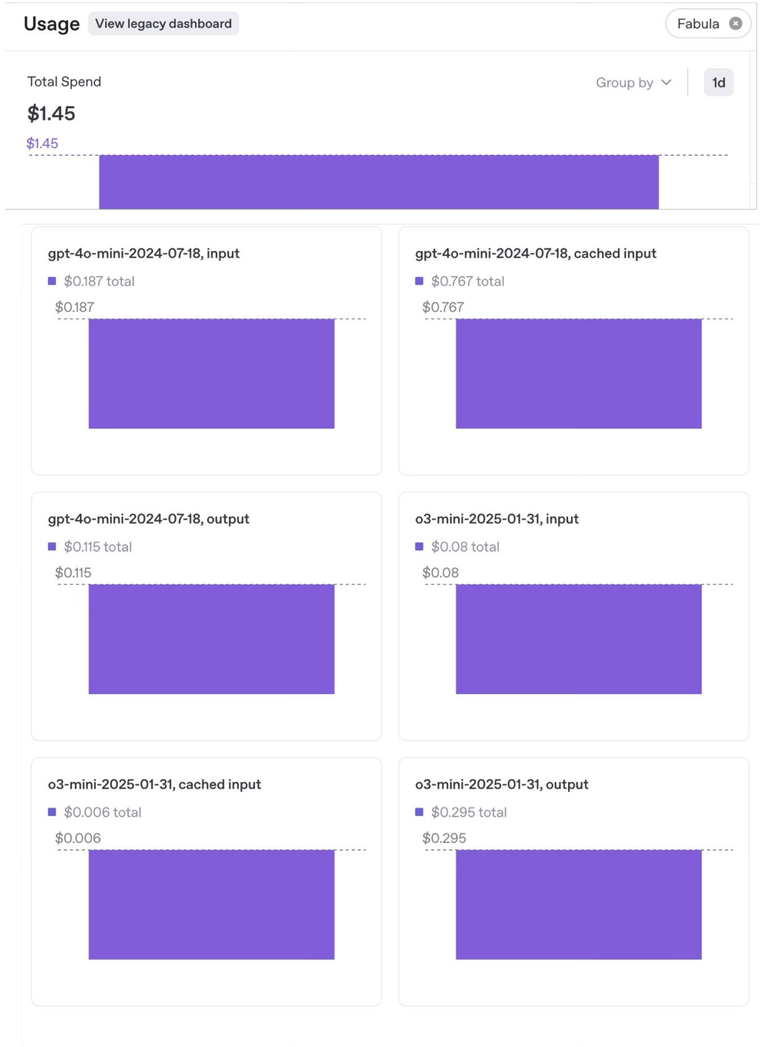
logprobs	prompt_tokens	output_tokens	total_tokens	finish_reason
null	5619	5504	11123	"stop"

LLM Prompt

```
**Instructions**:

1. **Consider Disambiguation First**: Prioritize *correctly distinguishing* unique objects before attempting to merge. Base your reasoning on all available data in the source entities, particularly name, description, purpose, and significance.

2. **Unique Object Identification**: Carefully assess each object entity, taking into account their name, description, purpose, significance, and original owner. Only merge entities if there is *overwhelming evidence* they refer to the *exact same* item. Avoid merging entities if there's even a slight chance they could be distinct objects. Pay particular attention to:
    *   Ensure the uuid is correct and appropriate
```

LLM Raw String Output

```
[
  {
    "uuid": "object_computer_analysis",
    "name": "Computer Analysis",
    "description": "This analysis, mentioned by Davros, dismisses the suggestion that the Doctor has time-traveled. It reflects the limitations of Kaled technology and serves as evidence of Davros's initial skepticism, relying on empirical data despite the extraordinary nature of the claims.",
    "purpose": "To analyze interrogation reports and dismiss claims of time travel.",
    "significance": "Represents Kaled technological limitations and Davros's initial skepticism.",
    "original_owner": "org_davros_research_group",
    "source_uuids": [
      "object_computer_analysis"
```



//response quality by model

agentparticipation_agent_the_doctor_event_4_1

current_status
The Doctor stands at the temporal core, focused and agile, interfacing with the Archive's systems. They work swiftly at the controls as the TARDIS beams stabilizing energy. Their posture is upright, their gestures deliberate and precise, indicating both command and urgency.

emotional_state
The Doctor embodies a calm yet intense determination, showing a measured confidence through subtle nods and tight-lipped concentration. Beneath the surface, an inner anxiety about the chaotic interplay of time lurks and fuels their resolve; they are aware of the impending consequences and feel a heavy burden of responsibility, even as they maintain an outward assurance that borders on philosophical nonchalance.

active_plans
Stabilize the failing temporal matrices using the TARDIS interface.
Counteract the destructive temporal virus by analyzing the Archive systems.
Guide the team through adaptive remedial actions to contain chaos.

beliefs
Time is a living entity, not a mere equation to be solved.
Historical knowledge must be preserved with responsibility.
Every moment has the potential for irreversible change when tampered with.

goals
Short-term: Immediately interface with the systems to halt the crisis.
Medium-term: Neutralize the virus and restore equilibrium to the Archive.
Ultimate: Ensure that time remains a precious, uncontrollable force unbound by human or alien interference.

openai/o3-mini
$0.0111

agentparticipation_agent_doctor_event_4_1

current_status
The Doctor stands firmly at the control panel, tapping commands into the consoles. Their posture is determined, leaning slightly forward as they engage with the technology, the sonic screwdriver a constant companion in their hand, radiating authority and focus as they orchestrate the stabilizing efforts.

emotional_state
Outwardly, The Doctor projects an air of calm urgency, their brow slightly furrowed but eyes sharp with intensity as they assess the crumbling situation. Internally, they grapple with the weight of responsibility and an underlying fear of failure, knowing that the stakes involve not just lives but the very fabric of time itself. The conflict between their protective instinct for the Archive and the chaotic threat of entropic collapse drives their urgency.

active_plans
Stabilize the failing temporal matrices using the TARDIS.
Coordinate with K'nell and Sarah to implement defensive strategies against the Entropy Syndicate.
Ensure the safety of the Archive's knowledge and prevent the Entropy Syndicate from exploiting it.

beliefs
Time is a living entity that must be respected and protected.
Knowledge should be safeguarded to prevent catastrophic misuse.
Every action has consequences that can ripple through time.

goals
Short-term: Stabilize the Archive's systems to prevent collapse.
Medium-term: Prevent the Entropy Syndicate from gaining access to destructive temporal knowledge.
Ultimate: Preserve the integrity of time and history, ensuring that dangerous knowledge remains hidden.

openai/gpt-4o-mini
$0.0389

agentparticipation_agent_the_doctor_event_4_1

current_status
The Doctor is visibly active and engaged with the Temporal Core's systems. He inject
manipulates quantum interfaces, his hands moving with precision and urgency. He is n
the K'nell or the Syndicate operatives but his presence is dominant through his tech
posture is one of focused intensity, bent over the controls, with sharp, purposeful

emotional_state
On the surface, the Doctor displays a serious and urgent demeanor characteristic of
temporal stability. There's a palpable sense of determination and a touch of wearine
Beneath the surface, however, lies a deeper sense of professional pride and a furthe
itself, a core tenet of his existence. He may also harbor a degree of frustration at
timestream, though this is masked by his focused, solution-oriented approach.

active_plans
Immediate plan: Stabilize the temporal matrices and contain the entropic cascade.
Medium-term plan: Purge the temporal virus from the Archive's systems.
Long-term plan: Ensure the integrity of the timestream and prevent future incursions

beliefs
Time is fundamental to the universe and must be protected.
The knowledge within the Quantum Archive is invaluable and should be safeguarded.
The Entropy Syndicate's actions are physically dangerous and morally reprehensible.

goals
{goal_type: Short-term, goal_description: Influence the immediate stabilization of t
the next minutes, during Scene 4., goal_accuracy: High accuracy in stabilizing the t
containing the virus.}
{goal_type: Medium-term, goal_description: Completely eradicate the temporal virus f
ongoing crisis, by the end of Scene 4., goal_accuracy: Virus eradication must be tho
corruption.}
{goal_type: Long-term, goal_description: Deter the Entropy Syndicate and similar fut
Beyond Scene 4, for the future security of the Quantum Archive and possibly Time its
and defensive measures are necessary to safeguard against recurring attacks and pote

cognitivecomputations/dolphin3.0-r1-mistral-24b:free
$0.00

//response quality by supplied context (first scene)

agentparticipation_agent_jeff_garvey_event_1_1

current_status
Garvey wakes up disoriented, experiences agony, then transitions to calmness and determination, arming himself.

emotional_state
Initially confused and in agony, transitioning to calm and determined, with hints of internal conflict.

active_plans
Regain control and understand surroundings
Act on remembered mission involving killing
Fulfill the purpose of his transformed state

beliefs
Has a mission to carry out involving killing
Needs self-defense, indicating perceived vulnerability
May believe he is under external control or influence

goals
Escape the jungle and understand his state
Identify and eliminate targets
Fulfill the purpose of his transformation

Agents: 7
Organizations: 2
Locations: 8
Objects: 18
Scenes: 14
Events: 38
Agent Participations: 75
Object Involvements: 29

meta-llama/llama-3.3-70b
no extra context

agentparticipation_agent_jeff_garvey_event_1_1

current_status
Garvey is lying on the ground, wakes up confused, and after a moment of agony, becomes calmer and pulls out a gun, intending to kill.

emotional_state
Shifts from confusion and pain to calm determination with an underlying conflict between his original self and the Varga-controlled persona.

active_plans
To remember and understand his situation.
To act on his urge to kill driven by the Varga's poison.
To possibly protect himself or assert dominance.

beliefs
He must kill as per the Varga's influence
He might be under threat or in danger.
The gun is his means of protection or survival tool

goals
Eliminate threats and understand his situation
Survive on Kembel
Unclear due to the Varga's influence, but possibly to escape the planet or complete mission objectives.

Agents: 7
Organizations: 2
Locations: 4
Objects: 6
Scenes: 14
Events: 41
Agent Participations: 78
Object Involvements: 20

meta-llama/llama-3.3-70b
full script provided

agentparticipation_agent_jeff_garvey_event_1_1

current_status
Garvey is waking up with a start, sitting up and peering about him in confusion, then experiencing intense pain and finally becoming calm with a singular focus to kill.

emotional_state
Garvey is confused, then agonized, and finally calm but driven by a desire to kill.

active_plans
Survive on the hostile planet
Kill
Regain memories

beliefs
He must kill
He is alone on the planet

goals
Understand his situation and survive
Find a way off the planet
Fulfill his obsessive desire to kill

Agents: 7
Organizations: 1
Locations: 2
Objects: 5
Scenes: 14
Events: 25
Agent Participations: 45
Object Involvements: 30

meta-llama/llama-3.3-70b
novelization provided

"Mission to the Unknown"
Recreation by University of Central Lancashire, 2019

//response quality by supplied context (last scene)

agentparticipation_agent_dalek_supreme_event_14_1

current_status
The Dalek Supreme oversees the ritual, commanding respect and obedience.

emotional_state
Confident and authoritative, driven by strategic thinking and dedication to the Dalek cause.

active_plans
Lead the Daleks to victory
Ensure the pledge is binding
Strategically direct the campaign against Earth and the galaxy

beliefs
The Daleks are destined to rule the galaxy
All life forms must be exterminated or subjugated
The Dalek Supreme’s leadership is indispensable

goals
Confirm the allegiance of all Daleks
Launch a successful assault on Earth
Achieve total domination of the galaxy

meta-llama/llama-3.3-70b
no extra context

agentparticipation_agent_dalek_supreme_event_14_1

current_status
The Dalek Supreme stands amidst the conference, overseeing the pledge of allegiance by Malpha and the other representatives. It is the central figure, embodying the power and will of the Daleks in this historic moment.

emotional_state
The Dalek Supreme is calculating and devoid of emotions in the human sense, yet it exudes an aura of superiority and anticipation. It sees the alliance as a strategic step towards the fulfillment of the Daleks' ultimate goal: universal domination.

active_plans
To utilize the alliance for the strategic advancement of Dalek interests
To oversee the planning and execution of the invasion of Earth and other galaxies
To maintain control and ensure the loyalty of the allied systems

beliefs
The Daleks are the superior force in the universe
Alliance with other systems is a temporary necessity for achieving universal domination
The eradication of opposition is essential for the survival and dominance of the Daleks

goals
Secure the loyalty and commitment of the allied systems
Invade and conquer key galaxies, including Earth's
Establish the Daleks as the rulers of the universe

meta-llama/llama-3.3-70b
full script provided

agentparticipation_agent_malpha_event_14_1

current_status
Malpha is pledging allegiance to the Dalek cause and announcing the plan to conquer Earth and the rest of the Solar System.

emotional_state
Malpha appears to be confident and determined, eager to pledge allegiance to the Dalek cause and initiate the plan for conquest.

active_plans
Pledge allegiance to the Dalek cause
Conquer Earth and the rest of the Solar System
Reduce galaxies to ashes and their people to dust

beliefs
The Dalek cause is the key to achieving ultimate power and control
Conquering Earth and the rest of the Solar System is essential to their plan
Reducing galaxies to ashes and their people to dust is a necessary step in achieving their goals

goals
Pledge allegiance to the Dalek cause and initiate the plan for conquest
Conquer Earth and the rest of the Solar System",
Achieve ultimate power and control through the reduction of galaxies to ashes and their people to dust

meta-llama/llama-3.3-70b
novelization provided

//oddities


```
{
   "uuid": "object truth",
   "name": "Truth",
   "description": "A conceptual objective referenced in the legal proceedings, concerning the pursuit of factual and philosophical veracity in determining Data's status.",
   "purpose": "Objective of the legal process.",
   "significance": "Embodies the underlying philosophical debate about Data's nature and the effectiveness of the adversarial system in uncovering reality.",
   "original owner": "org_judge_advocate_general_office_sector_twenty_three",
   "source uuids": [
       "object_truth"
   ]
},
```

```
{
   "uuid": "object jaw clench",
   "name": "Jaw Clench",
   "description": "President Bartlet's 'subtle jaw clench' is a physical manifestation of his internal emotional state, specifically his suppressed anger and growing fury. It is an involuntary tell that betrays his outward diplomatic composure, revealing the tension beneath the surface.",
   "purpose": "To non-verbally express suppressed anger",
   "significance": "Reveals Bartlet's internal state beneath diplomatic facade",
   "original_owner": "agent josiah bartlet",
   "source_uuids": [
       "object_jaw_clench"
   ]
},
```

```
{
   "uuid": "object_rain",
   "name": "Rain",
   "description": "The rain streaming down the windows of the Oval Office is more than just weather; it is a significant atmospheric detail that sets the tone of the scene. It visually represents the lingering tension and somber mood even after the immediate crisis has subsided. The 'crushing night' is metaphorically washed away by the rain, but the emotional and ethical residue remains, as seen in Josh's troubled expression.",
   "purpose": "To create a somber and reflective atmosphere",
   "significance": "Symbolizes lingering tension and emotional aftermath",
   "original_owner": null,
   "source_uuids": [
       "object_rain"
   ]
},
```

```
{
   "uuid": "object comm button",
   "name": "Comm Button",
   "description": "A wall-mounted communication device within the command complex that, when activated, alerts security forces and triggers alarms, thereby escalating conflict during the escape attempt.",
   "purpose": "Communication and alert system",
   "significance": "Acts as a trigger for alarms and organized resistance",
   "original_owner": "org kaled military",
   "source_uuids": [
       "object_comm_button"
   ]
},
```

```
{
   "uuid": "object_mindcoin_project",
   "name": "MindCoin Project",
   "description": "The hacked and failed cryptocurrency project 'MindCoin' associated with Super Hans, displayed on his laptop as a reminder of his previous venture.",
   "purpose": "Failed cryptocurrency project",
   "significance": "Represents entrepreneurial ineptitude and delusional optimism",
   "original owner": "agent_super_hans",
   "source uuids": [
       "object_mindcoin_project"
   ]
},
```

LESSONS LEARNED

//challenges

- VALID STRUCTURED OUTPUT IS HARD! ❤️ BAML
- CREATIVITY vs PROMPT ADHERENCE
- CONSISTENCY AND RESOLUTION
- CONTEXT AND COHERENCE
- PRECISION vs RECALL
- SCALING UNIQUENESS

//break it all down and watch every step

FIGURE OUT SUCCESS

SEPARATE CONCERNS

SPLIT INTO FOCUSED TASKS

PICK THE RIGHT MODELS FOR EACH JOB

GET TO KNOW YOUR LLM QUIRKS

OBSERVE EVERY STEP OF THE PIPELINE

HAVE GREAT TEST CONTENT

RUN IT AGAIN AND AGAIN

AND AGAIN.

AND GET COMFORTABLE WITH TRADEOFFS AND UNPREDICTABILITY.

what’s next

#neurosymbolic
#graphrag

//questions as queries

Who does Amanda Dalton work for?

```
MATCH (a:Agent {name: 'Amanda Dalton'})-[:AFFILIATED_WITH]-
>(o:Organization)
RETURN a.name, o.name, o.description
```

How does the episode connect the Rosslyn incident to the current crisis through different characters' perspectives?

```
// Look for direct references to Rosslyn
MATCH (e:Event)
WHERE e.description CONTAINS 'Rosslyn' OR
      any(dialogue IN e.key_dialogue WHERE dialogue CONTAINS 'Rosslyn')
RETURN e.title, e.description, e.key_dialogue

// Find Josh's trauma references
MATCH (a:Agent {name: 'Josh Lyman'})-[:HAS_PARTICIPATION]-
>(ap:AgentParticipation)-[:IN_EVENT]->(e:Event)
WHERE e.description CONTAINS 'scar' OR e.description CONTAINS 'trauma'
RETURN e.title, e.description

// Find Sam's moral reflections connected to Rosslyn
MATCH (a:Agent {name: 'Sam Seaborn'})-[:HAS_PARTICIPATION]-
>(ap:AgentParticipation)-[:IN_EVENT]->(e:Event)
WHERE any(dialogue IN e.key_dialogue WHERE dialogue CONTAINS 'Rosslyn')
RETURN e.title, e.description, e.key_dialogue
```

What is the connection between Bob Russell and Amanda Dalton?

```
// Find direct statements about their relationship
MATCH (e:Event)-[:OCCURS_IN]->(s:Scene),
      (ap:AgentParticipation)-[:IN_EVENT]->(e),
      (a:Agent {name: 'Bob Russell'})-[:HAS_PARTICIPATION]->(ap)
WHERE e.key_dialogue IS NOT NULL AND
      any(dialogue IN e.key_dialogue WHERE dialogue CONTAINS 'Amanda')
RETURN e.description, e.key_dialogue

// Find objects that connect them
MATCH (o:Object)-[:HAS_INVOLVEMENT]->(oi:ObjectInvolvement)-[:IN_EVENT]-
>(e:Event),
      (a:Agent {name: 'Bob Russell'})-[:OWNS]->(o)
WHERE o.description CONTAINS 'Amanda Dalton'
RETURN o.name, o.description, o.significance
```

What are the visual indicators that President Bartlet is stressed during the meeting with Ambassador Petrov?

```
MATCH (a:Agent {name: 'Josiah Bartlet'})-[:HAS_PARTICIPATION]-
>(ap:AgentParticipation)-[:IN_EVENT]->(e:Event),
      (e)-[:OCCURS_IN]->(s:Scene),
      (ap2:AgentParticipation)-[:IN_EVENT]->(e),
      (a2:Agent {name: 'Viktor Petrov'})-[:HAS_PARTICIPATION]->(ap2)
RETURN ap.emotional_state, ap.emotional_tags, e.description
```

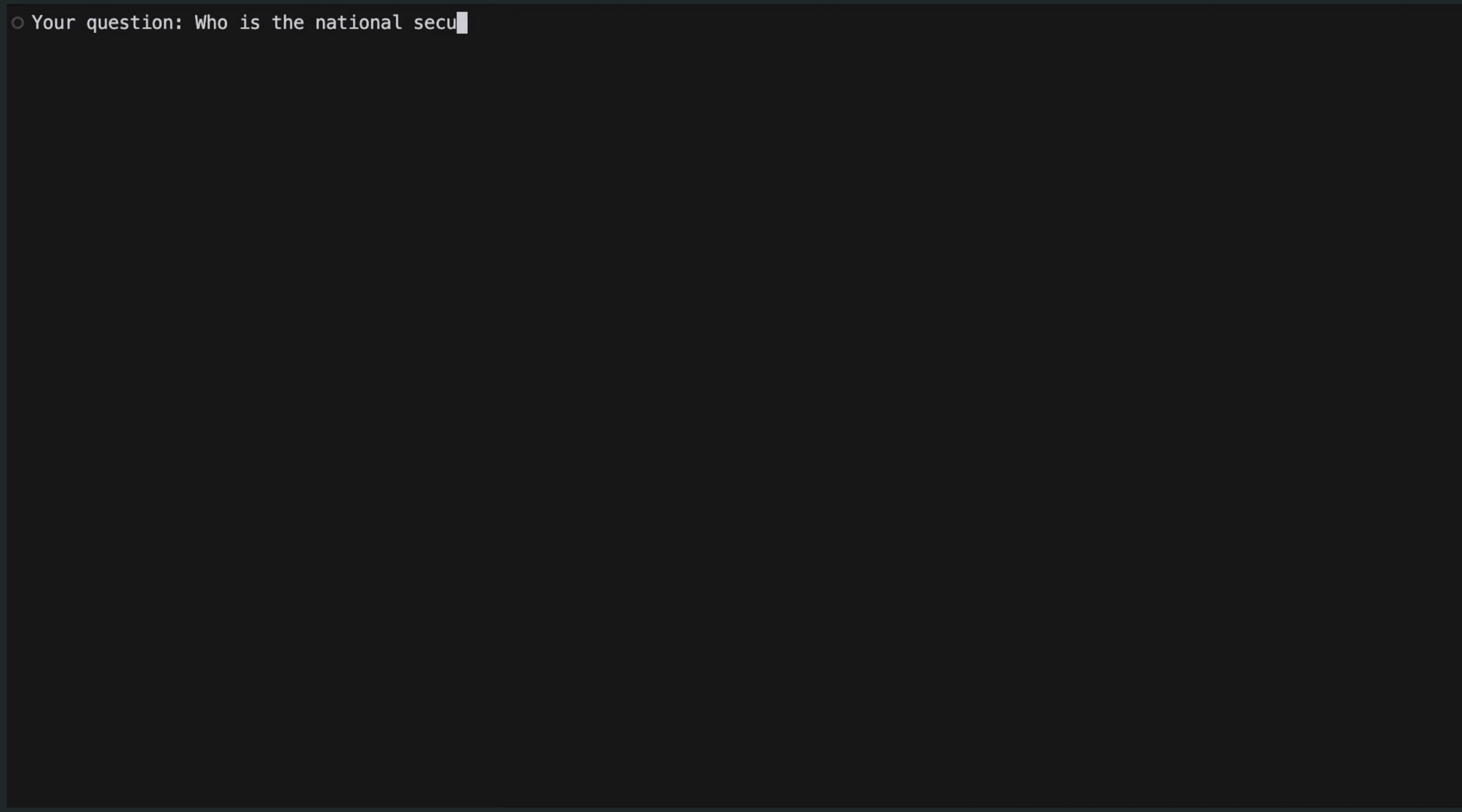
Who enters the Situation Room with President Bartlet?

```
MATCH (e:Event {uuid: 'event-1-5'})-[:OCCURS_IN]->(s:Scene),
      (ap:AgentParticipation)-[:IN_EVENT]->(e),
      (a:Agent)-[:HAS_PARTICIPATION]->(ap)
WHERE a.name <> 'Josiah Bartlet'
RETURN a.name, a.title
```

What is the chain of events that led Amanda Dalton to join USAID, according to Russell's recollection?

```
MATCH (a:Agent {name: 'Bob Russell'})-[:HAS_PARTICIPATION]-
>(ap:AgentParticipation)-[:IN_EVENT]->(e:Event)
WHERE any(dialogue IN e.key_dialogue WHERE dialogue CONTAINS 'USAID' AND
dialogue CONTAINS 'joined')
RETURN e.key_dialogue
```

//text to cypher



Your question: In which room does the first scene b

Your question: What organization did Amanda Dalton work for?

Your question: How does the episode connect the Rosslyn incident to the current crisis through different characters' perspectives?

Your question: What series of communications and alerts occur from the time the workers go missing to when CNN reveals Amanda Dalton's identity?

//more fun stuff

- timeline and multiverse management
- additional layers of extracted data
- more ways to consume graph data
- agentic context fetching
- movies, novels, comics
- what else?

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brandburner.bsky.social