Differential State Management

In software engineering, the "Diff Problem" is that LLMs are bad at precise edits. in Novel-to-Video, this is the root cause of **Video Flicker and Character Hallucination**.

When you ask an AI to generate Scene 2, it doesn't "edit" Scene 1; it re-imagines it. It accidentally "refactors" your main character's face, their clothes, or the room layout because it didn't know how to execute a precise "diff."

The Mapping: Code vs. Narrative

We implement the Cursor/Composer "Diff Architecture" directly into Context-Snoopiest.

The "Cursor" Model (Code)

THE "CODEBASE"
file.ts (1,000 lines)

THE DIFF PROBLEM
LLM creates Syntax Errors by deleting a closing bracket '}'.

THE GOAL
Apply change ONLY to the function.

The "Context-Snoopiest" Model

THE "VISUAL STATE"
TOON File (Scene & Characters)

THE HALLUCINATION
LLM gives sword but **changes shirt from Blue to Red**.

THE GOAL
Add sword, FREEZE all other pixels.

The Solution: "Narrative Edit Trajectories"

You can't retrain a model easily, but you can force your Orchestrator to use **State Diffs** instead of State Descriptions.

The "Anti-Regeneration" Rule

Standard prompting forces re-rendering of known assets.

> *"Generate Scene 2: Arjun is standing in the cave. He is wearing armor. He draws his sword."*

✕ Risk: Armor design changes, Cave lighting shifts.

The "Diff-Based" Protocol

Orchestrator generates a PATCH, not a new file.

STEP A: BASELINE (LOCKED STATE)

```
State Frame 01:
Arjun: [Wear: Rusty Armor], [Face: Scarred], [Hand: Empty]
Bg: [Cave, Wet Walls]
```

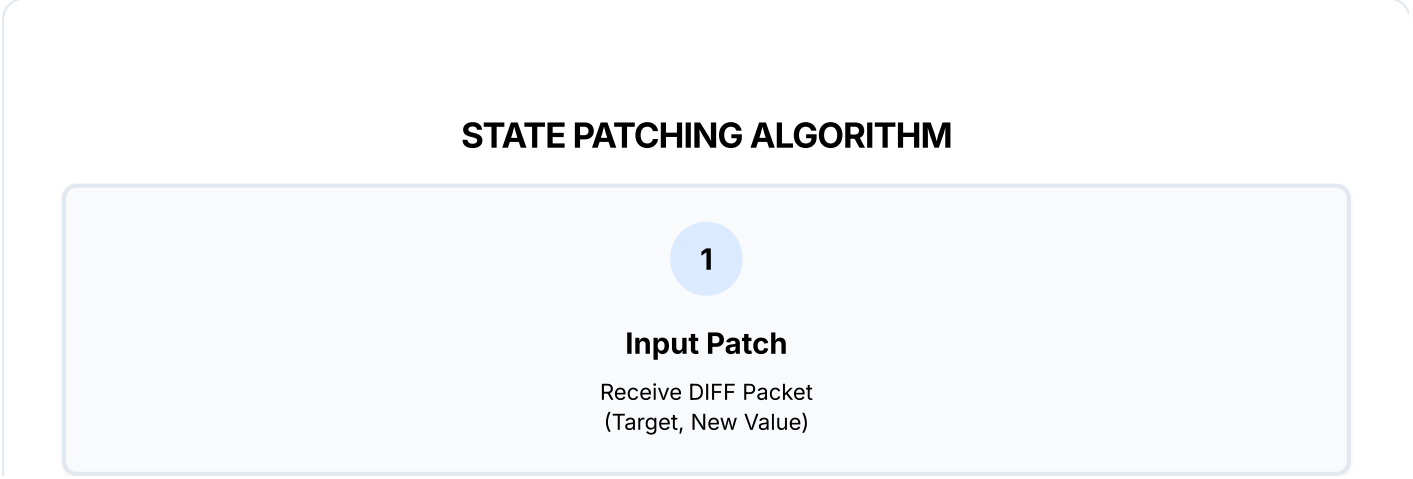
↓

STEP B: THE DIFF COMMAND

```
{
  "operation": "UPDATE",
  "target": "Arjun.Hand",
  "value": "Iron Sword",
  "constraint": "PRESERVE_ALL_OTHER_ATTRIBUTES"
}
```

Implementation: The "Visual Patching" Workflow

To leverage "Search and Replace" logic, we implement a specific tool in the Orchestrator that acts like `` `git apply` ``.



2

Verify State

Check Old Value matches
Current State

Safety Guard

3

Apply Patch

Update State Buffer
Freeze other pixels

Why This Fixes Video Generation

The biggest issue in AI video is **Temporal Stability**.

- ✕ **Without Diffs:**

  Frame 1 and Frame 2 are treated as two different paintings. The AI "guesses" the continuity.

- ✓ **With Diffs:**

  You instruct the Video AI (ControlNet): *"Keep 90% exactly the same. Only use diffusion to change the pixels around the hand."*