Spike Plan — TrailGuard AI Triage

1. Riskiest Assumption

- The biggest risk is whether AI can **accurately classify environmental trail issues from user-submitted photos and short descriptions** well enough to provide useful triage.
- If classification is unreliable, the system provides little value beyond a basic reporting app.

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2. Spike Goal

- Demonstrate that AI can take a simple report (image + short text) and **automatically assign a correct issue category and priority level**.
- Success means the AI output is reasonable, understandable, and usable without manual sorting.

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3. Inputs → Outputs

Inputs:

- User-uploaded trail photo
- Short user description (1–2 sentences)
- Basic location context (park type or region)
- (Maybe on geolocation, may not make MVP)

Outputs:

- Issue category (e.g., litter, obstruction, erosion, wildlife risk)
- Priority level (low / medium / high)
- Structured report summary for park staff

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4. Demo Plan (2–3 minutes)

- Show a simple interface where a user uploads a trail issue photo
- Enter a short description (example: “Large fallen tree blocking path”)
- Click “Analyze”
- Display AI-generated results:
    - Category detected
    - Urgency score

    - Structured report summary

Optional: quick second example to show consistency.

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5. Owners

- **Collin Cantu — Project design, presentation and reports**
- **Andrew Cadena — UI, code implementation**

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6. Exit Criteria (Clear Pass/Fail Checks)

PASS if:

- AI correctly classifies at least **2[3?] out of 3[4?] test examples**
- Output is understandable and structured
- System produces a usable priority level

FAIL if:

- AI outputs are inconsistent, vague, or unusable
- Requires heavy manual correction
- Cannot reliably categorize common issues

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7. If It Fails… (Plan B / Fallback)

- Pivot to a **rule-assisted AI system**:
    - Use simple AI text extraction + predefined category suggestions
    - Human selects final category from recommended options
- Shift focus to structured reporting + pattern visualization rather than full automation