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(.venv) karantomar@KARANs-MacBook-Pro Keystone_Redactor_Framework % python demo.py
['models/embedding-gecko-001', 'models/gemini-2.5-pro-preview-03-25', 'models/gemini-2.5-flash-preview-05-20', 'models/gemini-2.5-flash', 'models/gemini-2.5-flash-lite-preview-06-17', 'models/gemini-2.5-pro-preview-05-06', 'models/gemini-2.5-pro-preview-06-05', 'models/gemini-2.5-pro', 'models/gemini-2.0-flash-exp', 'models/gemini-2.0-flash', 'models/gemini-2.0-flash-001', 'models/gemini-2.0-flash-lite-001', 'models/gemini-2.0-flash-lite', 'models/gemini-2.0-flash-lite-preview-02-05', 'models/gemini-2.0-flash-lite-preview', 'models/gemini-2.0-pro-exp', 'models/gemini-2.0-pro-exp-02-05', 'models/gemini-exp-1206', 'models/gemini-2.0-flash-thinking-exp-01-21', 'models/gemini-2.0-flash-thinking-exp', 'models/gemini-2.0-flash-thinking-exp-1219', 'models/gemini-2.5-flash-preview-tts', 'models/gemini-2.5-pro-preview-tts', 'models/learnlm-2.0-flash-experimental', 'models/gemma-3-1b-it', 'models/gemma-3-4b-it', 'models/gemma-3-12b-it', 'models/gemma-3-27b-it', 'models/gemma-3n-e4b-it', 'models/gemma-3n-e2b-it', 'models/gemini-flash-latest', 'models/gemini-flash-lite-latest', 'models/gemini-pro-latest', 'models/gemini-2.5-flash-lite', 'models/gemini-2.5-flash-image-preview', 'models/gemini-2.5-flash-image', 'models/gemini-2.5-flash-preview-09-2025', 'models/gemini-2.5-flash-lite-preview-09-2025', 'models/gemini-robotics-er-1.5-preview', 'models/gemini-2.5-computer-use-preview-10-2025', 'models/embedding-001', 'models/text-embedding-004', 'models/gemini-embedding-exp-03-07', 'models/gemini-embedding-exp', 'models/gemini-embedding-001', 'models/aqa', 'models/imagen-4.0-generate-preview-06-06', 'models/imagen-4.0-ultra-generate-preview-06-06', 'models/imagen-4.0-generate-001', 'models/imagen-4.0-ultra-generate-001', 'models/imagen-4.0-fast-generate-001', 'models/veo-2.0-generate-001', 'models/veo-3.0-generate-preview', 'models/veo-3.0-fast-generate-preview', 'models/veo-3.0-generate-001', 'models/veo-3.0-fast-generate-001', 'models/veo-3.1-generate-preview', 'models/veo-3.1-fast-generate-preview', 'models/gemini-2.0-flash-live-001', 'models/gemini-live-2.5-flash-preview', 'models/gemini-2.5-flash-live-preview', 'models/gemini-2.5-flash-native-audio-latest', 'models/gemini-2.5-flash-native-audio-preview-09-2025']
```

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## KEYSTONE REDACTOR FRAMEWORK DEMO

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This demo will walk through the full, privacy-preserving workflow.

2025-11-12 14:15:17,453 - INFO - GeminiClient initialized successfully with hardcoded model:  
models/gemini-2.5-flash

--- ORIGINAL TEXT ---

'Please schedule a call with Dr. Evelyn Reed for May 20, 2024. She is currently in Berlin. Her contact email is e.reed@science-corp.net. The budget for the consultation is \$750.'

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### ===== STAGE 1: PII DETECTION =====

Using PII Detector (spaCy + regex) to find sensitive data...

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Original Text: 'Please schedule a call with Dr. Evelyn Reed for May 20, 2024. She is currently in Berlin. Her contact email is e.reed@science-corp.net. The budget for the consultation is \$750.'

--> Detected PII Entities:

- Entity: 'Evelyn Reed', Label: PERSON, Indices: [32, 43]
  - Entity: 'May 20, 2024', Label: DATE, Indices: [48, 60]
  - Entity: 'Berlin', Label: GPE, Indices: [82, 88]
  - Entity: 'e.reed@science-corp.net', Label: EMAIL, Indices: [111, 134]
  - Entity: '750', Label: MONEY, Indices: [172, 175]
- 

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### ===== STAGE 2: PII REDACTION =====

Using Redactor to replace PII with placeholders...

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### ===== Redaction Result =====

Original Text: 'Please schedule a call with Dr. Evelyn Reed for May 20, 2024. She is currently in Berlin. Her contact email is e.reed@science-corp.net. The budget for the consultation is \$750.'

Redacted Text: 'Please schedule a call with Dr. [PERSON\_A] for [DATE\_A]. She is currently in [GPE\_A]. Her contact email is [EMAIL\_A]. The budget for the consultation is \$[MONEY\_A].'

Placeholder Map:

```
{ '[DATE_A]': 'May 20, 2024',
  '[EMAIL_A]': 'e.reed@science-corp.net',
  '[GPE_A]': 'Berlin',
  '[MONEY_A]': '750',
  '[PERSON_A]': 'Evelyn Reed'}
```

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===== STAGE 3: SECURE LLM CALL =====

Sending the SAFE, REDACTED prompt to the Gemini LLM...

Prompt being sent: 'Please schedule a call with Dr. [PERSON\_A] for [DATE\_A]. She is currently in [GPE\_A]. Her contact email is [EMAIL\_A]. The budget for the consultation is \$[MONEY\_A].'

--- LLM RESPONSE (contains only placeholders) ---

'Here are the key points:

- \* A call needs to be scheduled with Dr. [PERSON\_A] for [DATE\_A].
- \* Dr. [PERSON\_A] is currently in [GPE\_A].
- \* Her contact email is [EMAIL\_A].
- \* The budget for the consultation is \$[MONEY\_A].'

>>> Note: The LLM never saw the original names, dates, or emails. <<<

===== STAGE 4: PII RESTORATION =====

Using Restorer to de-redact the LLM's response...

2025-11-12 14:15:30,579 - INFO - Starting restoration process...

----- Restoration Analysis -----

Before Restoration (LLM Output):

'Here are the key points:

- \* A call needs to be scheduled with Dr. [PERSON\_A] for [DATE\_A].
- \* Dr. [PERSON\_A] is currently in [GPE\_A].
- \* Her contact email is [EMAIL\_A].
- \* The budget for the consultation is \$[MONEY\_A].'

2025-11-12 14:15:30,580 - INFO - Restoring '[MONEY\_A]' -> '750'

2025-11-12 14:15:30,580 - INFO - Restoring '[EMAIL\_A]' -> 'e.reed@science-corp.net'

2025-11-12 14:15:30,580 - INFO - Restoring '[GPE\_A]' -> 'Berlin'

2025-11-12 14:15:30,580 - INFO - Restoring '[DATE\_A]' -> 'May 20, 2024'

2025-11-12 14:15:30,580 - INFO - Restoring '[PERSON\_A]' -> 'Evelyn Reed'

After Restoration (Final Text):

'Here are the key points:

- \* A call needs to be scheduled with Dr. Evelyn Reed for May 20, 2024.
  - \* Dr. Evelyn Reed is currently in Berlin.
  - \* Her contact email is e.reed@science-corp.net.
  - \* The budget for the consultation is \$750.'
- 

===== DEMO COMPLETE: FINAL OUTPUT =====

This is the final, human-readable text after re-inserting the PII.

The original data was protected throughout the entire process.

--- FINAL RESTORED TEXT ---

'Here are the key points:

- \* A call needs to be scheduled with Dr. Evelyn Reed for May 20, 2024.

- \* Dr. Evelyn Reed is currently in Berlin.
  - \* Her contact email is e.reed@science-corp.net.
  - \* The budget for the consultation is \$750.'
- 

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