Project: Automated Task Workflow Integrator

-Akshyat Shah
-Shashi Sah

Introduction:

Revolutionizing Interaction: Introducing self-learning Actionable AI Agents for seamless software interaction.

Natural Language Integration: Operate software interfaces using simple human language prompts.

Real-Time Adaptation: Agents learn and adapt in real-time to enhance user interaction efficiency.

Application Scope: Automating interactions across popular SaaS products like Trello, Spotify, and Notion.

Enhanced Productivity: Driving productivity and innovation through advanced AI-driven solutions.
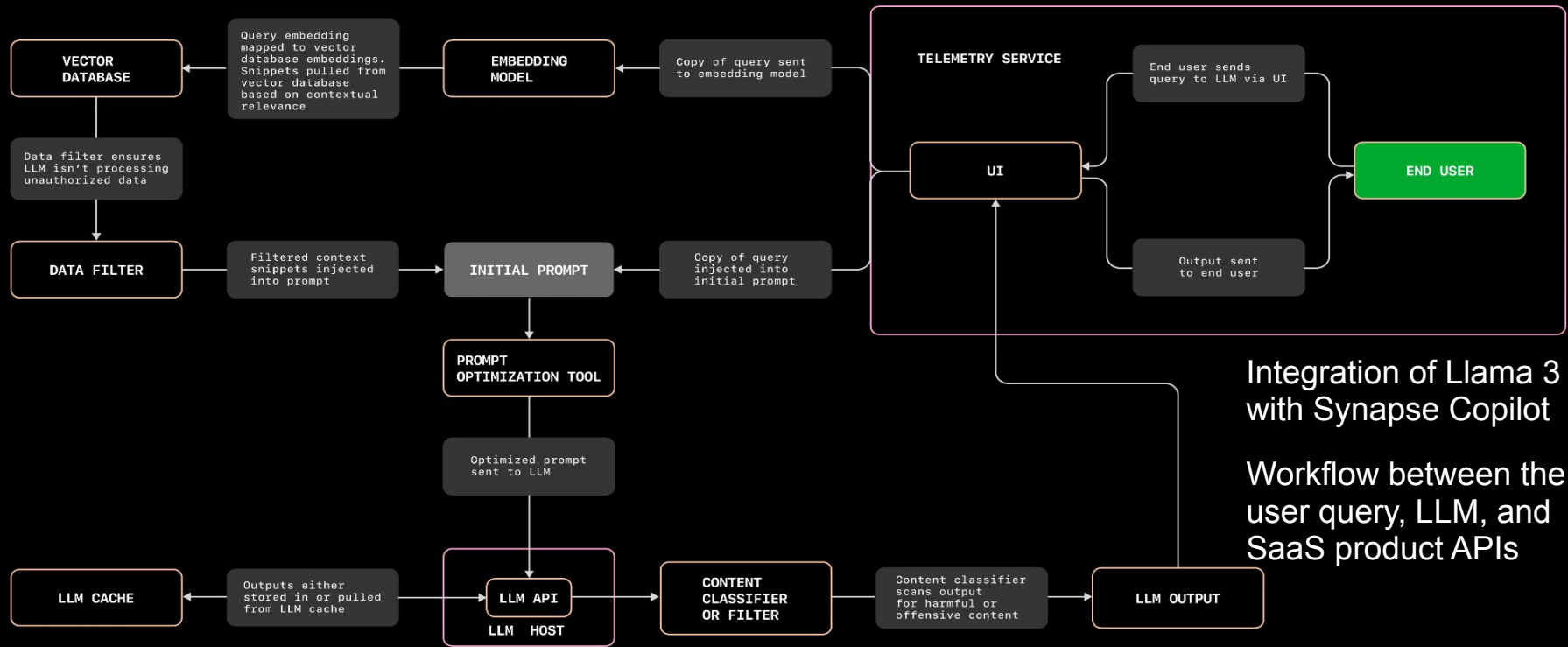
Overview of Technologies used:

LLMs and Frameworks

- Llama 3
- Ollama framework
- Synapse Copilot

SaaS Products

- Trello
- Spotify
- Notion

Project Architecture:

VECTOR DATABASE

Query embedding mapped to vector database embeddings. Snippets pulled from vector database based on contextual relevance

EMBEDDING MODEL

Copy of query sent to embedding model

TELEMETRY SERVICE

End user sends query to LLM via UI

UI

END USER

Data filter ensures LLM isn't processing unauthorized data

DATA FILTER

Filtered context snippets injected into prompt

INITIAL PROMPT

Copy of query injected into initial prompt

Output sent to end user

PROMPT OPTIMIZATION TOOL

Optimized prompt sent to LLM

LLM CACHE

Outputs either stored in or pulled from LLM cache

LLM API

LLM HOST

CONTENT CLASSIFIER OR FILTER

Content classifier scans output for harmful or offensive content

LLM OUTPUT

Integration of Llama 3 with Synapse Copilot

Workflow between the user query, LLM, and SaaS product APIs

THIS DIAGRAM REPRESENTS THE ARCHITECTURE OF TODAY'S LLM APPLICATION. THE DIFFERENT COMPONENTS CAN BE ROUGHLY GROUPED INTO THREE CATEGORIES: USER INPUT, INPUT ENRICHMENT TOOLS AND PROMPT CONSTRUCTION, AND EFFICIENT AND RESPONSIBLE AI TOOLING.

Workflow Integration - Trello

Trello Integration Details

- Example user query for Trello

  => Create a label "Urgent" in red color for the board with id "658d2272d02bb8b7918d140f"

  => Delete the board with id "658d2272d02bb8b7918d140f".

- Steps for processing the query through Llama 3 and Synapse Copilot

- Interaction with Trello API

Workflow Integration - Spotify

Spotify Integration Details

- Example user query for Spotify

  => skip to the next track.

  => Make a new playlist called "Saada Haaq" containing the most popular songs by Diljit Dosanjh

- Steps for processing the query through Llama 3 and Synapse Copilot

- Interaction with Spotify API
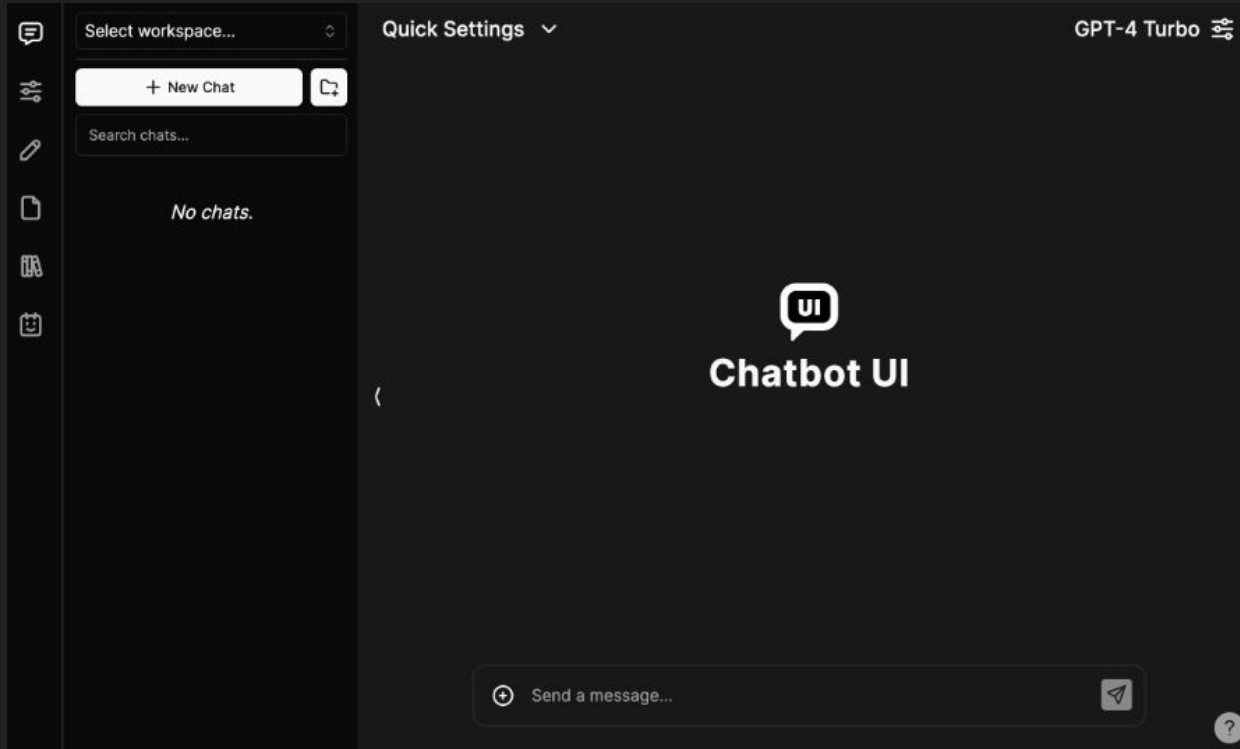
Workflow Integration - Notion

Notion Integration Details

- Example user query for Notion

  => Add a comment "Hello world" to the page with id "6607ea23df6c4e42afc75aa5353a2329".

  => Search all parent or child pages and databases

- Steps for processing the query through Llama 3 and Synapse Copilot

- Interaction with Notion API

Error Handling and Replanning

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1. Utils.py (fixjson_error) was not converting the request to the right json format so we made sure it happened.
2. Notion did not have a prompt related info which we handled.
3. Helper.py did not have a header for Notion and Spotify which is required during request API call (So added this portion)
4. Multiple debugging steps was made to ensure the local LLMs were integrated properly.

User Interface (UI)

Description of the GitHub repository with UI design:

https://github.com/mckaywrigley/chatbot-ui

Future Work and Improvements

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E-commerce Platforms: Supporting platforms like Shopify or WooCommerce for online store management.

Analytics and Reporting: Integrating with tools such as Google Analytics or Tableau for data analysis.

Summary:

Transformative Technology: Actionable AI Agents revolutionize human-computer interaction.

Application: Automating interactions with Trello, Spotify, and Notion through natural language prompts.

Benefits: Enhanced user experience, increased productivity, and seamless integration.

Future: Focus on scalability, UI improvements, expanded API integrations, and advanced error handling to drive continuous improvement.