



Austin LangChain Users Group
July Meeting - 7:15 CST Start



July Meeting - Quickstart + NVIDIA Contest Showcases

Austin LangChain Users Group



Github



meet.aimug.org

Welcome - Austin LangChain

- Local Austin LangChain User Group
 - Discord - <https://discord.gg/fjQfpwcsZX>
 - Github - https://github.com/colinmcnamara/austin_langchain
 - Meetup - <https://www.meetup.com/austin-lanchain-ai-group/>
 - Twitter - [@AustinLangChain](https://twitter.com/@AustinLangChain)
 - Youtube - <https://www.youtube.com/@AustinLangChain>
- **Monthly Showcases & Mixer**
- **Monthly Hacky Hours**
- **Office Hours** 2PM CDT Office Hours
- Low stress, learning and sharing
- Connect with other early adopters
- Learn, Share, Grow
- CoC - **Be cool** to each other, no gross behavior



Log into Sessions @ meet.aimug.org

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Wednesday, July 10 | 07:15 PM ~ 09:15 PM

[Start event](#) [Join Backstage](#)

 Colin McNamara

Austin LangChain - July meeting

[Edit event](#) starts in 3 hours 38 minutes

Welcome to the Austin LangChain Users Group!

Are you an AI enthusiast who finds the power of LangChain fascinating? Are you currently learning and utilizing this innovative technology? Look no further! Our meetup group is the perfect platform for you to connect with like-minded individuals in the Austin area who share your passion for LangChain AI technology.

July Meeting Agenda:

<https://meet.aimug.org/session/6cacd549-11e1-42c2-a3bc-01def0906ac2>



LangChain Overview

Colin McNamara

- **Home:** Austin, East Side
- **Work:** Managing Partner, Engineering & Finance
Always Cool Brands
- **Background:** Hyperscale Cloud Engineering & Operations
- **FOSS:** Linux, OpenStack, OpenDaylight, ...
- **Using LangChain:** Business operations
- **Socials:**
 - WWW <http://www.colinmcnamara.com>
 - Linkedin <https://www.linkedin.com/in/colinmcnamara/>
 - X(Twitter) [@colinmcnamara](https://twitter.com/colinmcnamara)



LangChain (Upstream) Project

Blog - <https://blog.langchain.dev/>

Repo - <https://github.com/langchain-ai/langchain>

Founder - Harrison Chase

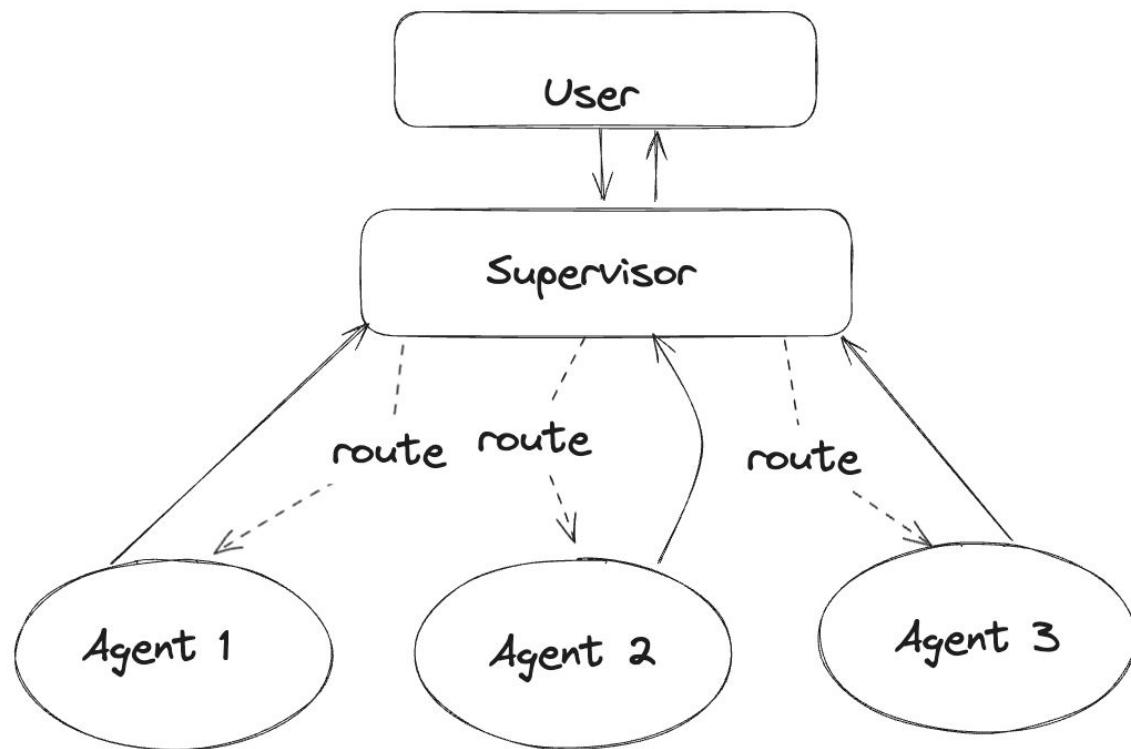


LangSmith
Freemium Dev Tool

LangGraph Cloud
Hosted / K8s solution

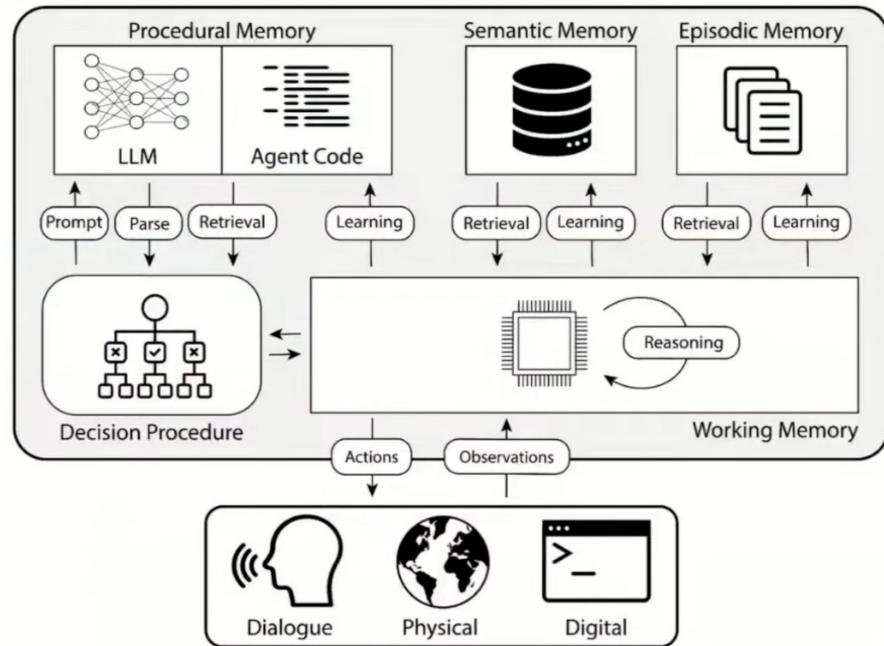
LangChain Python Library
Open Source (Free)

Basic LangGraph - User / Supervisor pattern

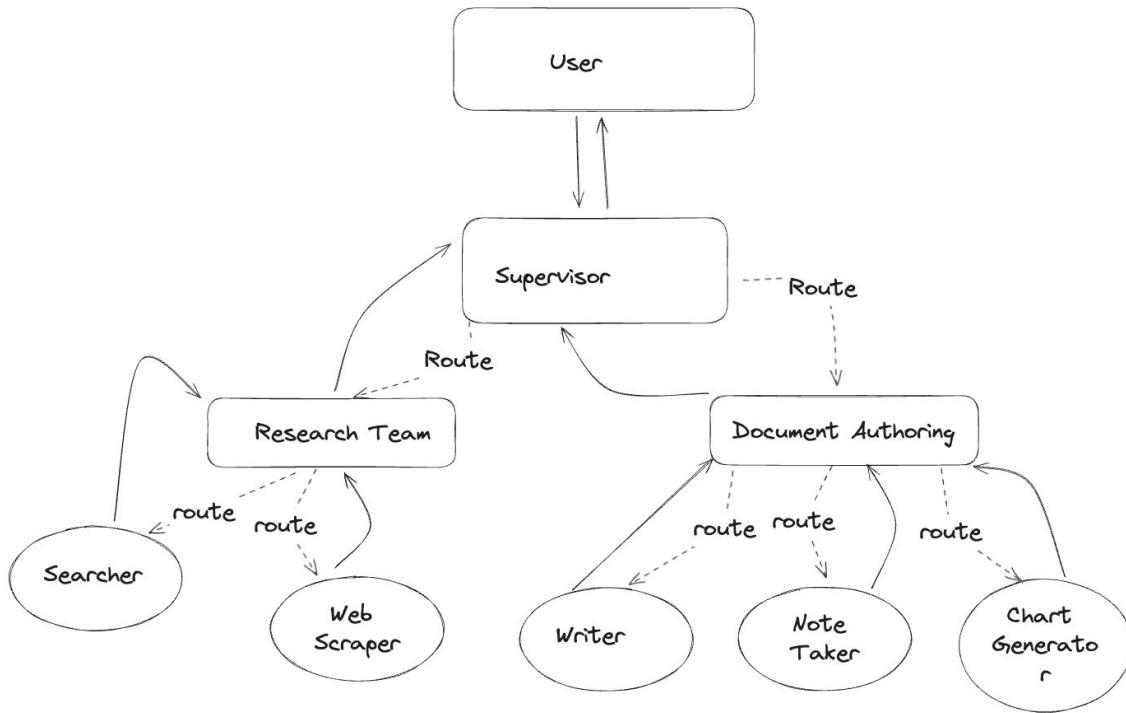


LangChain Agent Key Concepts

- Agents
 - Independent Entity
 - Has access to tools
 - Reasons, Acts (ReAct)
 - Combination of
 - LLM
 - Code
 - Memory
 - Tools



Hierarchical Teams



LangSmith

- Web interface for logging of AI applications
- Functional and Non-Functional information
- Performance & Query optimization
- Easily added to LangChain code
- Deploy LangGraph Code

The screenshot displays the LangSmith web application interface. On the left, a 'Trace' sidebar shows a log entry for a 'research-assistant' run, which was successful and took 24.257 seconds. The main area is titled '/research-assistant' and contains sections for 'Run', 'Feedback', and 'Metadata'. In the 'Input' section, there is a text input field containing a question about finding great tacos in Austin's east side. Below it, a YAML input field is empty. The 'Output' section displays an AI-generated research report. The report starts with a header: '# Research Report: Ranking the Top 3 Taco Trucks, Trailers, or Restaurants in Austin's East Side'. It includes an introduction: 'Austin, Texas is renowned for its vibrant food scene, particularly its mouthwatering tacos. The city's east side is home to a plethora of taco trucks, trailers, and restaurants that offer a diverse range of flavors and culinary experiences. In this research report, we will explore the top three establishments in Austin's east side that are highly recommended for their exceptional tacos. We will consider the information provided in various sources to determine the best options for taco enthusiasts.' It also includes a methodology section: 'To compile this research report, we analyzed multiple sources that provide insights into the best taco trucks, trailers, and restaurants in Austin's east side. The sources include reputable websites such as Eater, Guide2ATX, Austin Eater, and The Infatuation. We carefully reviewed the information provided in each source to identify the top-rated establishments based on their popularity, customer reviews, and expert opinions. Our aim is to present an objective and comprehensive ranking of the top three taco trucks, trailers, or restaurants in Austin's east side.'

Introduction

Austin, Texas is renowned for its vibrant food scene, particularly its mouthwatering tacos. The city's east side is home to a plethora of taco trucks, trailers, and restaurants that offer a diverse range of flavors and culinary experiences. In this research report, we will explore the top three establishments in Austin's east side that are highly recommended for their exceptional tacos. We will consider the information provided in various sources to determine the best options for taco enthusiasts.

Methodology

To compile this research report, we analyzed multiple sources that provide insights into the best taco trucks, trailers, and restaurants in Austin's east side. The sources include reputable websites such as Eater, Guide2ATX, Austin Eater, and The Infatuation. We carefully reviewed the information provided in each source to identify the top-rated establishments based on their popularity, customer reviews, and expert opinions. Our aim is to present an objective and comprehensive ranking of the top three taco trucks, trailers, or restaurants in Austin's east side.

Ranking the Top 3 Taco Trucks, Trailers, or Restaurants in Austin's East Side

1. Las Trancas

Las Trancas is a highly recommended taco trailer located in Austin's east side. While the specific source, Austin Eater, does not mention Las Trancas as one of the best taco trucks in Austin, it does highlight Las Trancas as the top-rated taco trailer in the east side. Unfortunately, we could not find any additional information about Las Trancas from other sources. However, given its recognition as the best taco trailer in the area, it is worth visiting for its authentic and delicious tacos.

2. Suerte

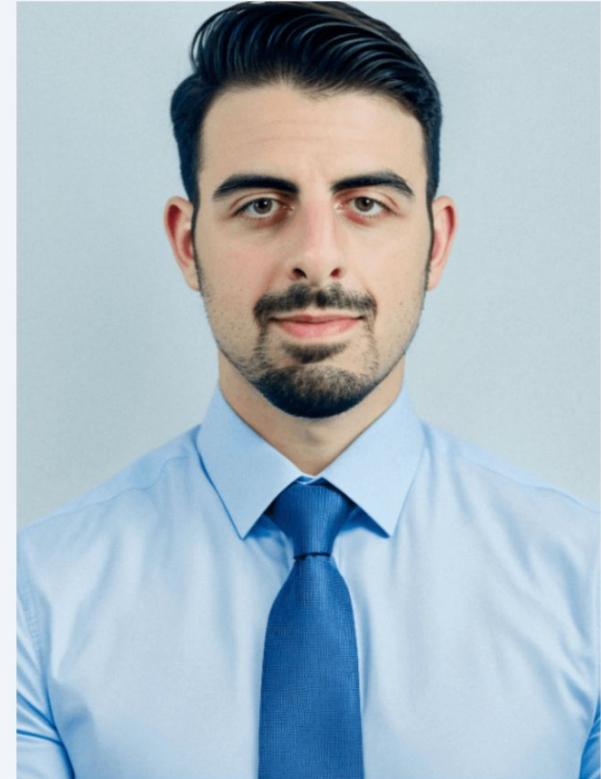
LangChain Quickstart

Ricky Pirruccio 

Manufacturing Engineer
Applied Materials



Riccardo Pirruccio is a Manufacturing Engineer at Applied Materials, holding a Bachelor's in Mechanical Engineering from the University of Texas at Tyler. His expertise lies in developing manufacturing intelligence applications in the semiconductor supply chain sector.





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Agenda

- Welcome Message
- News & Announcements
- Talks and Labs!
 - Mixer Exercise
 - LangGraph Reporting
 - WebRTC - Voice enabled AI



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- Monthly virtual meetings
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Thanks to our Supporters

Lynx Ventures - Venue Sponsor

Jockomo Games - Food & Beverage

Always Cool Brands - Sessions Platform

Contributors - code, content, community





VIDEO PRODUCTION



Austin Lang Chain Events

- **Office Hours** Tuesdays at 2pm on Discord - <https://discord.gg/fjQfpwcsZX>
- **Community Call** Thursdays at 2:00 -
<https://app.sessions.us/session/56b791ec-0676-45ee-9caf-cfd72b3faa32>
- **Hacky Hour** - 6pm Wed July 24th @ Luster Pearl East
<https://www.meetup.com/austin-langchain-ai-group/events/302162630/?slug=austin-langchain-ai-group&eventId=301087611>
- **Showcases** - In person and hybrid August 7 @ DTAC

Style Guide - AI Fashion Assistant



Style Guide - AI Fashion Assistant

NVIDIA + LangChain Generative AI Contest entry by Karim
Lalani

Presented at Austin LangChain Meetup on July 10th 2024

Socials



LinkedIn
[@karim-lalani/](https://www.linkedin.com/in/karim-lalani/)



Github
[@lalanikarim](https://github.com/lalanikarim)



Medium
[@klcoder](https://medium.com/@klcoder)



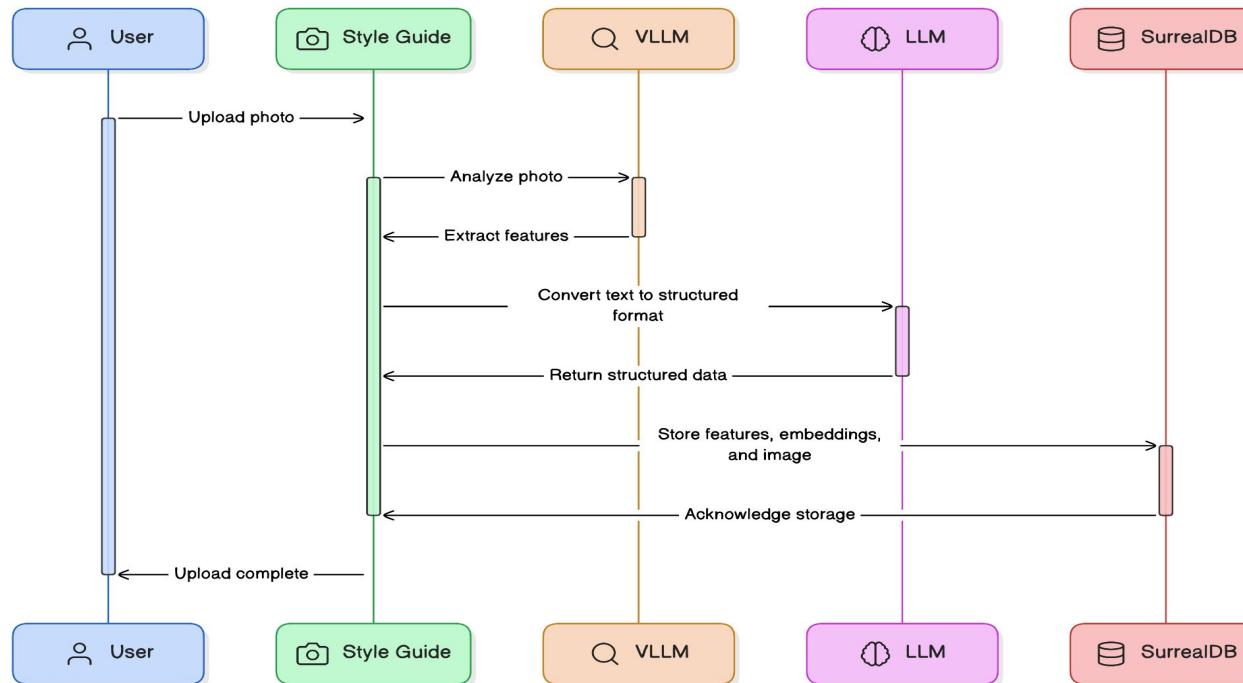
Project Overview

- Voice enabled AI assistant
- Lets you talk to your wardrobe
- Analyzes uploaded photos
- Identifies the kind of clothes, color, style, etc.
- Stores attributes along with photo in a vector database
- Suggests outfits based on user's query
 - Show me casual wear
 - Show me formal wear
 - Show me blue shirts
 - I am going on a vacation to the Mediterranean. Suggest some outfits to pack.

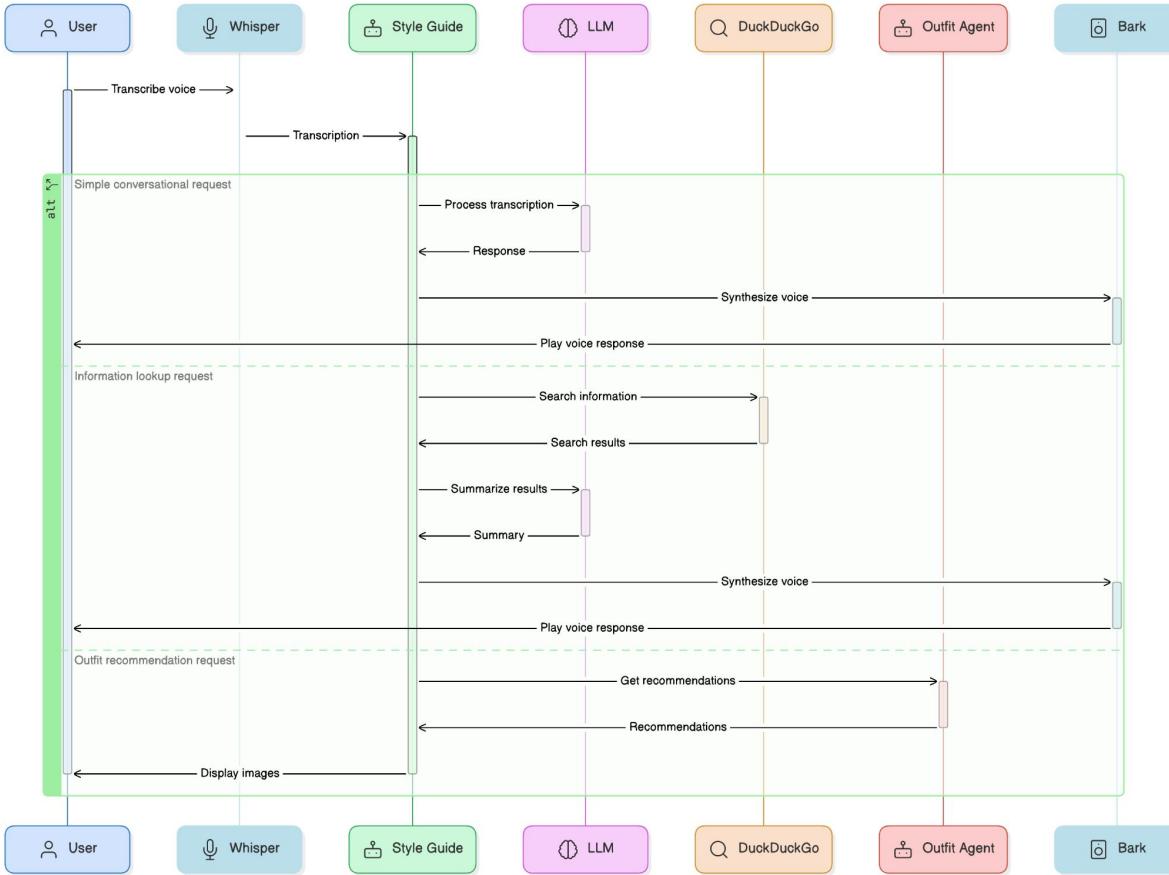
Technologies

- Speech to text is using [OpenAI's open source Whisper mini](#) model.
- Text to Audio is using [Suno's open source Bark small](#) model.
- WebRTC scaffolding from [WebRTC AI Voice Chat](#) project.
- Hosted AI Inference [NVIDIA Inference Microservice \(NIM\)](#):
 - Text-to-text LLM [meta/llama3-8b-instruct](#)
 - Image-to-text VLLM [microsoft/phi-3-vision-128k-instruct](#)
 - Retrieval Embeddings [nvidia/embed-qa-4](#)
- Document and Vector store database [SurrealDB](#)
- Web Search using [DuckDuckGo](#)
- GenAI framework [LangChain](#)
- GenAI API calls monitoring and tracing [LangSmith from LangChain](#)

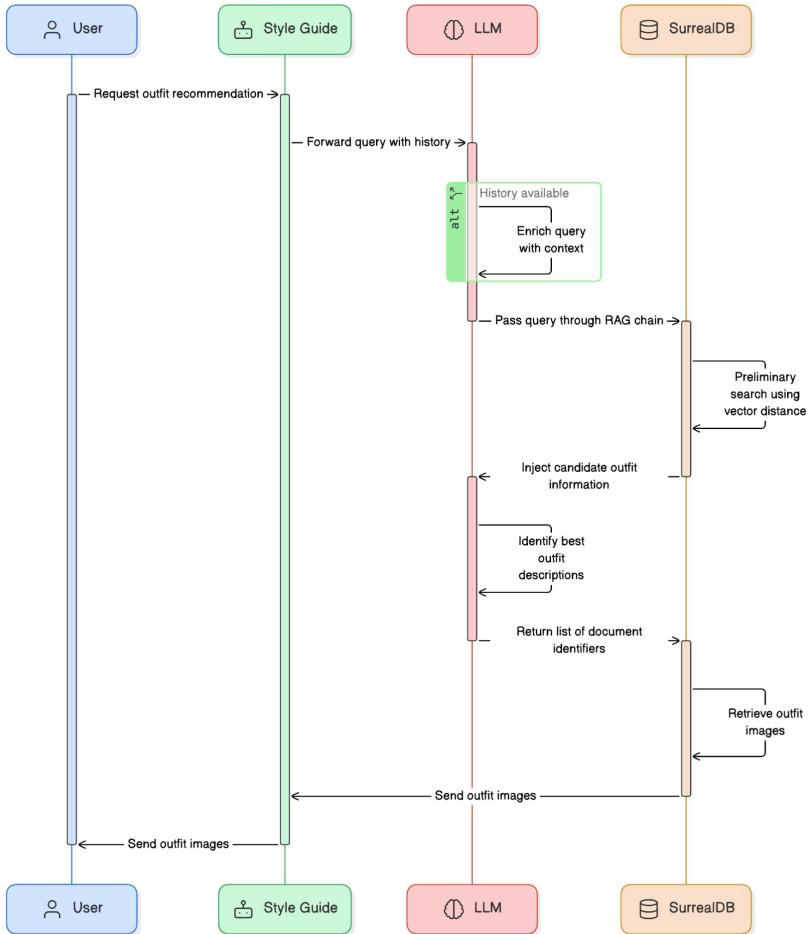
Photo upload workflow



AI Agent Workflow



Outfit Recommendation Workflow



Challenge - ChatNVIDIA lacks tool calling support

ChatNVIDIA model within **langchain-nvidia-ai-endpoints** package didn't support tool calling at the time of contest

Resolution

Wrote a wrapper inspired by **OllamaFunctions** to add tool calling capabilities to ChatNVIDIA model

```
nvidia_functions = create_tool_calling_model(ChatNVIDIA, "chat_nvidia_functions")
```

https://github.com/lalanikarim/style-guide-ai-assistant/blob/main/tool_calling_model.py

PR [#23193](#) has been submitted to LangChain with a Python mixin version of the wrapper

Challenge - phi-3-vision's poor JSON output quality

phi-3-vision-128k-instruct model didn't generate json output which was needed to extract features as structured output

Resolution

Deferred structured output parsing to **llama3-8b-instruct** which handled tool calling and structured output parsing reliably

```
outfit_output_llm = _llm.with_structured_output(Outfit, include_raw=False)
nv_fc_chain = RunnableLambda(get_image_prompt)
    | _v11m
    | RunnableLambda(get_message_content)
    | outfit_output_llm
```

Demo



Questions?

Resources

Github - <https://github.com/lalanikarim/style-guide-ai-assistant/>

NVIDIA NIM Playground - <https://build.nvidia.com/explore/discover>

Surreal DB - <https://surrealdb.com/>

LangChain - <https://www.langchain.com/>

Most Awesome LangChain Resource in Central TX -

<https://www.meetup.com/austin-langchain-ai-group/>

Thank you!

Jackson Arnold - Next.js + LangServe

- LangServe repo:
<https://github.com/jacksonarnold/assistant-langserve-api/tree/main>
- Next.js repo: <https://github.com/jacksonarnold/summarizer-app>
- Deck: <https://docs.google.com/presentation/d/10SIfXZiJGn8CIkK5vZGVN7n7bZKCnE6G052RONq4hNQ/edit?usp=sharing>
- LinkedIn: <https://www.linkedin.com/in/jackson-s-arnold/>



Next.js + LangServe

Purpose

- Original purpose of the app
- Create a template for full-stack, LangChain integrated web app
- Project for learning and sharing through the process

Current Stack

- Next.js 14 - using TypeScript
 - NextUI
 - NextAuth.js
 - v0.dev for inspiration
- FastAPI with LangServe
- MongoDB

Where we're at

- Next.js
 - Component library installed - basic UI and navigation layout
 - Authentication - sign in & sign out
 - Upload documents and generating summary through invoke or stream
-

What's Next

- Move MongoDB calls to backend
- Swap NextAuth.js for FireBase Auth
- Strip any PII from uploaded documents
- Deploy Next.js app to Vercel
- Integration with LangGraph

Show and Tell

Repository links

- LangServe -
<https://github.com/jacksonarnold/assistant-langserve-api/tree/main>
- Next.js - <https://github.com/jacksonarnold/summarizer-app>

Connect With Me

GitHub



LinkedIn



Email: jacksonarnold96@gmail.com

Thank you - See you next time - Hacky Hour 7/24

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