Envitas Sprint Review #5

Jeffrey, Mike, Gabriel, Cho, Topher

Overall Project Update

- Difficulty integrating both frontend and backend with LlamaIndex
- Advanced filtering mechanism designed and implementation began

Next Steps

- Smaller tasks breakdown and split for integration
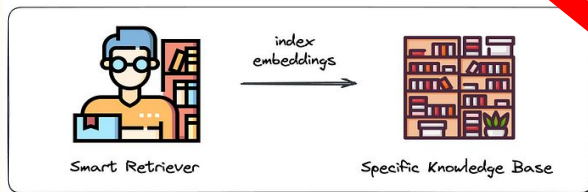
Gabriel Sprint Update

- LlamaIndex V2 Underway - Reviews database enriching and ranking + function calling
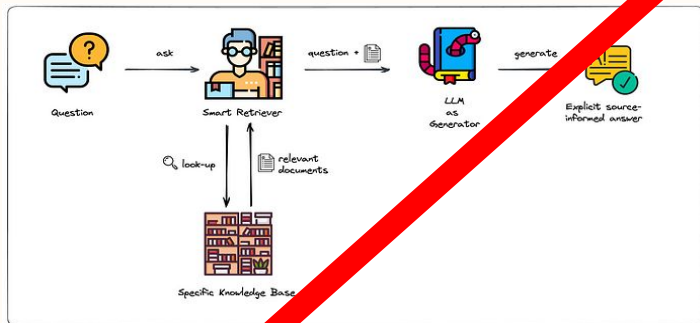- Trouble integrating llama-index to our remote database

Next Steps

- With team, begin integration with both database and UI.
- Work with Cho to figure out the ranking.

Retrieval Augmented Generation (RAG)

Step 1: Embed and index our entire restaurant **review dataset.**

Step 2: After user sends restaurant **search query**, smart retriever compares it with all **restaurant reviews** to find **similarity score** between them.

Step 3: Our RAG pipeline then sends all the relevant restaurant/review information and rankings back to our GPT4 agent, and he crafts the final response for the user, based on that data.

- **Socarrat Paella Bar** (Multiple Locations): Reviews rave about their authentic paellas and a huge selection of both classic and creative tapas. Many mention the lively atmosphere, fueled by flamenco performances and sangria.

Socarrat Paella Bar NYC

Featured review:

5/5 Stars | Olivia: "The paella was absolutely incredible - the perfect amount of socarrat (the crispy rice at the bottom). And the live music made for such a fun atmosphere, perfect for our date night!"

New! - LLM Assisted Dataset Enrichment (In Progress)

Step 1: Extract, score, and structure our entire **restaurant review dataset,** using **GPT-3.5**

```
"aspect": "dishes",
"subcategories": [
  {
    "name": "hongos",
    "score": 5,
    "comment": "Definitely try the hongos. It comes with crispy flavorful shallots."
  },
  {
    "name": "3-cheese board",
    "score": 5,
    "comment": "The 3-cheese board was delicious."
  },
```

Step 2: After user sends restaurant **search query**, it's **subjective features** are identified and their respective scores on the **enriched review dataset** are used to **re-rank** the remaining restaurants that survived the first filtering cut.

Step 3: Our LLM pipeline then sends all the relevant restaurant/review information and rankings back to our GPT4 agent, and he crafts the final response for the user, based on that data.

- **Socarrat Paella Bar** (Multiple Locations): Reviews rave about their authentic paellas and a huge selection of both classic and creative tapas. Many mention the lively atmosphere, fueled by flamenco performances and sangria.

Socarrat Paella Bar NYC

Featured review:
5/5 Stars | Olivia: "The paella was absolutely incredible - the perfect amount of socarrat (the crispy rice at the bottom). And the live music made for such a fun atmosphere, perfect for our date night!"

★★★★☆ Mar 23, 2024

◙ 6 photos

Service was a bit questionable as my server didn't come off very friendly to me, felt a bit snooty. Maybe she had a rough day so wasn't giving her best personality so brushed it off!

Food was amazing as always since this is my second time here at this location. Ambiance very romantic. Iberian Pig is always a great ATL spot to go to for Spanish tapas!

If you like mushrooms, definitely try the hongos. It comes with crispy flavorful shallots. I tried the 3-cheese board, empanadas, pork cheek tacos, lomo and gambas. All so delicious!

See all photos from Chloe C. for The Iberian Pig

```json
{
  "restaurant": {
    "name": "Iberian Pig",
    "location": "Atlanta, GA",
    "cuisine": "Spanish Tapas"
  },
  "reviews": [
    {
      "aspect": "service",
      "score": 2,
      "comment": "Service was a bit questionable as my server didn't come off very friendly to me, felt a bit snooty. Maybe she had a rough day so wasn't giving her best personality so brushed it off!"
    },
    {
      "aspect": "food",
      "score": 5,
      "comment": "Food was amazing as always since this is my second time here at this location. If you like mushrooms, definitely try the hongos. It comes with crispy flavorful shallots. I tried the 3-cheese board, empanadas, pork cheek tacos, lomo and gambas. All so delicious!"
    },
    {
      "aspect": "ambiance",
      "score": 5,
      "comment": "Ambiance very romantic. Iberian Pig is always a great ATL spot to go to for Spanish tapas!"
    },
      "aspect": "dishes",
      "subcategories": [
        {
          "name": "hongos",
          "score": 5,
          "comment": "Definitely try the hongos. It comes with crispy flavorful shallots."
        },
        {
          "name": "3-cheese board",
          "score": 5,
          "comment": "The 3-cheese board was delicious."
        },
        {
          "name": "empanadas",
          "score": 5,
          "comment": "The empanadas were delicious."
        },
        {
          "name": "pork cheek tacos",
          "score": 5,
          "comment": "The pork cheek tacos were delicious."
        },
        {
          "name": "lomo",
          "score": 5,
          "comment": "The lomo was delicious."
        },
        {
          "name": "gambas",
          "score": 5,
          "comment": "The gambas were delicious."
        }
      ]
    }
  ]
},
"general_score": 4
```

Database Filtering from Natural Language Query (DONE!)

Step 1: Send to GPT4:

1. User's query
2. Database schema
3. Special prompt

> I am looking for a great Spanish restaurant in NYC. I love jamon stuff and we also enjoy tapas style restaurants. For a date night. Lively place preferred.
>
> →

Spanish Restaurant | Tapas Style | Lively Ambiance | Date Night | Jamon Dishes | New York City

business_id	name	address	city	state	postal_code
z8-_6I5EhX5NuPfWzJYQMA	Great Wraps	3393 Peachtree Rd NE	Atlanta	GA	30326
Q2vefh0tGhtCGQDK1FI7cw	Piece of Cake	3215 Roswell Rd NE	Atlanta	GA	30305
TbZDLpBOl-EbO2LfMySrEg	First China Restaurant	5295 Buford Hwy NE	Atlanta	GA	30340
bP6goJODwRnM3AVy45Kn9w	Papi's Cuban & Caribbean Grill	216 Ponce De Leon Ave NE	Atlanta	GA	30308
yCeENvVAGQQ0PeeWU0Pl2g	Nature's Table Bistro	6000 N Terminal Pkwy, Concourse E Centrepoint, Concourse E	Atlanta	GA	30320

Step 2: GPT4 returns to the backend only the **custom pandas code** necessary to perform the **filtering**.

Step 3: Llama Index's **agent** executes the code, **filtering the dataset** to only include Tapas Style Spanish restaurants in NYC, that have Jamon as a menu item.

```
Answer: The best Spanish restaurants in Atlanta, based on their Yelp ratings, are:
1. The Iberian Pig - 4.5 stars (184 reviews)
2. Buena Vida Tapas & Sol - 4.5 stars (124 reviews)
3. Bar.bacoa - 4.5 stars (154 reviews)
4. Botica - 4.5 stars (10 reviews)
5. Cooks & Soldiers - 4.5 stars (608 reviews)
```

OpenTable®

⭐⭐⭐⭐⭐ Dined on February 17, 2024

Overall 5 • **Food** 5 • **Service** 5 • **Ambience** 5

Y

Yourcustomer

Memphis/West TN

💬 1 review

"I love the relaxed feel of this place -the ambiance was everything. The server Alicia was amazing she made our experience joyful. She took her time and catered to the entire party's needs! The steak, chicken &waffle and shrimp & grits were amazing and the Lemon drop alcoholic beverage was refreshing. I definitely would return to try more dishes and drinks.

Read less

👍 Is this helpful?　　　🏳 Report

• • • • •

no. 246

I'd describe this restaurant as...

Select all that apply

Hot spot　Romantic　Lively　Fancy

Innovative　Charming　Neighborhood gem

This restaurant is...

Select all that apply

Great for craft beers　Healthy

Great for creative cocktails　Great for brunch

Vegan-friendly　Vegetarian-friendly

Gluten-free-friendly　Great for fine wines

I'd recommend this restaurant as...

Select all that apply

Great for live music　Dog-friendly

Great for happy hour　Good for groups

Good for special occasions　Great for scenic views

Kid-friendly　Good for business meals

Great for outdoor dining

• • • • •

Gabriel, how was your experience at no. 246

Rate your dining experience (required)
Reservation made on 1/21/2024

Overall	⭐⭐⭐⭐⭐
Food	⭐⭐⭐⭐⭐
Service	⭐⭐⭐⭐⭐
Ambience	⭐⭐⭐⭐⭐
Value	⭐⭐⭐⭐⭐
Noise level	▬ ▬ ▬ ▬

Cho Sprint Update

- Search ranking algorithm/methods
- Incorporate multivariate Bayesian averages

Next steps

- Fine tuning algorithm
- Work on integrating the algorithm into application

Jeffrey Sprint Update

- Explored how to implement llamaIndex API to integrate with frontend UI
- Began building API on EC2
- AWS denied extra funds

Next Steps

- Finish API
- Figure out how to pull image data in association with business

Topher Sprint Update

- Add unstructured JSON to PostgreSQL database for "enriched" data
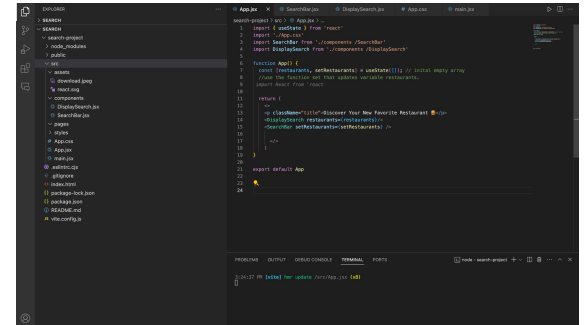- Learn React solution to rendering results in order to continue working with Mike on the frontend

Next Steps

BEAST Craft BBQ | {"WiFi": "u'free'", "HasTV": "True", "Caters": "True", "Al
mantic': False, 'divey': False, 'intimate': False, 'trendy': False, 'upscale'
ng": "True", "DogsAllowed": "False", "GoodForKids": "True", "GoodForMeal": "{
lse, 'breakfast': False}", "OutdoorSeating": "False", "BusinessParking": "{'g
, "RestaurantsAttire": "u'casual'", "RestaurantsTakeOut": "True", "Restaurant
lse", "RestaurantsPriceRange2": "2", "RestaurantsReservations": "False", "Res
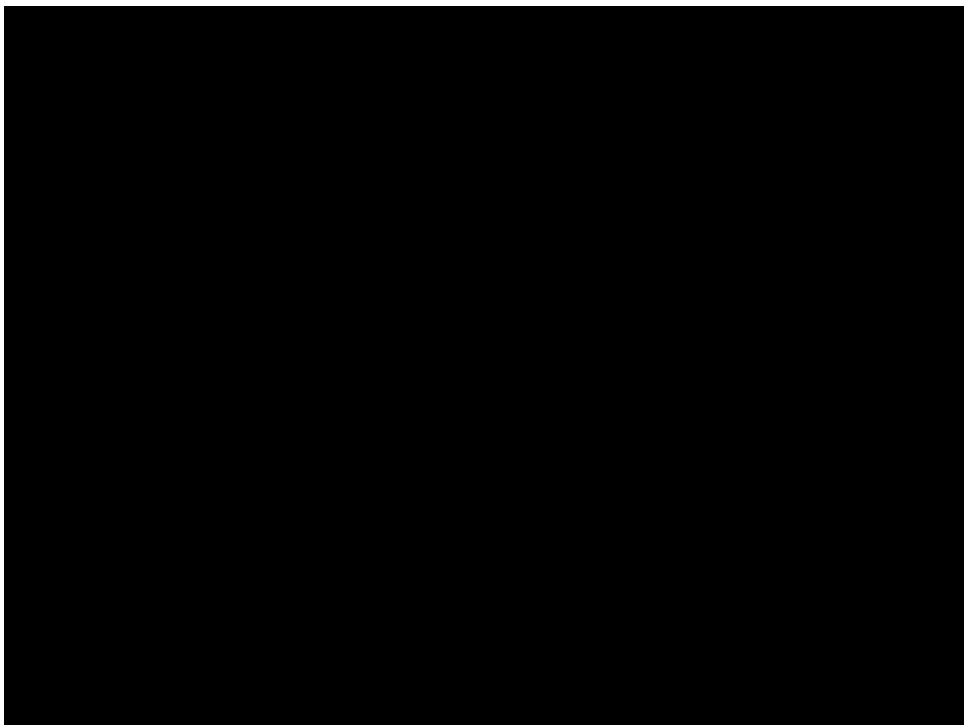ptsCreditCards": "True"}
(1 row)

- Finish enriching the dataset
- Update RDS instance with new schema that includes review attributes
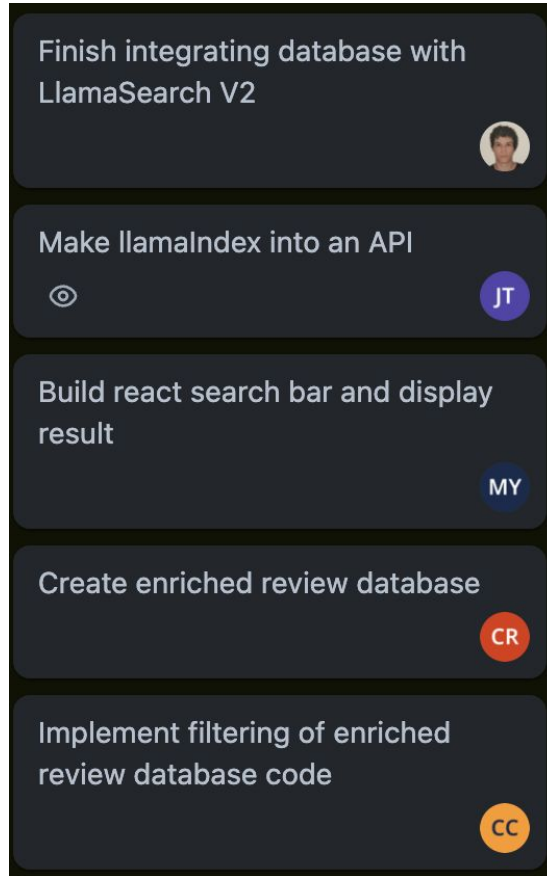
Mike Sprint Update

- Completed v1 of the search page.
- Integrate with the existing front-end UI
- Continue brainstorming next steps with the team, such as:
  - Adding options for users to start booking now through the OpenTable API, stripe payments.
- Current technologies React, node, express, vite, npm, tailwind css
- Future:Implement and connect the Clerk API to the MongoDB cluster:
  - Define schema, etc.
  - Store user preferences and information.

Frontend Demo

Sprint #6 and Deadlines Backlog

Finish integrating database with LlamaSearch V2

Make llamaIndex into an API

JT

Build react search bar and display result

MY

Create enriched review database

CR

Implement filtering of enriched review database code

CC

Questions?